ZOOM IN ON PICTURES TO SEE DETAILS
HIGH RES PICTURES MOSTLY

855 RF TO DC ELECTRICITY AVAILABLE FOR PURCHASE
857 - WIMHURST ELECTROSTATIC GENERATOR
911 - FOG NETS
919 - ACOUSTIC LEVITATION
923 - INVISIBILITY - OPTICS
926 - ANTENNA BALUN TECH KNOWLEDGE
945 ION ENERGY GROUP MCCOWEN OWNER
STATIC ELECTRIC GENERATOR
961- CONVERT SEA WATER TO DRINKING WATER
977 - 1052- JOULE THIEFS
1053- 1076 ANTENNA TUNERS
1076- PROOF OF CONCEPT RF TO DC CONVERSION
1082-1083 TESLA LONGITUDINAL SCALAR WAVE GENERATOR
DAVID HAMEL PLANET KLADEN IS BEHIND THE MOON ALTERNATE EARTH
WITH ALTERNATE HUMANS
1084 WW2 RADIO
1087 -1095 SURVIVAL
1098- VIBRATION SCALE ROSICRUCIAN ORDER
1100-1110- CHARTS - LOGIC GATES
1111 ORGONONITE - CLOUDBUSTERS
1113- STREET POLE
1119- TESLA TOWER / NYC TOWER?
1123-1955 - REPEAT MAYBE
1824 - RF ATTENUATORS
1834 -1841 HOMEMADE RF PROBE / SIGNAL TRACER
1845 - BRIDGE RECTIFIER
1848 - 1866 QRP CRYSTAL WAVE TRANSMITTER
SEND AND RECIEVE FULLY FUNCTIONAL CB
1867- CIRCLE OF FIFTHS
1871- 1892 SHORTWAVE CRYSTAL RADIO - TELE MESSAGE
1894 QRP SWR INDICATOR
1896 - RF FIELD STRENGTH METER 2.4GHZ RANGE
1898- RF AMMETER
1911- 1925 RF PROBE SCHEMATICS BUILD
1926 - AMBIENT RADIO HARVESTING FOR CHARGING PURPOSES
1932- PRO RF HARVESTING TECHNIQUES
2020 - 2032 NATURAL WATER PRODUCTION
2044 - REGENERATIVE RECEIVERS
2077 -WELCOME TO THE RABBIT HOLE
2084 - ANDREW BASIAGO MET LINCOLN
2088 - U ALREADY KNOW
2100 - BOSNIAN PYRAMIDS - BUCEGI ALIEN COMPLEX
2109 - POISON CHEMTRAILS
2112 - MIND CONTROL

2121- GREAT ICE WALL
2249 CERN
2288 - ANCIENT TECH
2340 UNDERGROUND CIVILIZATIONS
2353 - EXTRA
2445 - CRYSTAL TRANSMITTER

Robert T. Kiyosaki

Active

You work for money

Employed
You exchange your time and effort for an income. You don't work you do not get paid!

E

Self Employed
You work for yourself but can you take a 6 week holiday and your business keeps on going without you?

S

Passive

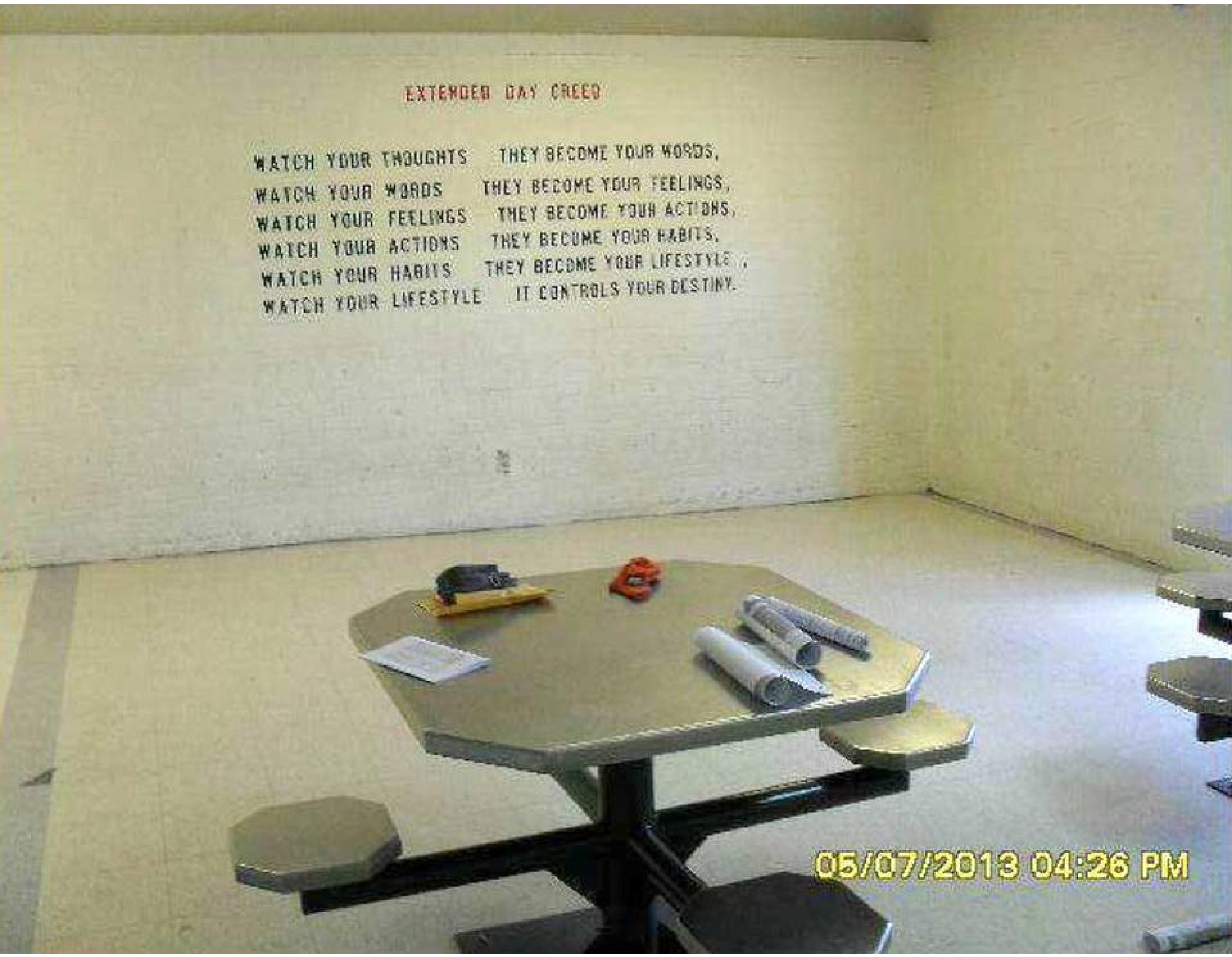
Money working for you

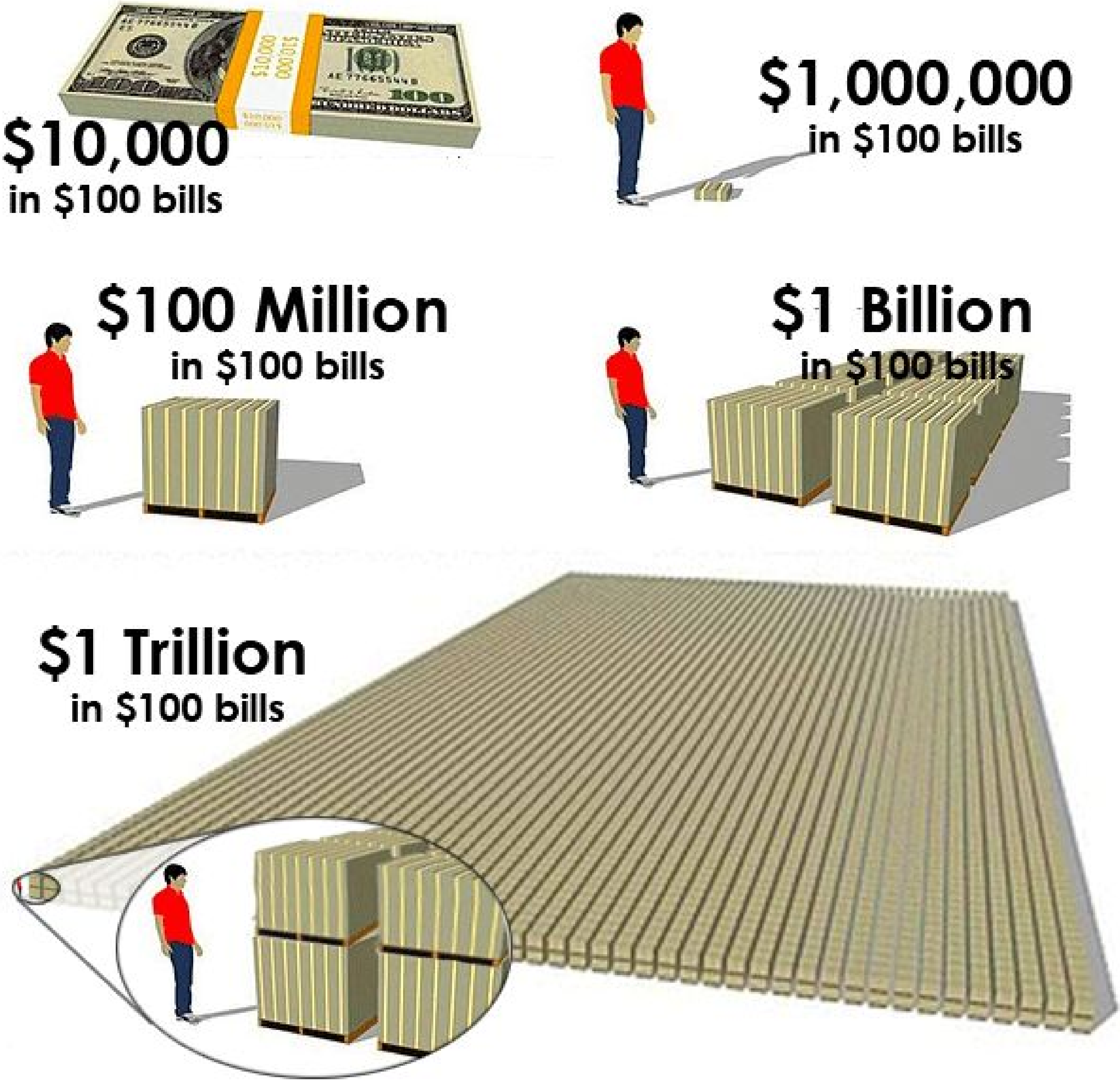
B

Big Business
These people have people working hard for them to generate them an income!

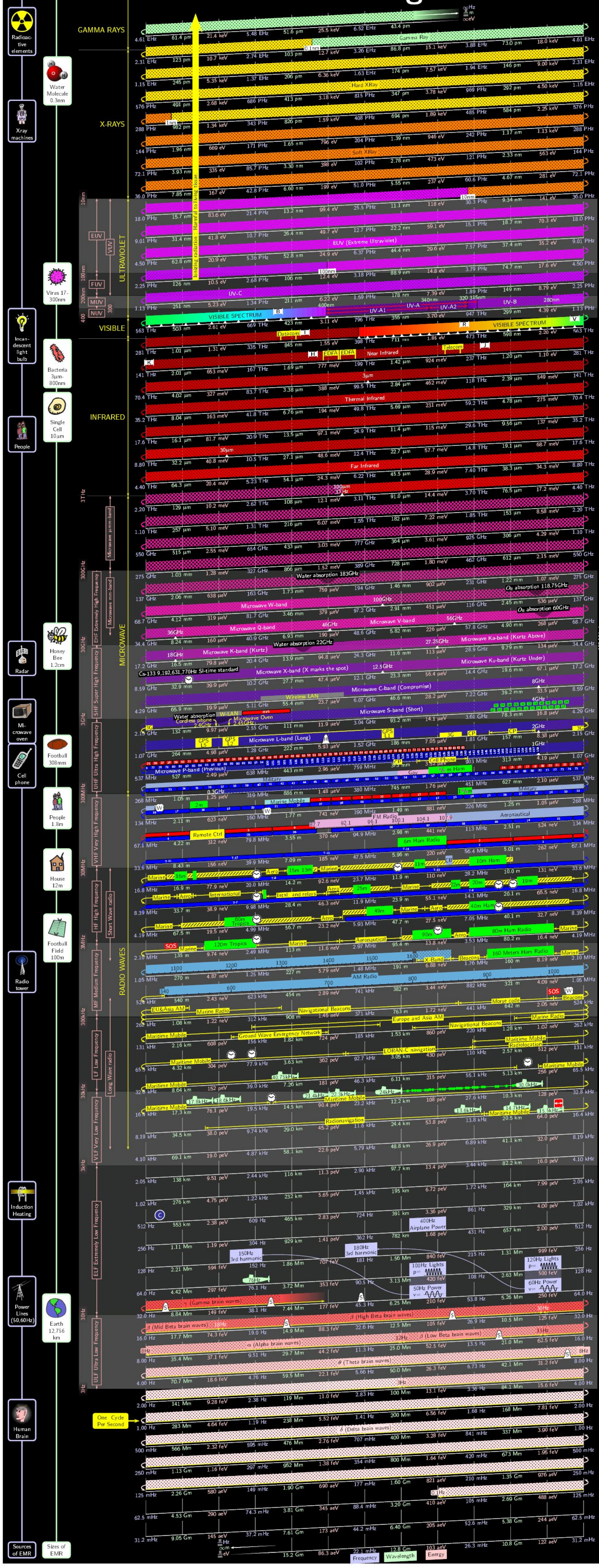
I

Investor
They are the people that have money working hard for them. Play golf and live a good life!


EXTENDED DAY CREED
WATCH YOUR THOUGHTS THEY BECOME YOUR WORDS,
WATCH YOUR WORDS THEY BECOME YOUR FEELINGS,
WATCH YOUR FEELINGS THEY BECOME YOUR ACTIONS,
WATCH YOUR ACTIONS THEY BECOME YOUR HABITS,
WATCH YOUR HABITS THEY BECOME YOUR LIFESTYLE,
WATCH YOUR LIFESTYLE IT CONTROLS YOUR DESTINY.
05/07/2013 04:26 PM


$10,000
in $100 bills
$1,000,000
in $100 bills
$100 Million
in $100 bills
$1 Billion
in $100 bills
$1 Trillion
in $100 bills

The Electromagnetic Radiation Spectrum



How to read this chart

- This chart is organized in octaves (frequency doubling/halving) starting at 1Hz and going higher (2,4,8, etc) and lower (1/2, 1/4, etc). The octave is a natural way to represent frequency.
- Frequency increases on the vertical scale in the upward direction.
- The horizontal bars wrap around from right to far left as the frequency increases upwards.
- There is no limit to either end of this chart, however, due to limited space, only the "known" items have been shown here. A frequency of 0Hz is the lowest possible frequency but the method of depicting octaves used here does not allow for ever reaching 0Hz, only approaching it. Also, by the definition of frequency (Cycles per second), there is no such thing as negative frequency.
- Values on the chart have been labelled with the following colours: Frequency measured in Hertz, Wavelength measured in meters, Energy measured in electronVolts.

Ultraviolet Light

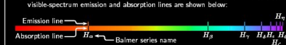
- Ultraviolet light is beyond the range of human vision.
- Physicists have divided ultraviolet light ranges into Vacuum Ultraviolet (VUV), Extreme Ultraviolet (EUV), Far Ultraviolet (FUV), Medium Ultraviolet (MUV), and Near Ultraviolet (NUV).
- UV-A, UV-B and UV-C were introduced in the 1930's by the Commission Internationale de l'Éclairage (CIE, International Commission on Illumination) for photobiological spectral bands.
- Short-term UV-A exposure causes sun-tanning which helps to protect against sunburn. Exposure to UV-B is beneficial to humans by helping the skin produce vitamin D. Excessive UV exposure causes skin damage. UV-C is harmful to humans but is used as a germicide.
- The CIE originally divided UVA and UVB at 315nm, later some photo-dermatologists divided it at 320nm.
- UVA is subdivided into UVA1 and UVA2 for DNA altering effects at 340nm.
- The sun produces a wide range of frequencies including all the ultraviolet light, however, UVB is partially filtered by the ozone layer and UVC is totally filtered out by the earth's atmosphere.
- A bumblebee can see light in the UVA range which helps them identify certain flowers.

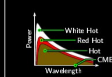
Emission and Absorption

- As EMR passes through elements, certain wavelength bands get absorbed and some new ones get emitted. This absorption and emission produces characteristic spectral lines for each element which are useful in determining the makeup of distant stars. These lines are used to prove the red-shift amount of distant stars.
- When a photon hits an atom it may be absorbed if the energy is just right. The energy level of the electron is raised – essentially holding the radiation. A new photon of specific wavelength is created when the energy is released. The jump in energy is a discrete step and many possible levels of energy exist in an atom.
- Johann Balmer created this formula defining the photon emission wavelength (λ); where m is the initial electron energy level and n is the final electron energy level:

$$\lambda = 364.56nm \left(\frac{m^2}{m^2-n^2}\right)$$

- Much of the interstellar matter is made of the simplest atom hydrogen. The hydrogen visible-spectrum emission and absorption lines are shown below:



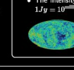


- Max Planck determined the relationship between the temperature of an object and its radiation profile; where R_λ is the radiation power, λ is the wavelength, T is the temperature:

$$R_\lambda = \frac{37418}{\lambda^5\left(e^{\frac{14388}{\lambda T}} - 1\right)}$$

Cosmic Microwave Background Radiation

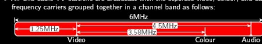
- CMB radiation is the leftover heat from the hot early universe, which last scattered about 400,000 years after the Big Bang.
- CMB permeates the entire universe at a temperature of 2.725 ± 0.001K.
- CMB was predicted in the 1940's by Ralph Alpher, George Gamow and Robert Herman.
- Arno Penzias and Robert Wilson accidentally discovered CMB while working for Bell Telephone Laboratories in 1965.
- The intensity is measured in Mega Jansky (Jy) per steradian. $1Jy = 10^{-26} W/m^2/Hz$



Close examination of slight CMB intensity variations in different parts of the sky help cosmologists study the formation of galaxies. WMAP photo by NASA

Television

- Television is transmitted in the VHF and UHF ranges (30MHz - 3GHz).
- TV channels transmitted over the air are shown as TV.
- TV channels transmitted through cable (CATV) are shown as TV. CATV channels starting with "T-" are channels fed back to the cable TV station (like news feeds).
- Air and cable TV stations are broadcast with the separate video, colour, and audio frequency carriers grouped together in a channel band as follows:



- Satellite channels broadcast in the C-Band are depicted as TV. These stations are broadcast in alternating polarities (Ex. Ch 1 is vertical and 2 is horizontal and vice versa on neighbouring satellites).
- The 15.7 kHz horizontal sweep signal produced by a TV can be heard by some young people. This common contaminant signal to VLF spectra listening is depicted as ↔.

Radio Bands

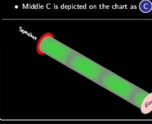
- The radio spectrum (ELF to EHF) is populated by many more items than can be shown on this chart, only a small sampling of bands used around the world have been shown.
- Communication using EMR is done using either:
  - Amplitude Modulation (AM)

  OR
  - Frequency Modulation (FM)

- Each country has its own rules and regulations for allotting bands in this region. For more information, look up the radio communications authority in your area (Ex. FCC in the US, DOC in Canada).
- Not all references agree on the ULF band range, the HAARP range is used here.
- RAdio Detecting And Ranging (RADAR) uses EMR in the microwave range to detect the distance and speed of objects.
- Citizens Band Radio (CB) contains 40 stations between 26.965-27.405MHz.
- Schumann resonance is produced in the cavity between the Earth and the ionosphere. The resonant peaks are depicted as S
- Hydrogen gas emits radio band EMR at 21cm H
- Some individual frequencies are represented as icons:
  - xxHz Submarine communications
  - Time and frequency standards
  - xxm Ham radio and international meter bands
  - Miscellaneous short wave radio
  - W Weather stations
  - CP Cellular and PCS Phones (including; FDMA, TDMA, CDMA ranges)

Sound

- Although sound, ocean waves, and heartbeats are not electromagnetic, they are included on this chart as a frequency reference. Other properties of electromagnetic waves are different from sound waves.
- Sound waves are caused by an oscillating compression of molecules. Sound cannot travel in a vacuum such as outer space.
- The speed of sound in air is 1240kph (770mph).
- Humans can only hear sound between ≈20Hz to ≈20kHz.
- Infrasound (below 20Hz) can be sensed by internal organs and touch. Frequencies in the 0.2Hz range are often the cause of motion sickness.
- Bats can hear sound up to ≈50kHz.
- The 88 piano keys of the Equal Temperament scale are accurately located on the frequency chart.
- Over the ages people have striven to divide the continuous audio frequency spectrum into individual musical notes that have harmonious relationships. Microtonal musicians study various scales. One recent count lists 4700 different musical scales.
- Middle C is depicted on the chart as C



This image depicts air being compressed as sound waves in a tube from a speaker and then travelling through the tube towards the ear.

Gravity Waves

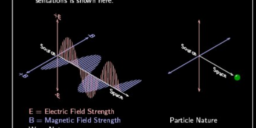
- Gravity is the mysterious force that holds large objects together and binds our planets, stars and galaxies together. Many people have unsuccessfully theorized about the details of gravity and its relationship to other forces. There have been no links between gravity waves and electromagnetic radiation.
- Gravity is theorized to warp space and time. In fact, gravity is responsible for bending light as observed by the gravity-lens example of distant galaxies.
- "Gravity waves" would appear as ripples in space-time formed by large objects moving through space that might possibly be detected in the future by very sensitive instruments.
- The speed that gravity propagates through space has been theorized to be the same as the speed of light.

Brain Waves

- By connecting electrodes from the human head to an electroencephalograph (EEG), it is possible to measure very small cyclic electrical signals.
- There has been much study on this topic, but like all effects on humans, the science is not as exact as the science of materials.
- Generally, lower brain wave frequencies relate to sleep, and the higher frequencies relate to alertness.
- Devices have been made for measuring and stimulating brain waves to achieve a desired state.

Electromagnetic Radiation (EMR)

- EMR is emitted in discrete units called photons but has properties of waves as seen by the images below. EMR can be created by the oscillation or acceleration of electrical charge or magnetic field. EMR travels through space at the speed of light ($2.997\,924\,58 \times 10^8$ m/s). EMR consists of an oscillating electrical and magnetic field which are at right angles to eachother and spaced at a particular wavelength. There is some controversy about the phase relationship between the electrical and magnetic fields of EMR, one of the theoretical representations is shown here:



- The particle nature of EMR is exhibited when a solar cell emits individual electrons when struck with very dim light.
- The wave nature of EMR is demonstrated by the famous double slit experiment that shows cancelling and addition of waves.
- Much of the EMR properties are based on theories since we can only see the effects of EMR and not the actual photon or wave itself.
- Albert Einstein theorized that the speed of light is the fastest that anything can travel. So far he has not been proven wrong.
- EMR can have its wavelength changed if the source is receding or approaching as in the red-shift example of distant galaxies and stars that are moving away from us at very high speeds. The emitted spectral light from these receding bodies appears more red than it would be if the objects was not moving away from us.
- We only have full electronic control over frequencies in the microwave range and lower. Higher frequencies must be created by waiting for the energy to be released from elements as photons. We can either pump energy into the elements (ex. heating a rock with visible EMR and letting it release infrared EMR) or let it naturally escape (ex. uranium decay).
- We can only see the visible spectrum. All other bands of the spectrum are depicted as hatched colours.

Système International d'unité prefixes (SI unit prefixes)

Symbol	Name	Exp.	Multiplier
Y	yotta	10^{24}	1,000,000,000,000,000,000,000,000
Z	zetta	10^{21}	1,000,000,000,000,000,000,000
E	exa	10^{18}	1,000,000,000,000,000,000
P	peta	10^{15}	1,000,000,000,000,000
T	tera	10^{12}	1,000,000,000,000
G	giga	10^{9}	1,000,000,000
M	mega	10^{6}	1,000,000
k	kilo	10^{3}	1,000
		10^{0}	1
m	milli	10^{-3}	0.001
μ	micro	10^{-6}	0.000 001
n	nano	10^{-9}	0.000 000 001
p	pico	10^{-12}	0.000 000 000 001
f	femto	10^{-15}	0.000 000 000 000 001
a	atto	10^{-18}	0.000 000 000 000 000 001
z	zepto	10^{-21}	0.000 000 000 000 000 000 001
y	yocto	10^{-24}	0.000 000 000 000 000 000 000 001

Measurements on this chart

Symbol	Name	Value
c	Speed of Light	$2.997\,924\,58 \times 10^8$ m/s
h	Planck's Constant	$6.626\,1 \times 10^{-34}$ J·s
$\hbar$	Planck's Constant (freq)	$1.054\,592 \times 10^{-34}$ J·s
f	Frequency (cycles / second)	Hz
λ	Wavelength (meters)	m
E	Energy (Joules)	J

Conversions

$E = h \cdot f$

$\lambda = \frac{c}{f}$

1Å = 0.1nm

1nm = 10Å

1Joule = 6.24×10^{18} eV

Gamma Rays

- Gamma radiation is the highest energy radiation (up to ≈ 10^{20} eV) that has been measured. At this energy, the radiation could be from gamma-rays, protons, electrons, or something else.
- Alpha, beta, and delta radiation are not electromagnetic but are actually parts of the atom being released from a radioactive atom. In some cases this can cause gamma radiation. These are not to be confused with brain waves of similar names.

Visible Spectrum

- The range of EMR visible to humans is also called "Light". The visible spectrum also closely resembles the range of EMR that filters through our atmosphere from the sun.
- Other creatures see different ranges of visible light, for example bumble-bees can see ultraviolet light and dogs have a different response to colours than do humans.
- The sky is blue because our atmosphere scatters light and the shorter wavelength blue gets scattered the most. It appears that the entire sky is illuminated by a blue light but in fact that light is scattered from the sun. The longer wavelengths like red and orange move straight through the atmosphere which makes the sun look like a bright white ball containing all the colours of the visible spectrum.
- Interestingly, the visible spectrum covers approximately one octave.
- Astronomers use filters to capture specific wavelengths and reject unwanted wavelengths, the major astronomical (visual) filter bands are depicted as X

Infrared Radiation

- Infrared radiation (IR) is sensed by humans as heat and is below the range of human vision. Humans (and anything at room temperature) are emitters of IR.
- IR remote control signals are invisible to the human eye but can be detected by most camcorders.
- Night vision scopes/goggles use a special camera that senses IR and converts the image to visible light. Some IR cameras employ an IR lamp to help illuminate the view.
- IR LASERs are used for burning objects.
- A demonstration of IR is to hold a metal bowl in front of your face. The IR emitted by your body will be reflected back using the parabolic shape of the bowl and you will feel the heat.
- Fiber-optic based infrared communication signals are sometimes amplified with Erbium-Doped Fiber Amplifiers EDFA

LASER

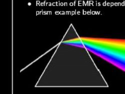
- LASER is an acronym for **L**ight **A**mplification by **S**timulated **E**mission of **R**adiation.
- A LASER is a device that produces monochromatic EMR of high intensity.
- With proper equipment, any EMR can be made to operate like a LASER. For example, microwaves are used to create a MASER.

Polarization

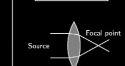
- As a photon (light particle) travels through space, its axis of electrical and magnetic fluctuations does not rotate. Therefore, each photon has a fixed linear polarity of somewhere between 0° to 360°. Light can also be circularly and elliptically polarized.
- Some crystals can cause the photon to rotate its polarization.
- Receivers that expect polarized photons will not accept photons that are in other polarities. (ex. satellite dish receivers have horizontal and vertical polarity positions).
- A polarized filter (like Polaroid™ sunglasses) can be used to demonstrate polarized light. One filter will only let photons that have one polarity through. Two overlapping filters at right angles will almost totally block the light that exits, however, a third filter inserted between the first two at a 45° angle will rotate the polarized light and allow some light to come out the end of all three filters.
- Light that reflects off an electrical insulator becomes polarized. Conductive reflectors do not polarize light.
- Perhaps the most reliably polarized light is a rainbow.
- Moonlight is also slightly polarized. You can test this by viewing the moonlight through a Polaroid™ sunglass lens, then rotate that lens, the moonlight will dim and brighten slightly.

Refraction

- Refraction of EMR is dependent on wavelength as can be seen by the prism example below.



By using a glass prism, white light can be spread by refraction into a spectrum of its composite colours. All wavelengths of EMR can be refracted by using the proper materials.



Convex lenses make objects appear closer and are used to correct far-sitedness.

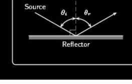
Concave lenses make objects appear farther away and are used to correct near-sitedness.

Photo by STScI

Heavy objects like dense galaxies and large planets cause light to bend due to gravitational lensing.

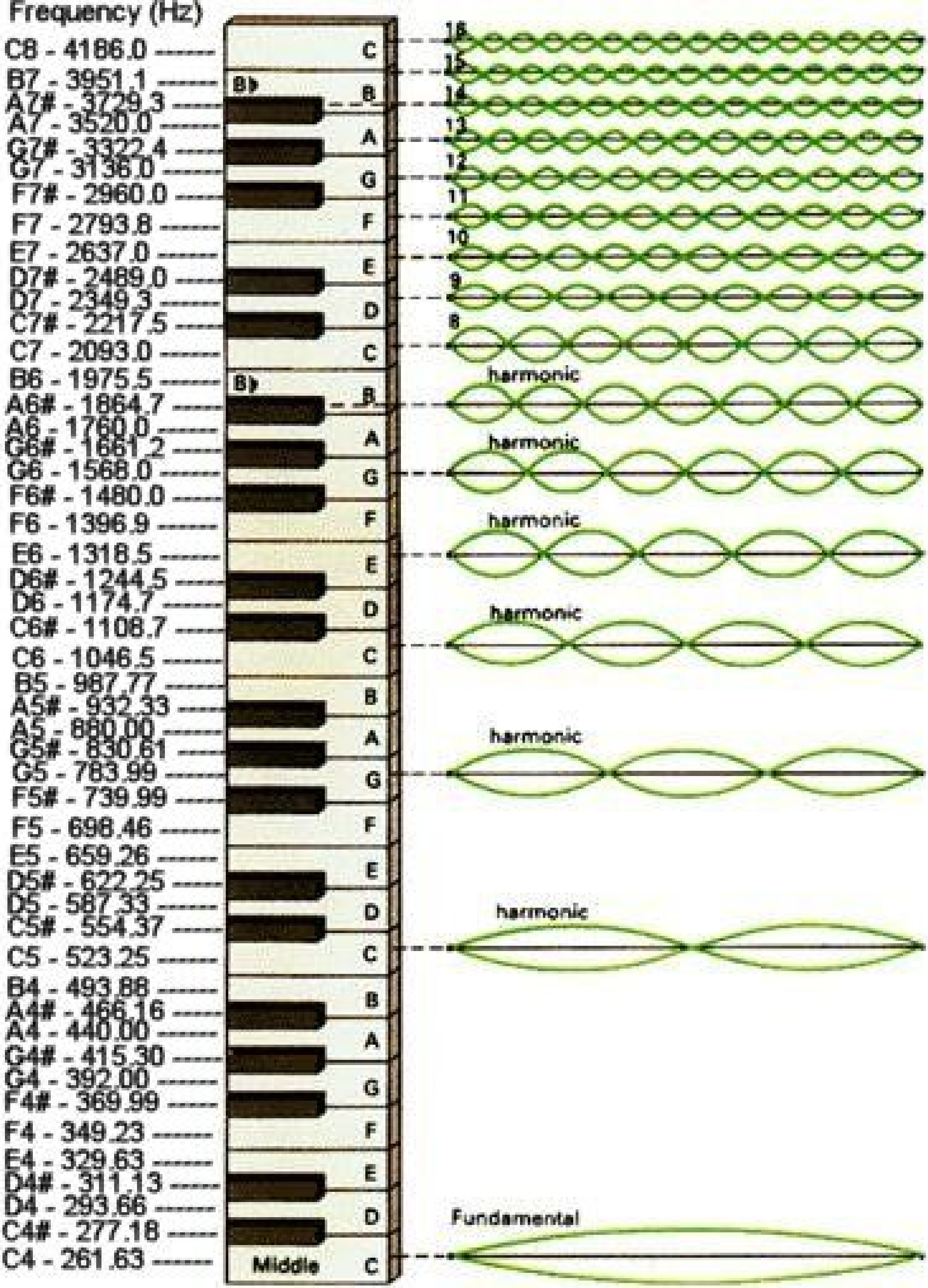
Reflection

- Reflection of EMR is dependent on wavelength as demonstrated when visible light and radio waves bounce off objects that X-Rays would pass through. Microwaves, which have a large wavelength compared to visible light, will bounce off metal mesh in a microwave oven whereas visible light will pass through.



EMR of any wavelength can be reflected, however, the reflectivity of a material depends on many factors including the wavelength of the incident beam.

The angle of incidence (θ_i) and angle of reflection (θ_r) are the same.



Frequency (Hz)
C8 - 4186.0
B7 - 3951.1
A7# - 3729.3
A7 - 3520.0
G7# - 3322.4
G7 - 3136.0
F7# - 2960.0
F7 - 2793.8
E7 - 2637.0
D7# - 2489.0
D7 - 2349.3
C7# - 2217.5
C7 - 2093.0
B6 - 1975.5
A6# - 1864.7
A6 - 1760.0
G6# - 1661.2
G6 - 1568.0
F6# - 1480.0
F6 - 1396.9
E6 - 1318.5
D6# - 1244.5
D6 - 1174.7
C6# - 1108.7
C6 - 1046.5
B5 - 987.77
A5# - 932.33
A5 - 880.00
G5# - 830.61
G5 - 783.99
F5# - 739.99
F5 - 698.46
E5 - 659.26
D5# - 622.25
D5 - 587.33
C5# - 554.37
C5 - 523.25
B4 - 493.88
A4# - 466.16
A4 - 440.00
G4# - 415.30
G4 - 392.00
F4# - 369.99
F4 - 349.23
E4 - 329.63
D4# - 311.13
D4 - 293.66
C4# - 277.18
C4 - 261.63
C
B♭
B
A
G
F
E
D
C
B♭
B
A
G
F
E
D
C
B
A
G
F
E
D
C
B
A
G
F
E
D
Middle
C
16
15
14
13
12
11
10
9
8
harmonic
harmonic
harmonic
harmonic
harmonic
harmonic
Fundamental

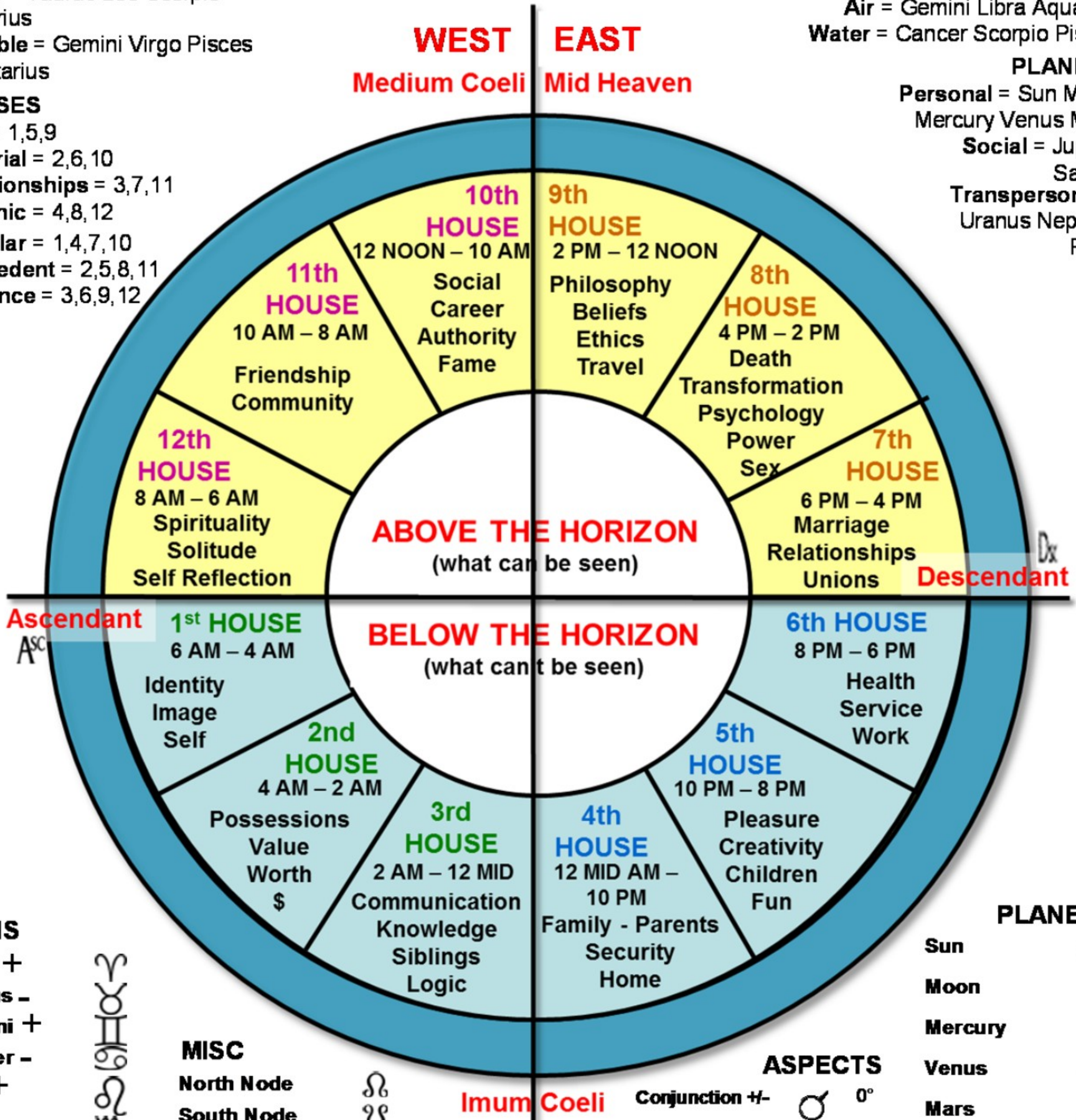
Astrological Cosmology

MODES
Cardinal = Aries Cancer Libra Capricorn
Fixed = Taurus Leo Scorpio Aquarius
Mutable = Gemini Virgo Pisces Sagittarius

HOUSES
Life = 1,5,9
Material = 2,6,10
Relationships = 3,7,11
Psychic = 4,8,12
Angular = 1,4,7,10
Succedent = 2,5,8,11
Cadence = 3,6,9,12

ELEMENTS
Fire = Aries Leo Sagittarius
Earth = Taurus Virgo Capricorn
Air = Gemini Libra Aquarius
Water = Cancer Scorpio Pisces

PLANETS
Personal = Sun Moon Mercury Venus Mars
Social = Jupiter Saturn
Transpersonal = Uranus Neptune Pluto



www.DrakeInnerprizes.com

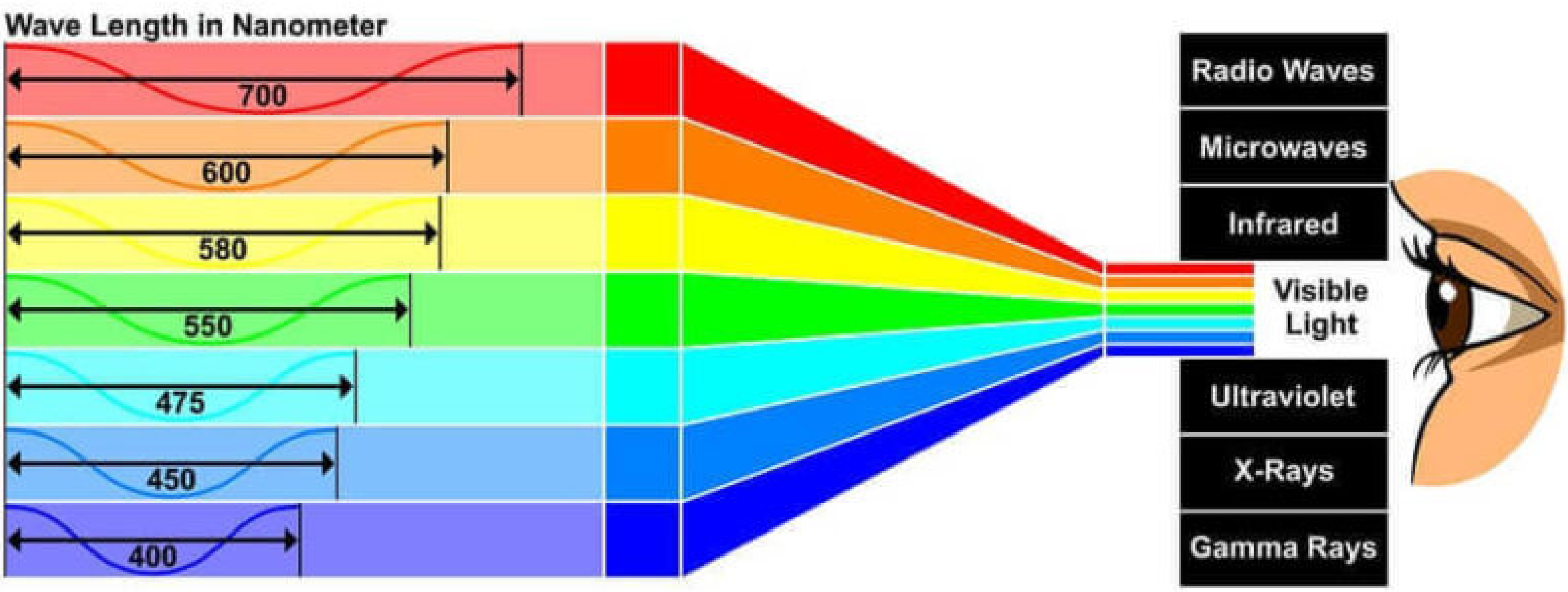
SIGNS
Aries + ♈
Taurus – ♉
Gemini + ♊
Cancer – ♋
Leo + ♌
Virgo – ♍
Libra + ♎
Scorpio – ♏
Sagittarius + ♐
Capricorn – ♑
Aquarius + ♒
Pisces – ♓

MISC
North Node ☊
South Node ☋
Ceres ⚳
Juno ⚵
Pallas Athene ⚴
Vesta ⚶
Chiron ⚷
Retrograde ℞

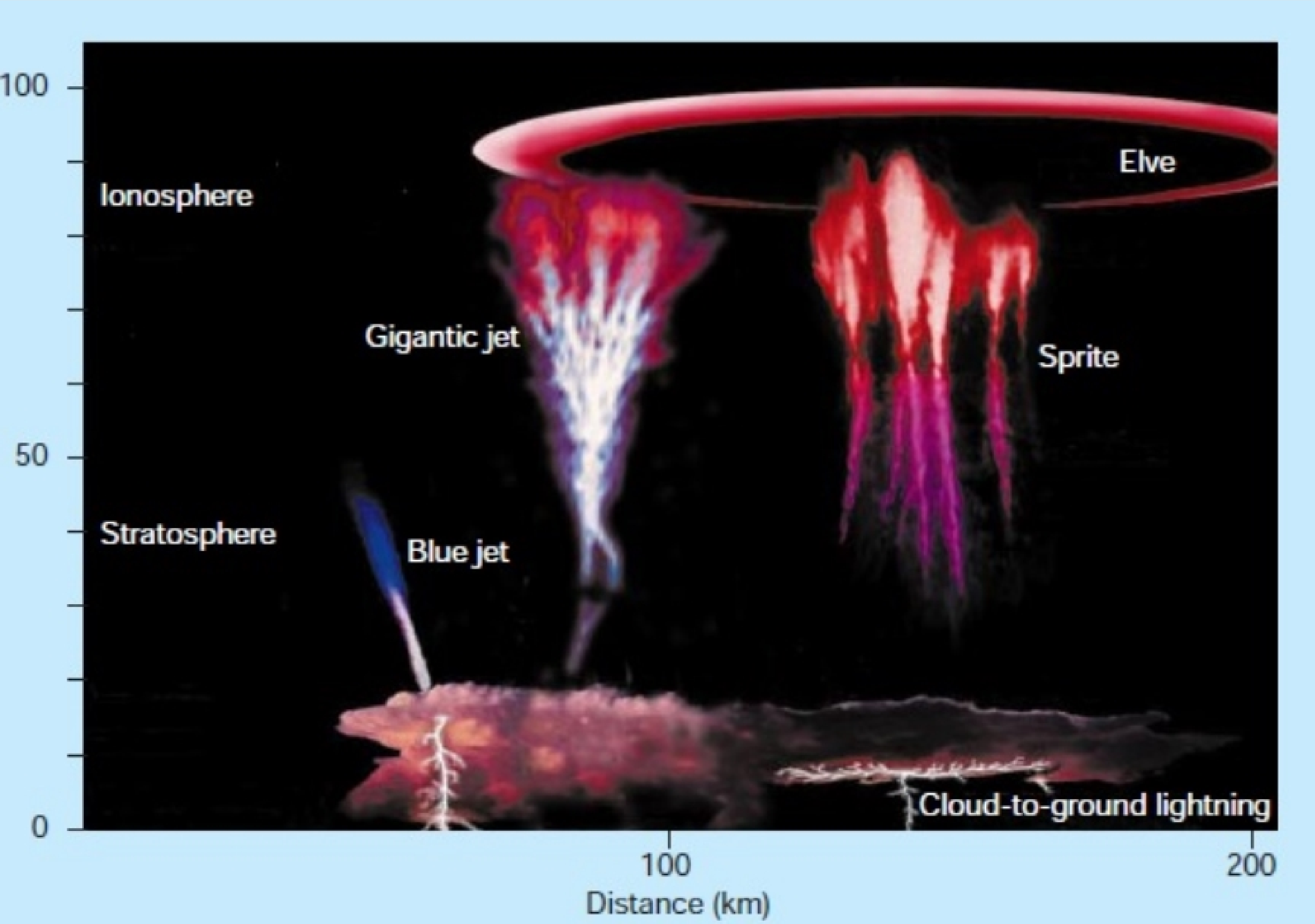
ELEMENTS
Fire 🜂
Water 🜄
Earth 🜃
Air 🜁

ASPECTS
Conjunction +/- ☌ 0°
Opposition - ☍ 180°
Trine + △ 120°
Square - □ 90°
Sextile + ⚹ 60°
Semi-square - ∠ 45°
Sesqui-square - ⚼ 135°

PLANETS
Sun ☉
Moon ☾
Mercury ☿
Venus ♀
Mars ♂
Earth ⊕
Jupiter ♃
Saturn ♄
Uranus ♅
Neptune ♆
Pluto ♇


Wave Length in Nanometer
700
600
580
550
475
450
400
Radio Waves
Microwaves
Infrared
Visible Light
Ultraviolet
X-Rays
Gamma Rays

GENERATORS, HIGH ALTITUDE DISCHARGES, TLE’s



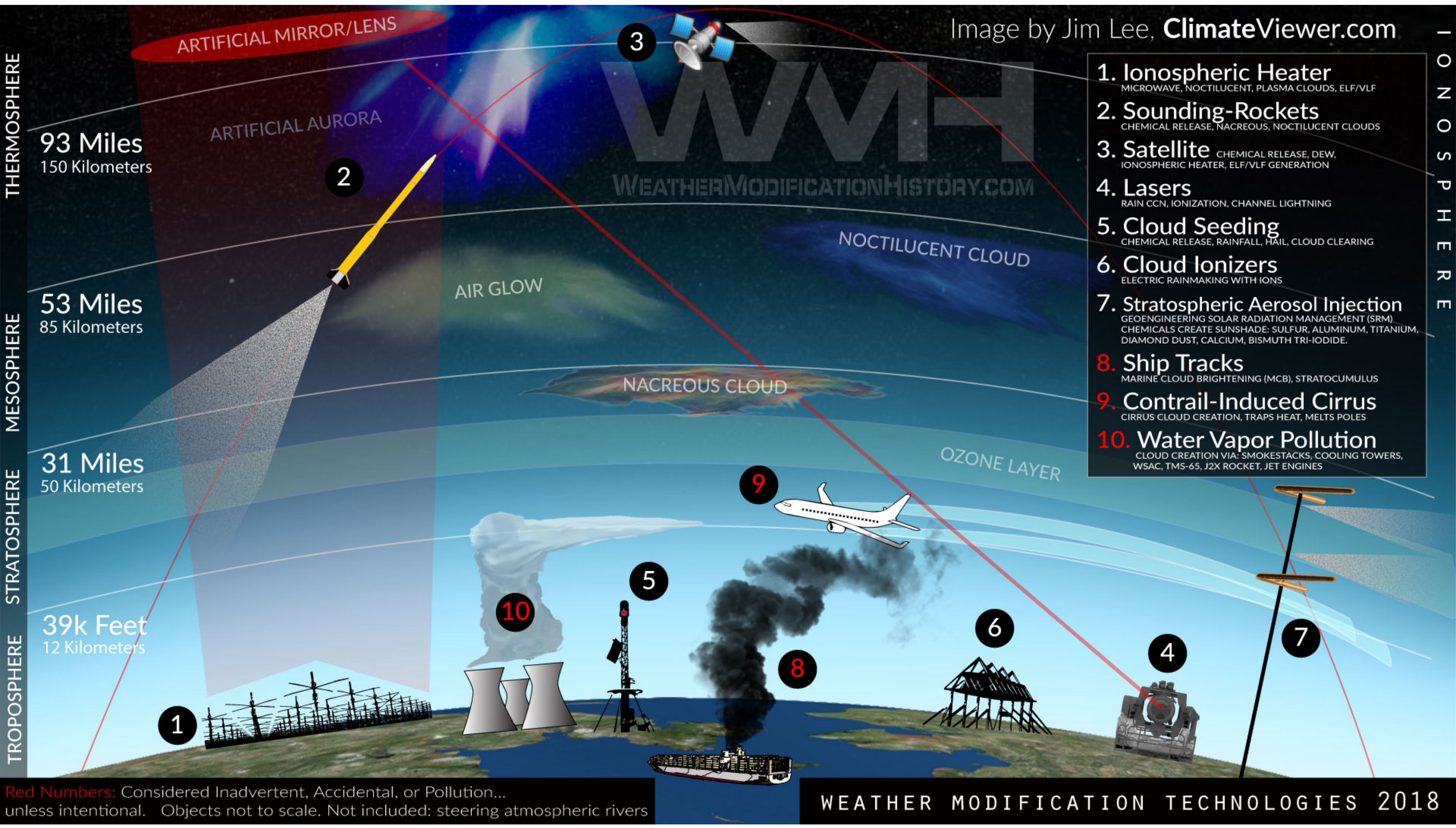
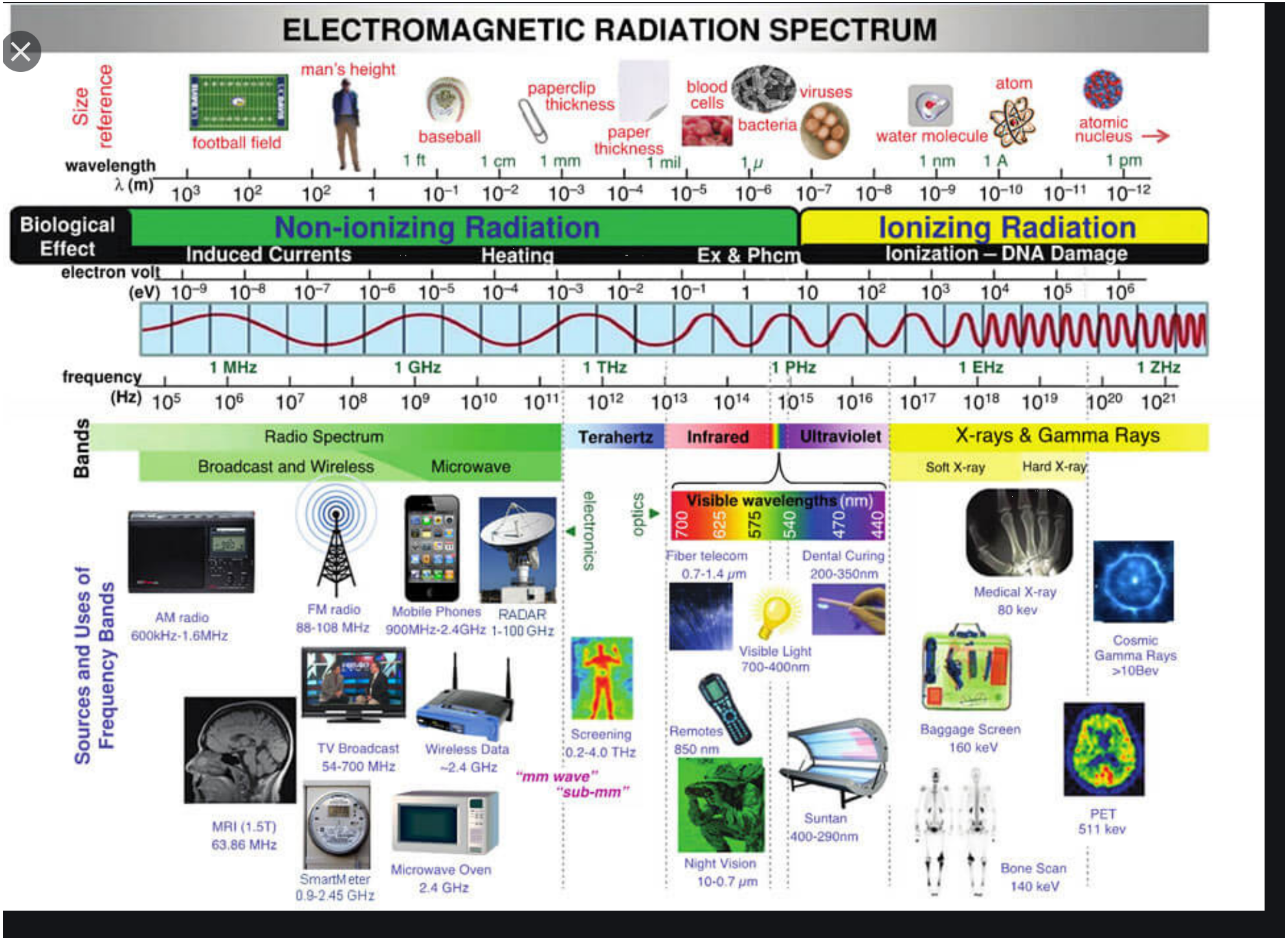
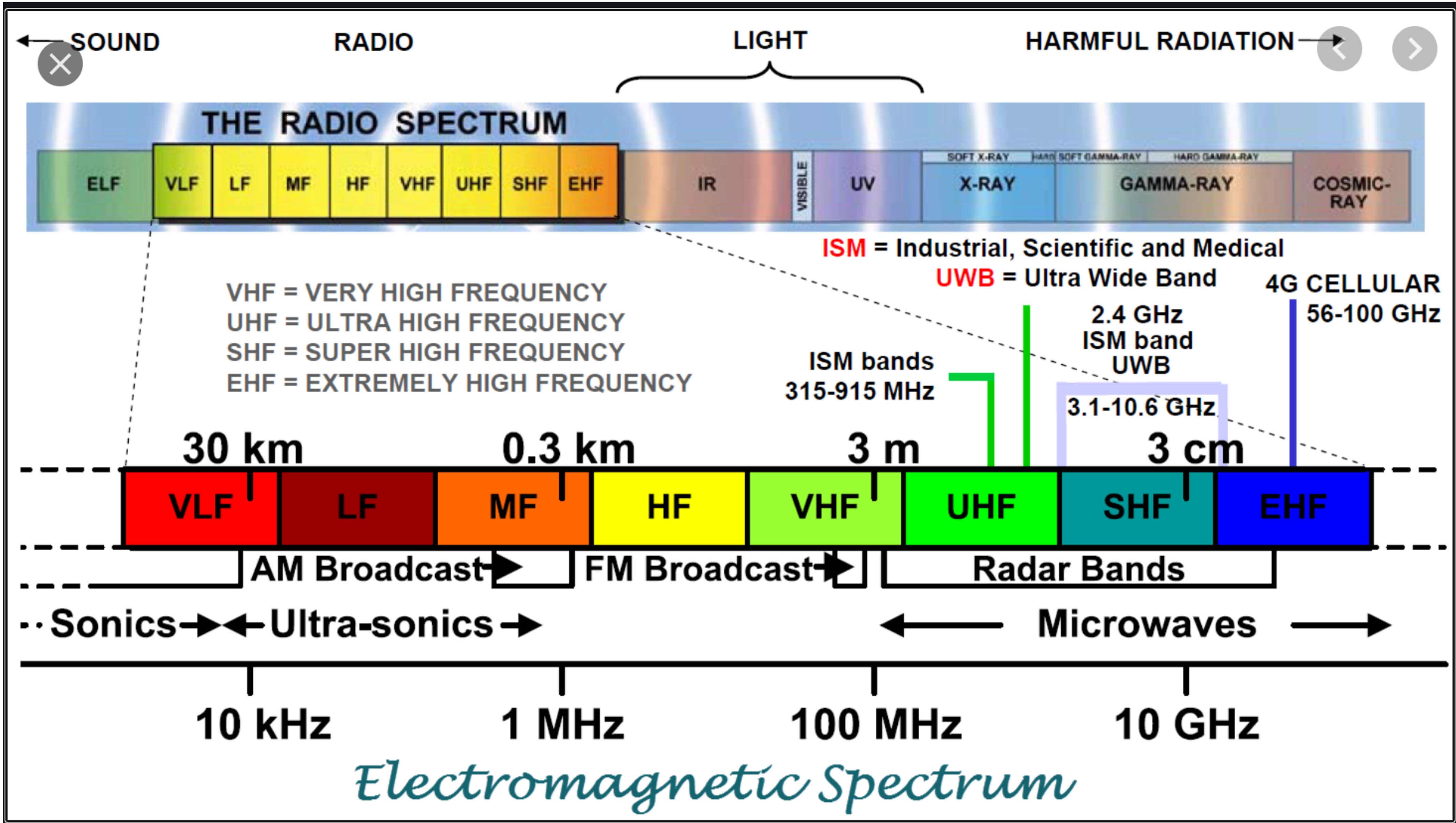
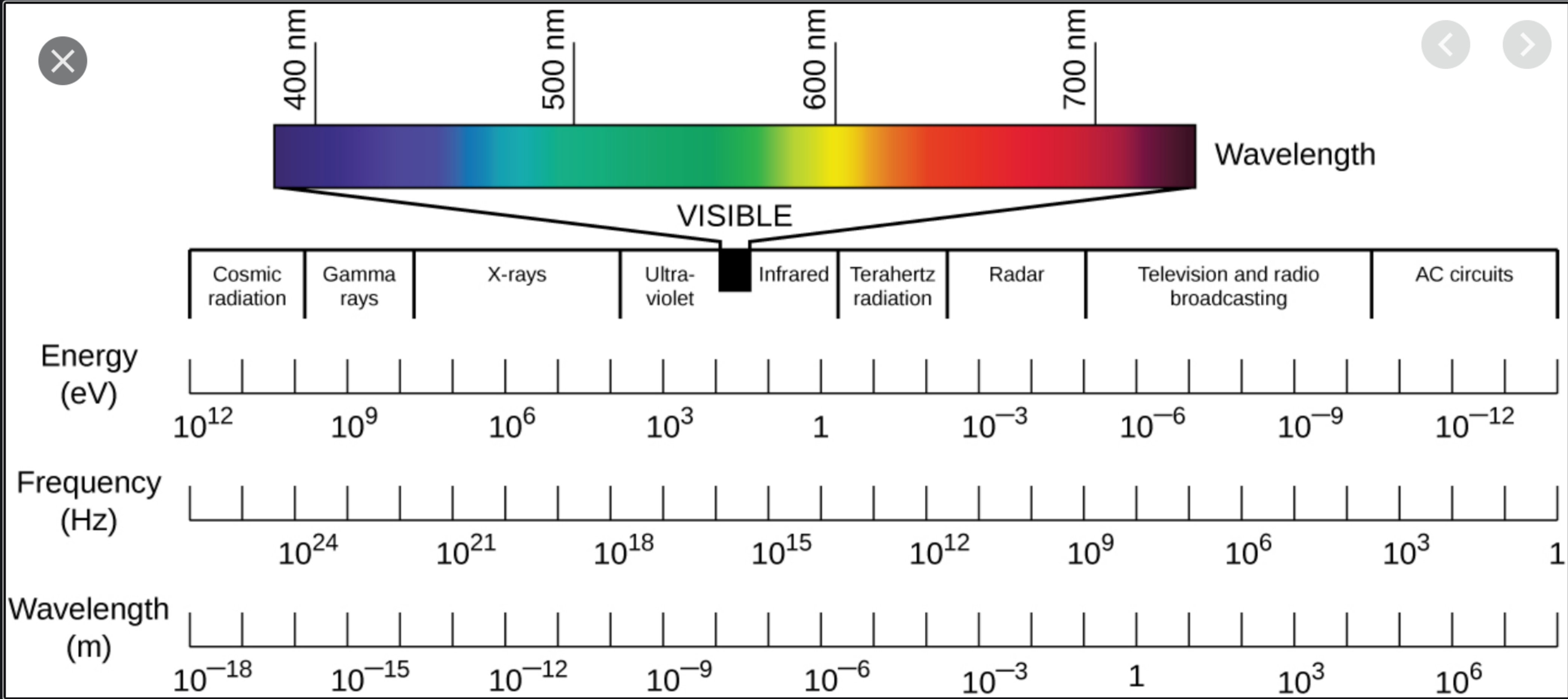


Image by Jim Lee, ClimateViewer.com
WMH
WeatherModificationHistory.com
THERMOSPHERE
MESOSPHERE
STRATOSPHERE
TROPOSPHERE
IONOSPHERE
93 Miles
150 Kilometers
53 Miles
85 Kilometers
31 Miles
50 Kilometers
39k Feet
12 Kilometers
ARTIFICIAL MIRROR/LENS
ARTIFICIAL AURORA
AIR GLOW
NOCTILUCENT CLOUD
NACREOUS CLOUD
OZONE LAYER
1. Ionospheric Heater
MICROWAVE, NOCTILUCENT, PLASMA CLOUDS, ELF/VLF
2. Sounding-Rockets
CHEMICAL RELEASE, NACREOUS, NOCTILUCENT CLOUDS
3. Satellite CHEMICAL RELEASE, DEW, IONOSPHERIC HEATER, ELF/VLF GENERATION
4. Lasers
RAIN CCN, IONIZATION, CHANNEL LIGHTNING
5. Cloud Seeding
CHEMICAL RELEASE, RAINFALL, HAIL, CLOUD CLEARING
6. Cloud Ionizers
ELECTRIC RAINMAKING WITH IONS
7. Stratospheric Aerosol Injection
GEOENGINEERING SOLAR RADIATION MANAGEMENT (SRM) CHEMICALS CREATE SUNSHADE: SULFUR, ALUMINUM, TITANIUM, DIAMOND DUST, CALCIUM, BISMUTH TRI-IODIDE.
8. Ship Tracks
MARINE CLOUD BRIGHTENING (MCB), STRATOCUMULUS
9. Contrail-Induced Cirrus
CIRRUS CLOUD CREATION, TRAPS HEAT, MELTS POLES
10. Water Vapor Pollution
CLOUD CREATION VIA: SMOKESTACKS, COOLING TOWERS, WSAC, TMS-65, J2X ROCKET, JET ENGINES
Red Numbers: Considered Inadvertent, Accidental, or Pollution...
unless intentional. Objects not to scale. Not included: steering atmospheric rivers
WEATHER MODIFICATION TECHNOLOGIES 2018

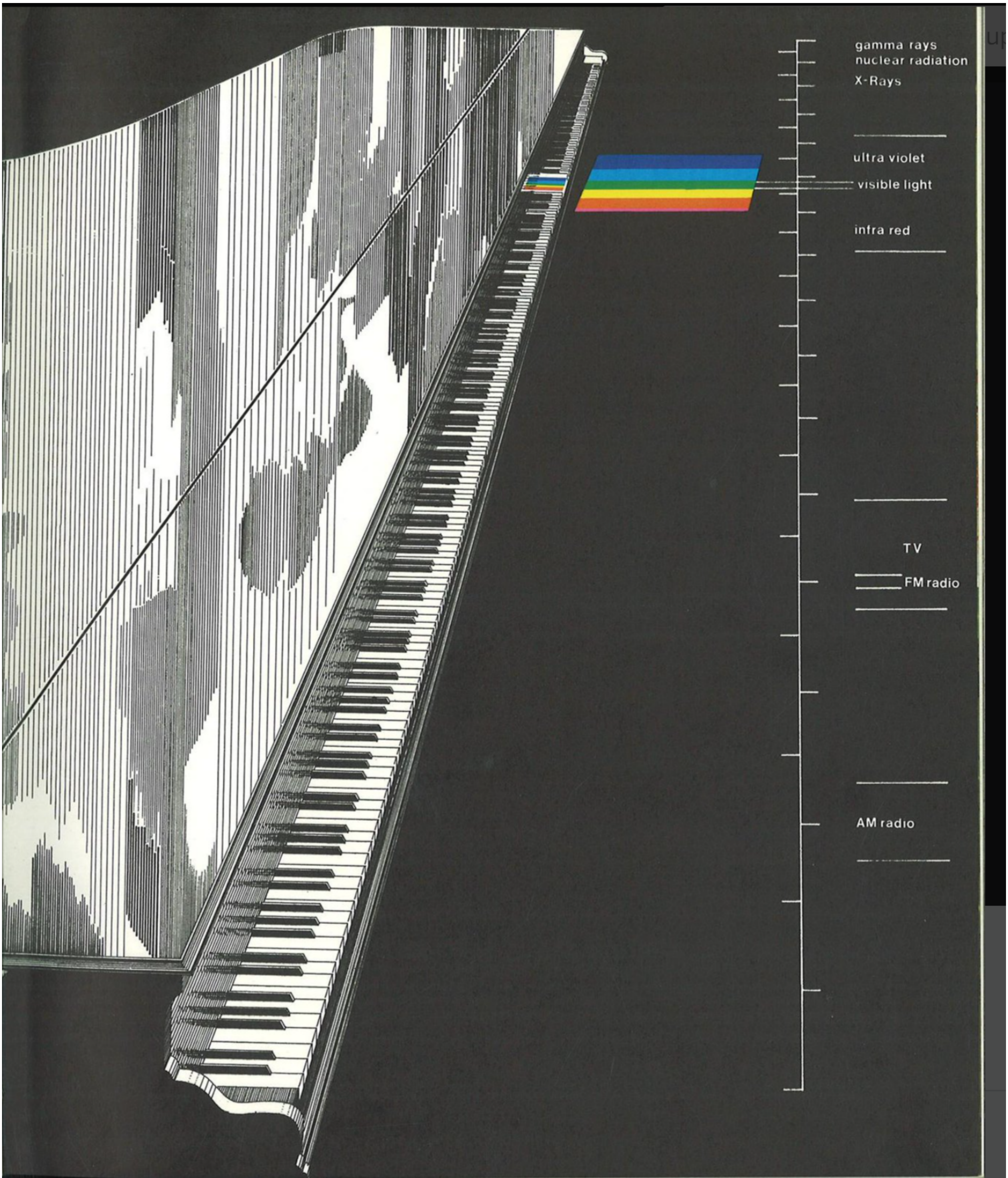

ELECTROMAGNETIC RADIATION SPECTRUM
Size reference
football field
man's height
baseball
paperclip thickness
paper thickness
blood cells
bacteria
viruses
water molecule
atom
atomic nucleus
wavelength λ (m)
1 ft
1 cm
1 mm
1 mil
1 μ
1 nm
1 A
1 pm
10³ 10² 10² 1 10⁻¹ 10⁻² 10⁻³ 10⁻⁴ 10⁻⁵ 10⁻⁶ 10⁻⁷ 10⁻⁸ 10⁻⁹ 10⁻¹⁰ 10⁻¹¹ 10⁻¹²
Biological Effect
Non-ionizing Radiation
Induced Currents
Heating
Ex & Phcm
Ionizing Radiation
Ionization – DNA Damage
electron volt (eV)
10⁻⁹ 10⁻⁸ 10⁻⁷ 10⁻⁶ 10⁻⁵ 10⁻⁴ 10⁻³ 10⁻² 10⁻¹ 1 10 10² 10³ 10⁴ 10⁵ 10⁶
frequency (Hz)
1 MHz
1 GHz
1 THz
1 PHz
1 EHz
1 ZHz
10⁵ 10⁶ 10⁷ 10⁸ 10⁹ 10¹⁰ 10¹¹ 10¹² 10¹³ 10¹⁴ 10¹⁵ 10¹⁶ 10¹⁷ 10¹⁸ 10¹⁹ 10²⁰ 10²¹
Bands
Radio Spectrum
Broadcast and Wireless
Microwave
Terahertz
Infrared
Ultraviolet
X-rays & Gamma Rays
Soft X-ray
Hard X-ray
electronics
optics
Visible wavelengths (nm)
700 625 575 540 470 440
Sources and Uses of Frequency Bands
AM radio
600kHz-1.6MHz
FM radio
88-108 MHz
Mobile Phones
900MHz-2.4GHz
RADAR
1-100 GHz
MRI (1.5T)
63.86 MHz
TV Broadcast
54-700 MHz
Wireless Data
~2.4 GHz
SmartMeter
0.9-2.45 GHz
Microwave Oven
2.4 GHz
Screening
0.2-4.0 THz
"mm wave"
"sub-mm"
Fiber telecom
0.7-1.4 μm
Visible Light
700-400nm
Dental Curing
200-350nm
Remotes
850 nm
Night Vision
10-0.7 μm
Suntan
400-290nm
Medical X-ray
80 kev
Baggage Screen
160 keV
Bone Scan
140 keV
Cosmic Gamma Rays
>10Bev
PET
511 kev


SOUND
RADIO
LIGHT
HARMFUL RADIATION
THE RADIO SPECTRUM
ELF
VLF
LF
MF
HF
VHF
UHF
SHF
EHF
IR
VISIBLE
UV
SOFT X-RAY
SOFT GAMMA-RAY
HARD GAMMA-RAY
X-RAY
GAMMA-RAY
COSMIC-RAY
ISM = Industrial, Scientific and Medical
UWB = Ultra Wide Band
VHF = VERY HIGH FREQUENCY
UHF = ULTRA HIGH FREQUENCY
SHF = SUPER HIGH FREQUENCY
EHF = EXTREMELY HIGH FREQUENCY
4G CELLULAR
56-100 GHz
2.4 GHz
ISM band
UWB
ISM bands
315-915 MHz
3.1-10.6 GHz
30 km
0.3 km
3 m
3 cm
VLF
LF
MF
HF
VHF
UHF
SHF
EHF
AM Broadcast
FM Broadcast
Radar Bands
Sonics
Ultra-sonics
Microwaves
10 kHz
1 MHz
100 MHz
10 GHz
Electromagnetic Spectrum

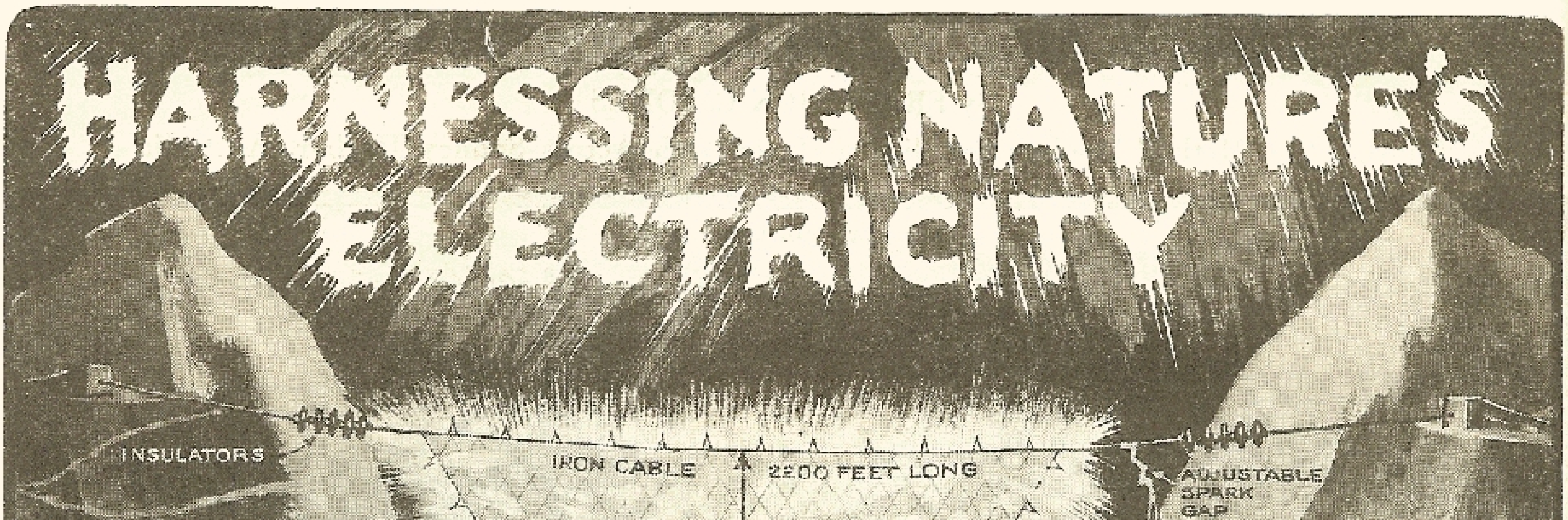


400 nm
500 nm
600 nm
700 nm
Wavelength
VISIBLE
Cosmic radiation
Gamma rays
X-rays
Ultra-violet
Infrared
Terahertz radiation
Radar
Television and radio broadcasting
AC circuits
Energy (eV)
10^12 10^9 10^6 10^3 1 10^−3 10^−6 10^−9 10^−12
Frequency (Hz)
10^24 10^21 10^18 10^15 10^12 10^9 10^6 10^3 1
Wavelength (m)
10^−18 10^−15 10^−12 10^−9 10^−6 10^−3 1 10^3 10^6

Displacement current	$I_{\text{d}} = \varepsilon_0 \frac{d\Phi_{\text{E}}}{dt}$
Gauss's law	$\oint \vec{\mathbf{E}} \cdot d\vec{\mathbf{A}} = \frac{Q_{\text{in}}}{\varepsilon_0}$
Gauss's law for magnetism	$\oint \vec{\mathbf{B}} \cdot d\vec{\mathbf{A}} = 0$
Faraday's law	$\oint \vec{\mathbf{E}} \cdot d\vec{\mathbf{s}} = -\frac{d\Phi_{\text{m}}}{dt}$
Ampère-Maxwell law	$\oint \vec{\mathbf{B}} \cdot d\vec{\mathbf{s}} = \mu_0 I + \varepsilon_0 \mu_0 \frac{d\Phi_{\text{E}}}{dt}$
Wave equation for plane EM wave	$\frac{\partial^2 E_y}{\partial x^2} = \varepsilon_0 \mu_0 \frac{\partial^2 E_y}{\partial t^2}$
Speed of EM waves	$c = \frac{1}{\sqrt{\varepsilon_0 \mu_0}}$
Ratio of *E* field to *B* field in electromagnetic wave	$c = \frac{E}{B}$
Energy flux (Poynting) vector	$\vec{\mathbf{S}} = \frac{1}{\mu_0} \vec{\mathbf{E}} \times \vec{\mathbf{B}}$
Average intensity of an electromagnetic wave	$I = S_{\text{avg}} = \frac{c\varepsilon_0 E_0^2}{2} = \frac{cB_0^2}{2\mu_0} = \frac{E_0 B_0}{2\mu_0}$
Radiation pressure	$p = \begin{cases} I/c & \text{Perfect absorber} \\ 2I/c & \text{Perfect reflector} \end{cases}$



s of electro-magnetic radiation


HARNESSING NATURE'S ELECTRICITY
INSULATORS
IRON CABLE
2200 FEET LONG
ADJUSTABLE SPARK GAP
260 FT.
INSULATED WIRES
CORONA OF BLUISH GREEN LIGHT
2,600,000 VOLTS - 1927
10,000,000 VOLTS EXPECTED-1928
TEST HUT 660 FEET FROM SPARK GAP

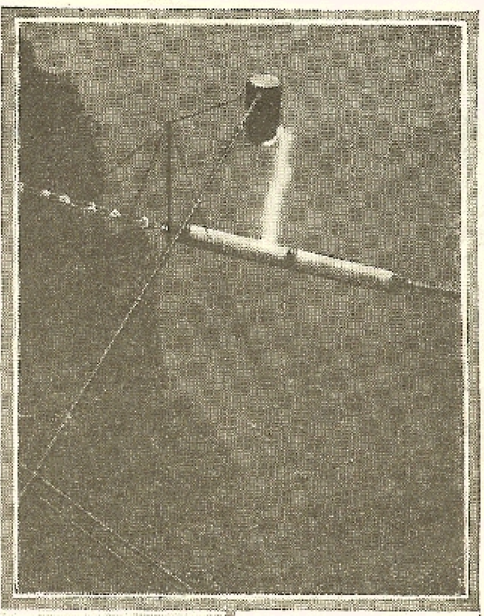
Remarkable European Experiments with Atmospheric Electrical Discharges with Potentials as High as 3,000,000 Volts

By HENRY TOWNSEND

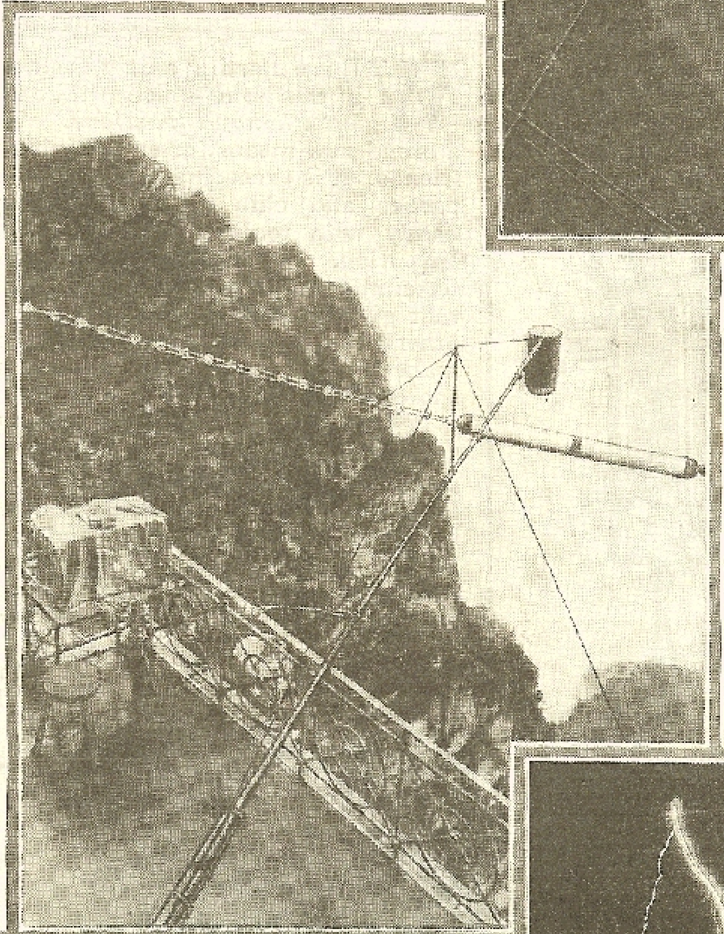
elevation of 350 ft., and these students of natural electrical phenomena have found a very desirable location in the Alps, where they can suspend between one mountain and an adjacent one, a strong iron cable having a length of about 2,000 ft. This cable is about 250 feet above the intervening valley, and from it these daring engineers have suspended a coarsely woven wire net, which serves as an electrical capacity to gather the electricity from the atmosphere. As shown in the pictures, the wire net is supplied with numerous sharp points to aid in collecting the current from the air.

As the accompanying photographs of the actual apparatus and wire cable used last year clearly show, an adjustable spark gap of considerable length is provided. By adjusting this spark gap to various lengths, it is possible to judge the voltage of the discharge which leaps the gap at any moment. Mr. F. W. Peek, Jr., the well-known American worker in the realm of high voltage measurements, together with other engineers, have provided tabulated data and curves for various lengths of both needle and sphere type spark gaps. As one of the accompanying diagrams shows, it is a simple matter to calculate the voltage when a certain length of gap is used. The engineer first checks the length of the gap on the chart; he then follows a line horizontally from the gap length, to where it intersects with the angular line on the chart; and from the point of intersection he looks in a visual line downward to a place where the voltage is given. For needle spark gap measurements, the characteristic curve on the chart is practically a straight line, while for sphere gaps the characteristic curve on the voltage versus gap length, is a curved line. Those interested in high voltage measurements by means of the spark gap method can find the voltage-gap tables and charts in the *Standardization Rules* of the American Institute of Electrical Engineers. According to Mr. Peek's researches, the voltage per foot of atmospheric electrical discharges is about 100,000, while in laboratory measurements with A.C., transformer high potential discharges, the average voltage per foot of spark was found to be about 150,000 volts. The voltage of a lightning flash may

(*Continued on page* 156)

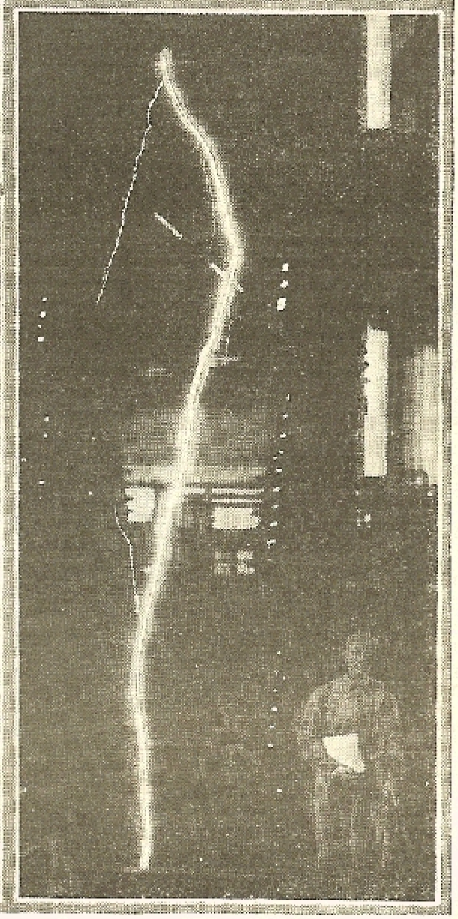


Actual photo above shows 13 ft., heavy spark obtained from the collecting net in the Alps by the German scientists. The voltage is about 2,000,000. The spark occurred once per second for 30 minutes.

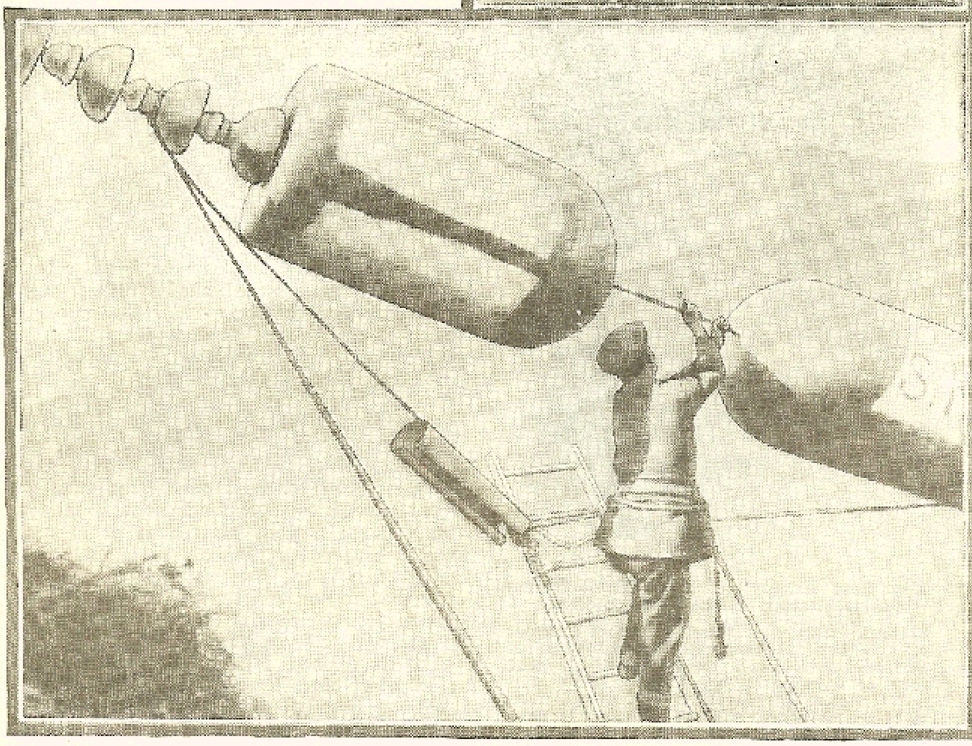


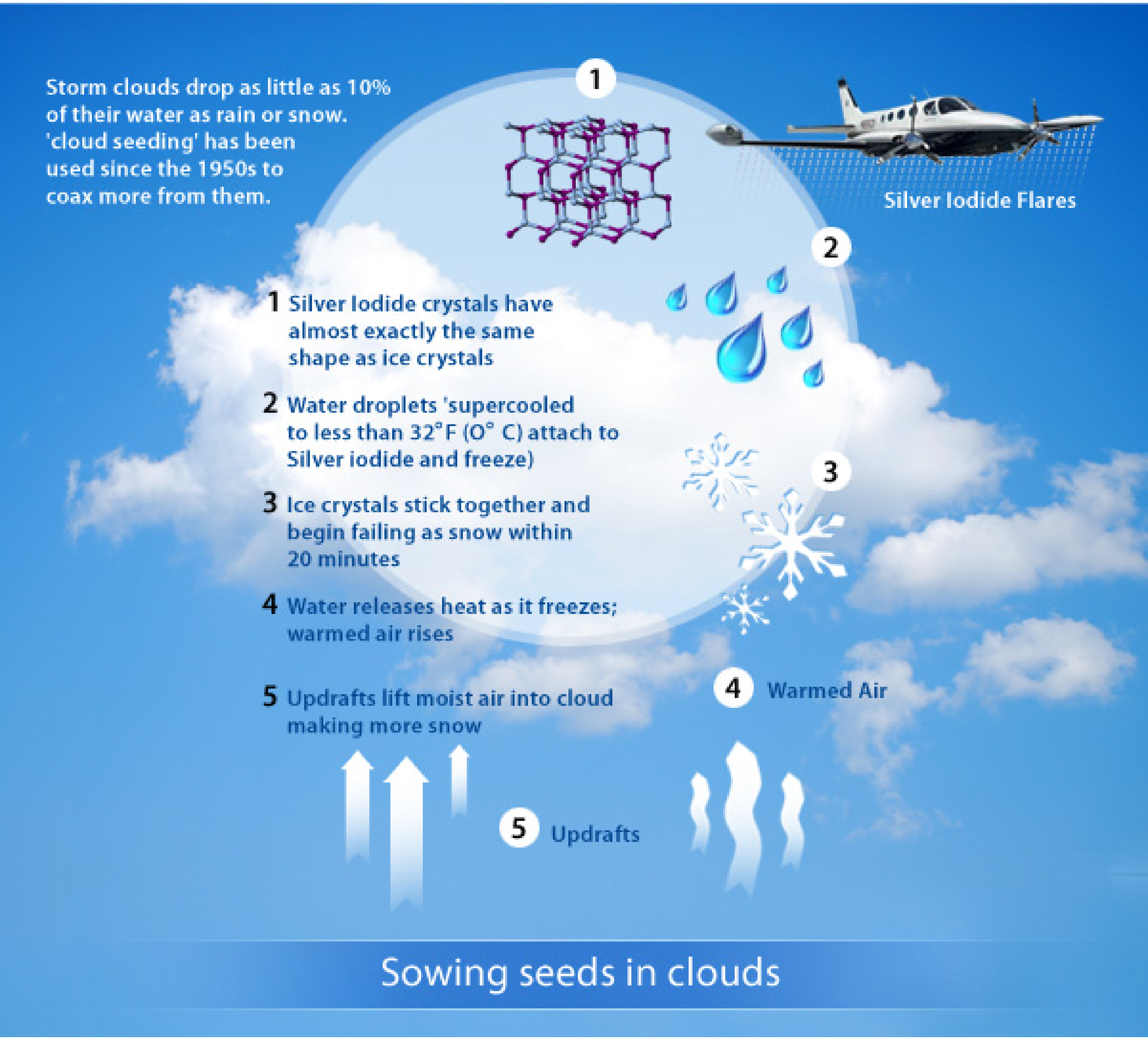
Photo, left, shows the adjustable spark gap used in the Alps. Notice the heavy electrode on the end of the adjustable arm to which the spark jumps.

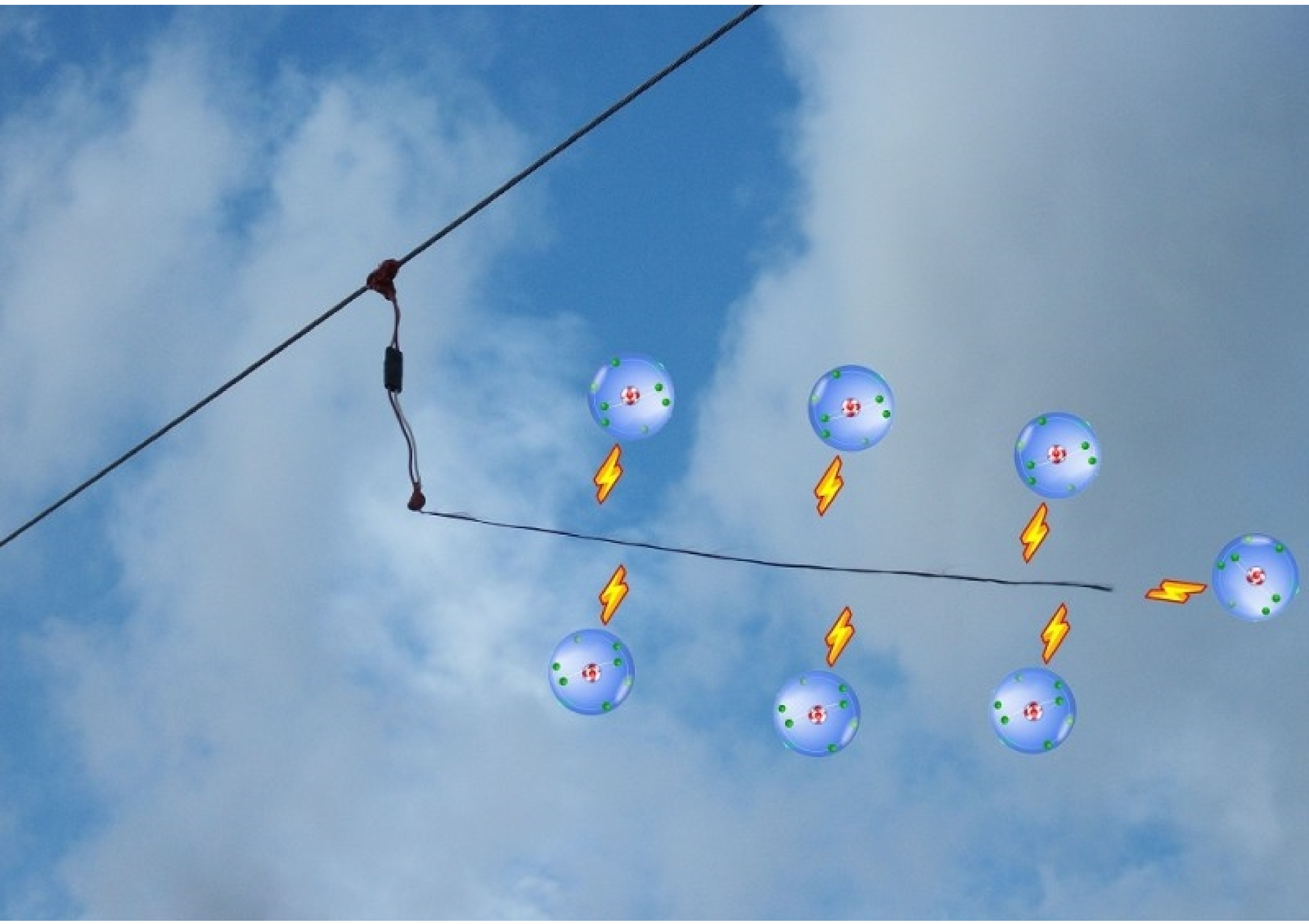
Below we see 3,000,000-volt artificial lightning stroke produced in G. E. Laboratory at Pittsfield, Mass. Note man.



Actual photograph of the experimental "kite" used by the German experimenters in the Alps Mountains, for the purpose of accumulating high potential electrical discharges from the atmosphere. Note the size of the insulators.




Storm clouds drop as little as 10% of their water as rain or snow. 'cloud seeding' has been used since the 1950s to coax more from them.
1
Silver Iodide Flares
2
1 Silver Iodide crystals have almost exactly the same shape as ice crystals
2 Water droplets 'supercooled to less than 32°F (O° C) attach to Silver iodide and freeze)
3
3 Ice crystals stick together and begin failing as snow within 20 minutes
4 Water releases heat as it freezes; warmed air rises
4 Warmed Air
5 Updrafts lift moist air into cloud making more snow
5 Updrafts
Sowing seeds in clouds



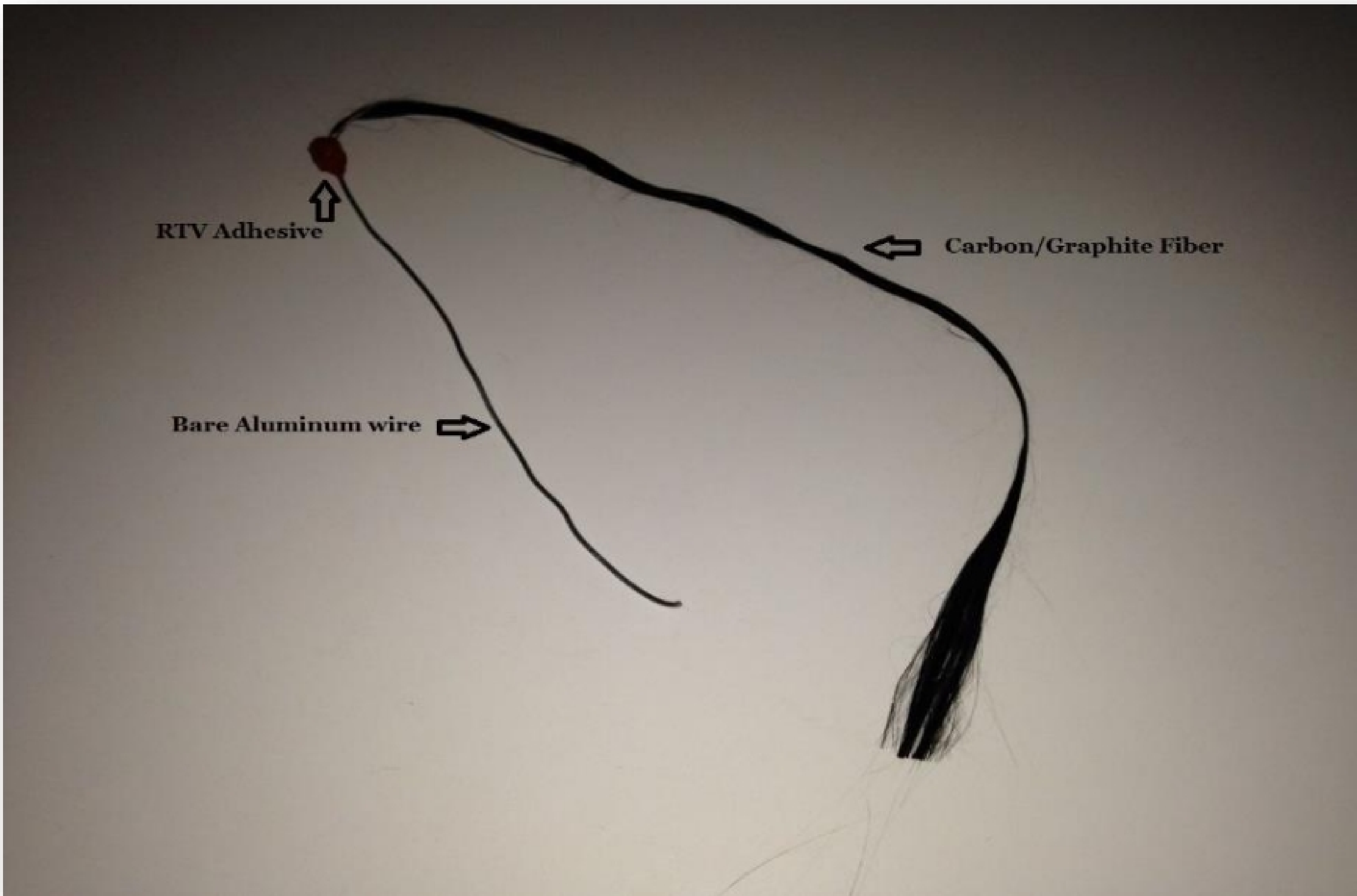
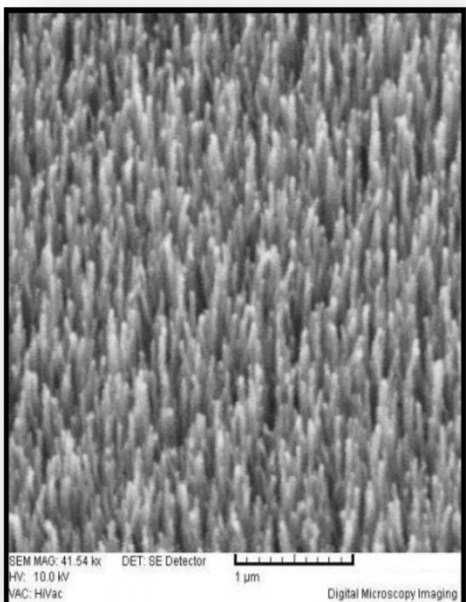
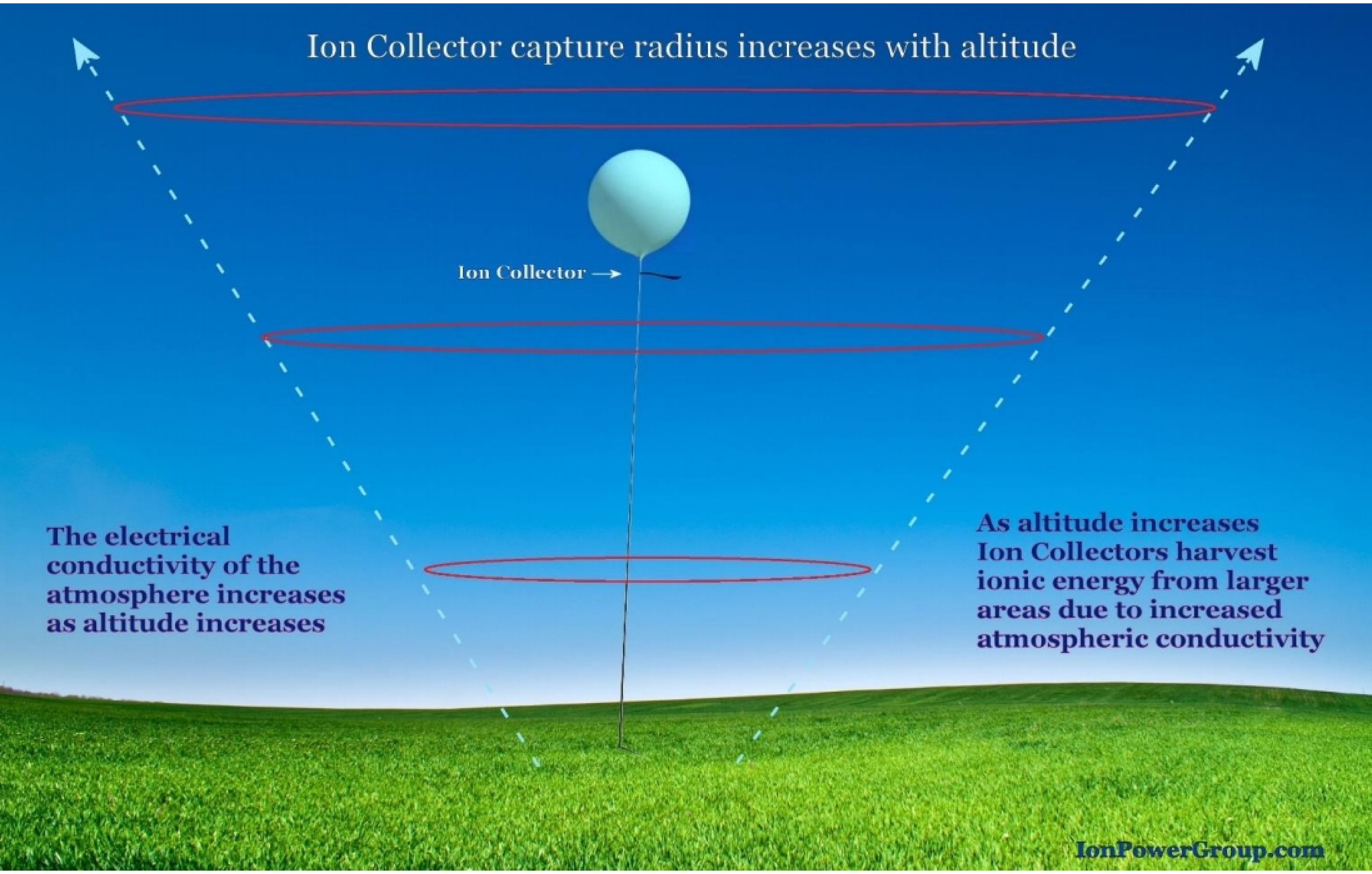
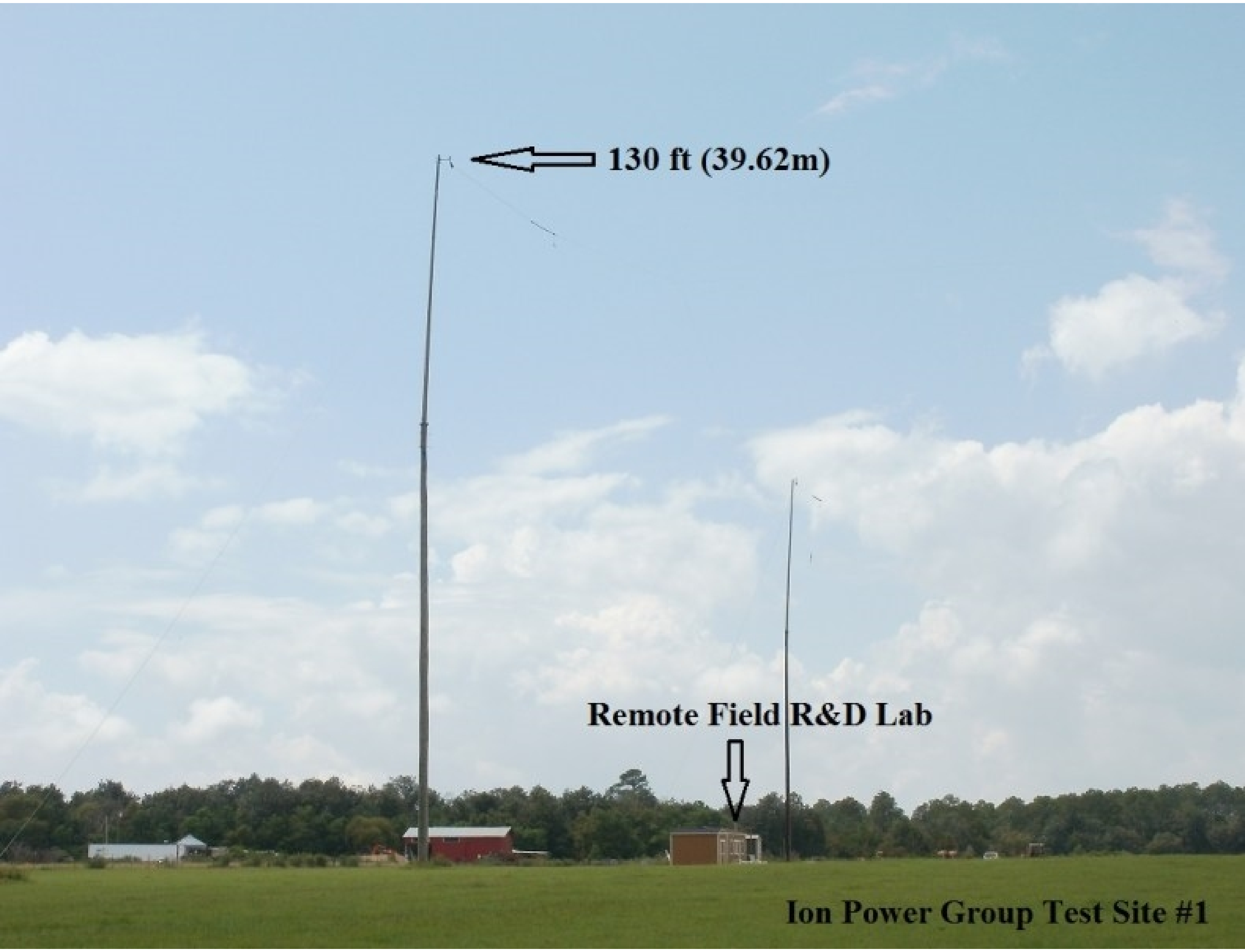


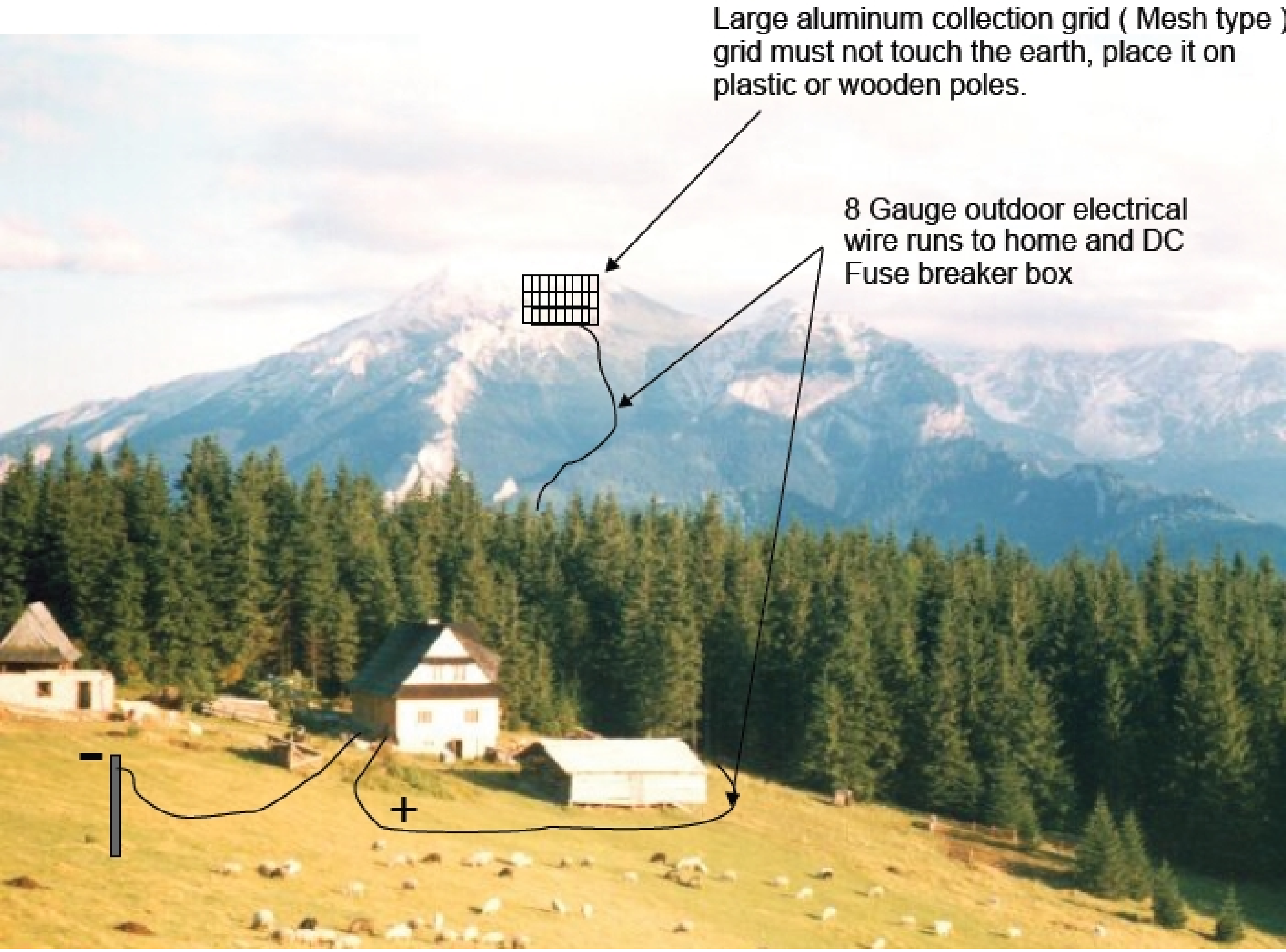
Image of a patented Ion Collector made of carbon/graphite weighing approximately 1 ounce.

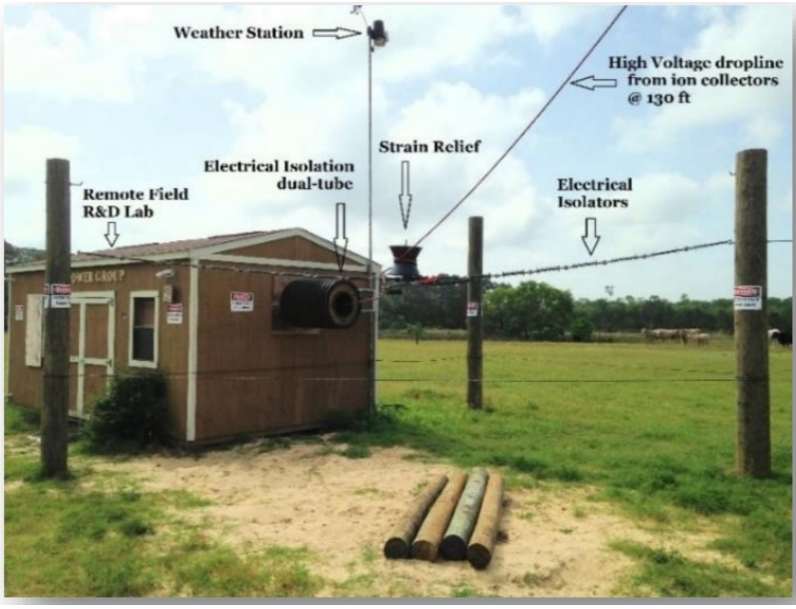


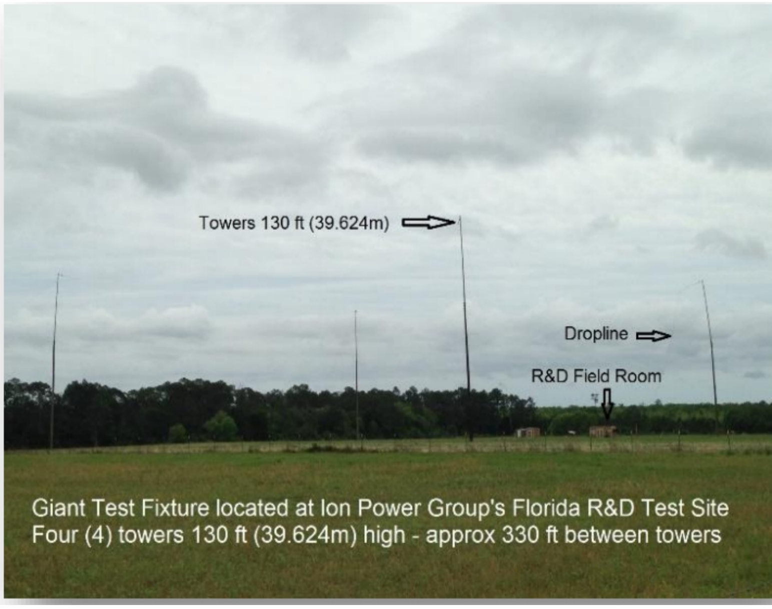
Ion Power Group's new method of coupling to atmospheric electricity is vastly different from all previous techniques by virtue of our patented breakthrough revealing that carbon nanomaterials such as **Graphite (and Graphene) microscopic shown at left, macroscopic shown at right are significantly more effective at coupling to airborne charge carriers (ions) than metal.** The use of carbon based nanomaterials distinguishes Ion Power Group from all other researchers.

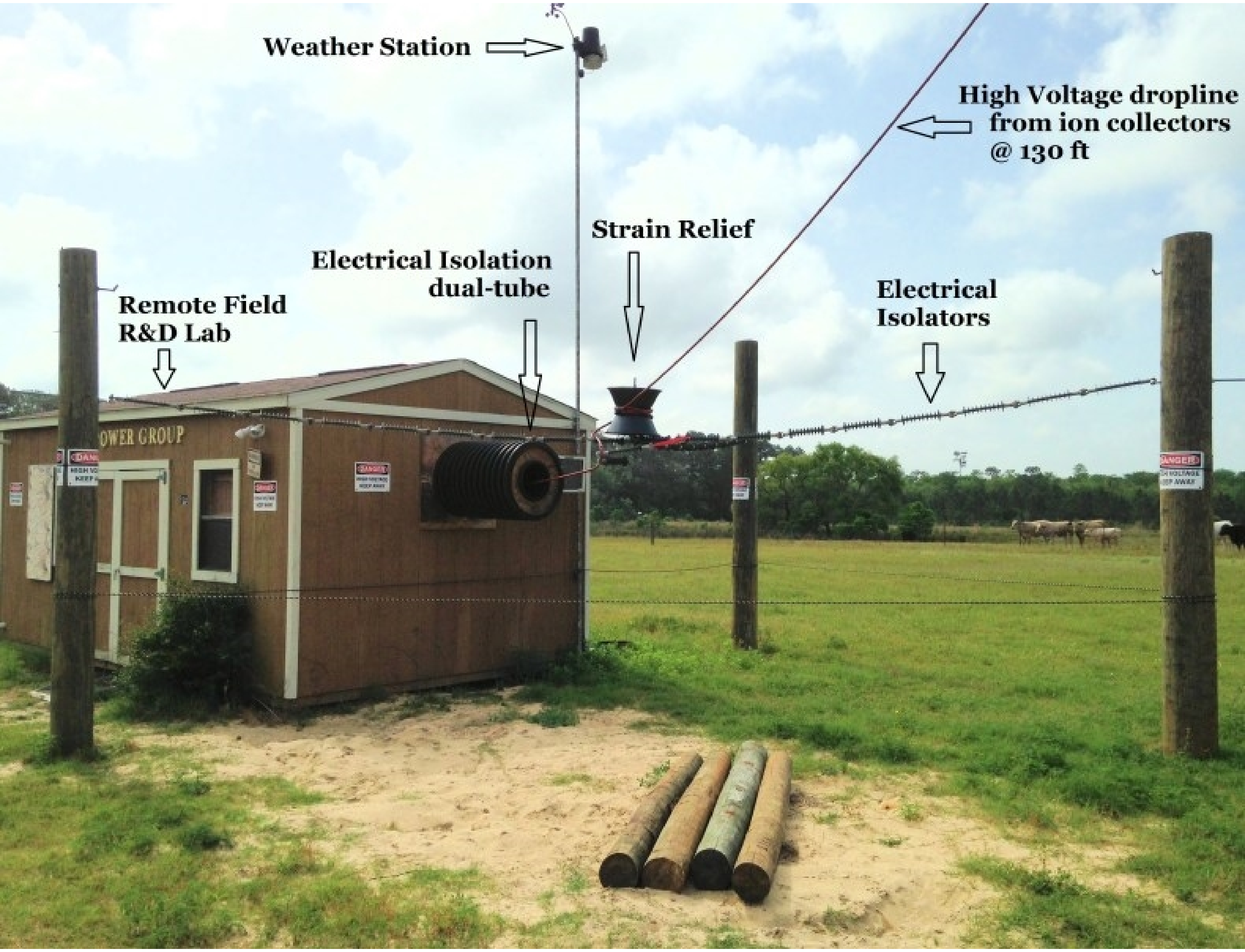

Ion Collector capture radius increases with altitude
Ion Collector
The electrical conductivity of the atmosphere increases as altitude increases
As altitude increases Ion Collectors harvest ionic energy from larger areas due to increased atmospheric conductivity
IonPowerGroup.com


130 ft (39.62m)
Remote Field R&D Lab
Ion Power Group Test Site #1

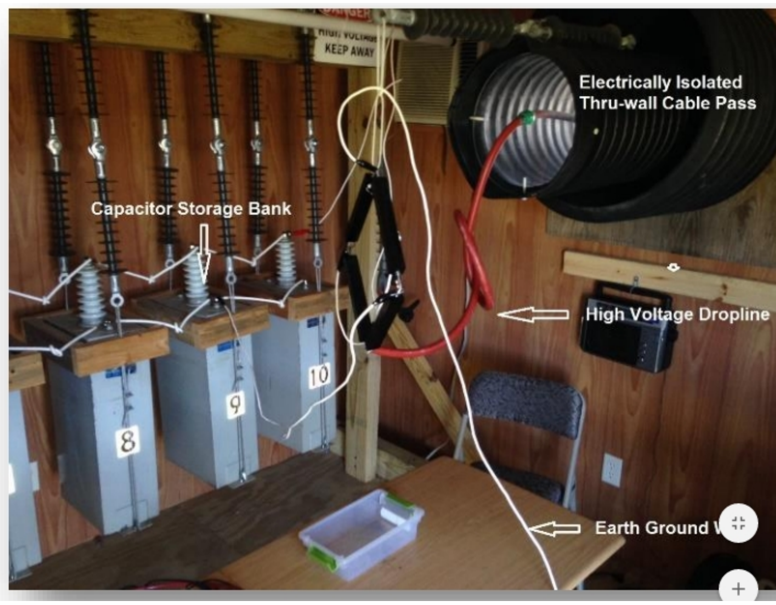

Large aluminum collection grid (Mesh type)
grid must not touch the earth, place it on
plastic or wooden poles.
8 Gauge outdoor electrical
wire runs to home and DC
Fuse breaker box
-
+


Weather Station
High Voltage dropline from ion collectors @ 130 ft
Strain Relief
Electrical Isolation dual-tube
Remote Field R&D Lab
Electrical Isolators

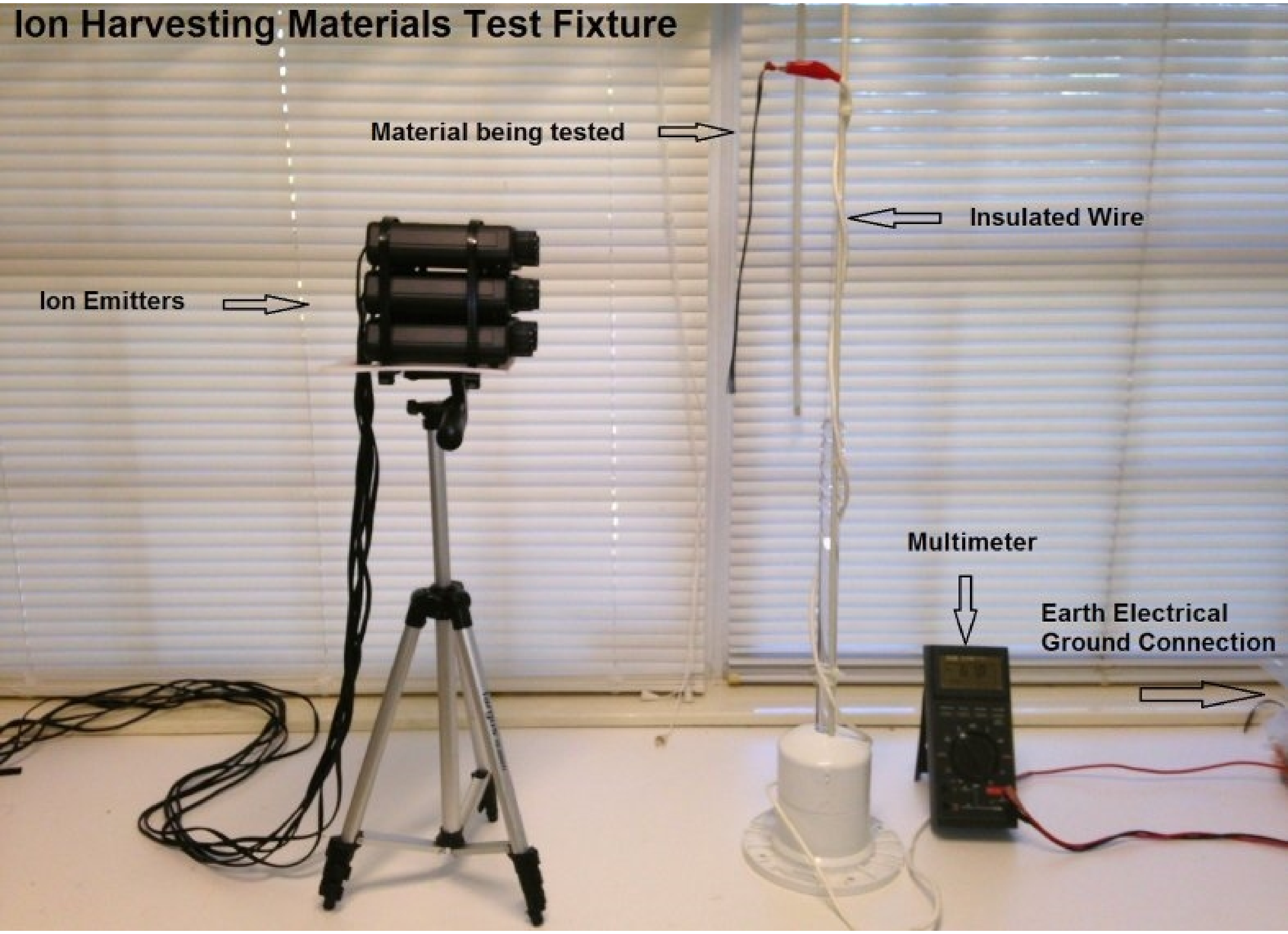

Towers 130 ft (39.624m)
Dropline
R&D Field Room
Giant Test Fixture located at Ion Power Group's Florida R&D Test Site
Four (4) towers 130 ft (39.624m) high - approx 330 ft between towers

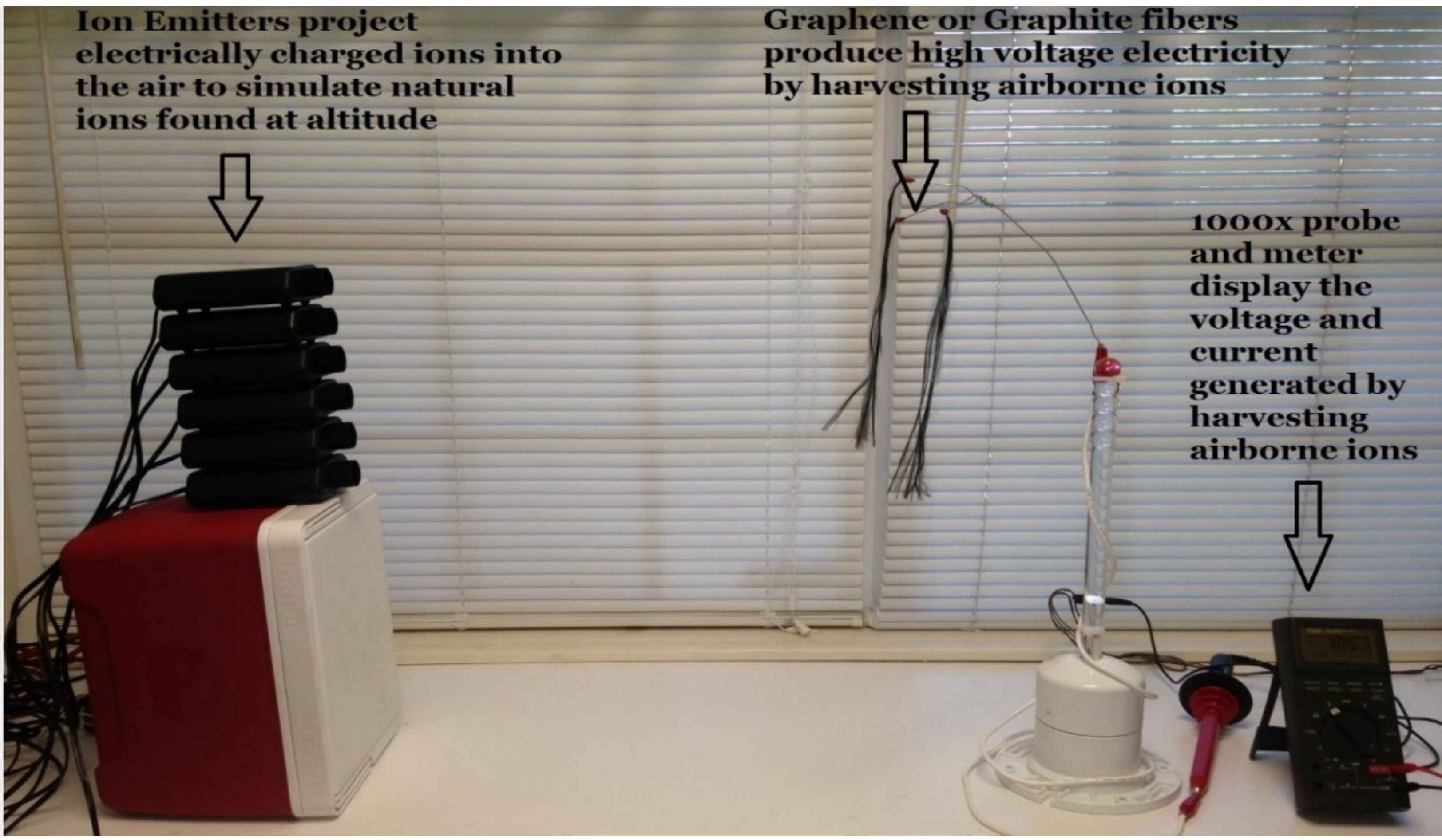

Weather Station
High Voltage dropline
from ion collectors
@ 130 ft
Strain Relief
Electrical Isolation
dual-tube
Electrical
Isolators
Remote Field
R&D Lab
DANGER
HIGH VOLTAGE
KEEP AWAY


DANGER
HIGH VOLTAGE
KEEP AWAY
Ion Harvesting Electrical Storage
(10) General Electric capacitors in parallel
rated at 41.kV totaling 75.uf capacity


KEEP AWAY
Electrically Isolated
Thru-wall Cable Pass
Capacitor Storage Bank
High Voltage Dropline
Earth Ground W


DANGER
1
2
3
4
5
6
7
8
9
10


Ion Harvesting Materials Test Fixture
Material being tested
Insulated Wire
Ion Emitters
Multimeter
Earth Electrical
Ground Connection


Ion Emitters project electrically charged ions into the air to simulate natural ions found at altitude
Graphene or Graphite fibers produce high voltage electricity by harvesting airborne ions
1000x probe and meter display the voltage and current generated by harvesting airborne ions

Gilded Temples Are Secretly Atmospheric Electricity Masts


1:45 / 9:25

must depend on the area occupied by the building; for instance, a church of ordinary design and size would require four "down" rods, that is, one from the spire, one on both sides of the nave, and one at the extreme end. It is advantageous to run two conductors from the top of the spire or tower, one on each side.

FIG. 7.—3 FT. ELEVATION ROD, WITH POINTS BRAZED TOGETHER, USED WHERE EXPOSED TO MUCH HEAT.

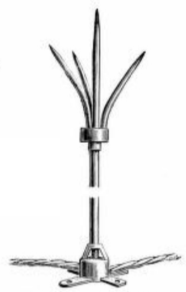


FIG. 8.—ELEVATION ROD FOR HORIZONTAL POSITION OR FLAT ROOF.

FIG. 9.—PLAIN POINT ELEVATION ROD.

Horizontal Conductors (see L.R.C. Suggestion 2, page 15). To complete the system, all the down conductors should be intersected by at least one horizontal rod, with the object of having a path for any side flash or portion of the main stroke which may not be carried away harmlessly by the main rod. Where there is a considerable length of roof, aigrettes (Fig. 11) should be fixed as shown by Fig. 10, which is taken from a model of the roof of Westminster Abbey. The down conductros on their way to earth should be connected to any metal work in the neighbourhood, also to rain-water gutters,

pipes, etc.; the number of these subsidiary down conductors depends on the length of the roof.

At a conference held on behalf of the L.R.C., in April, 1904, Sir Oliver Lodge suggested that these down conductors should, in the case of a church, be run between each of the windows.

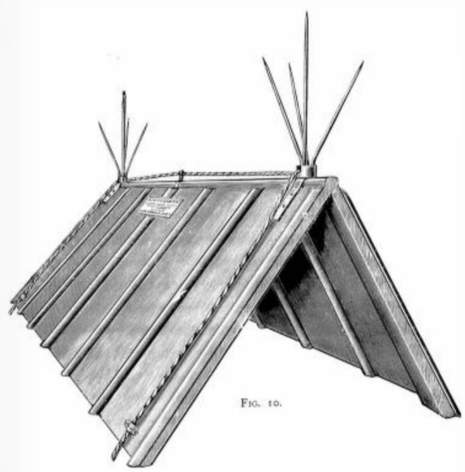


FIG. 10.

Method of running Conductors. These, whether vertical or horizontal, should be kept away from the structure (L.R.C. Rule 10) so as to avoid all sharp bends, and facilitate straining, and secondly, to prevent the corrosion which may take place where the metal is in contact with the brick or stone work. It is found advisable

Modern lightning conductors: an illustrated

surface of the joint need not necessarily exceed that of the cross section of the conductors. The joint should be put together previously by screws or rivets, and the soldered joint, especially if used in underground work, should be carefully protected from local electrical action by tarred rope. Stranded iron conductors can be connected (as previously described) by use of a box joint; the box, Fig. 28, must be of the same metal as the conductors.

Vanes.—Particular attention must be paid to the necessity of making a permanent joint to the spindle. A clamp is prepared of the same material as the spindle, and is furnished with two bolts to tighten; if iron is used it is well to line the clamp with a piece of sheet lead. The conductor is sweated into a socket which is fitted with an eye, through which one of the tightening bolts passes. In the

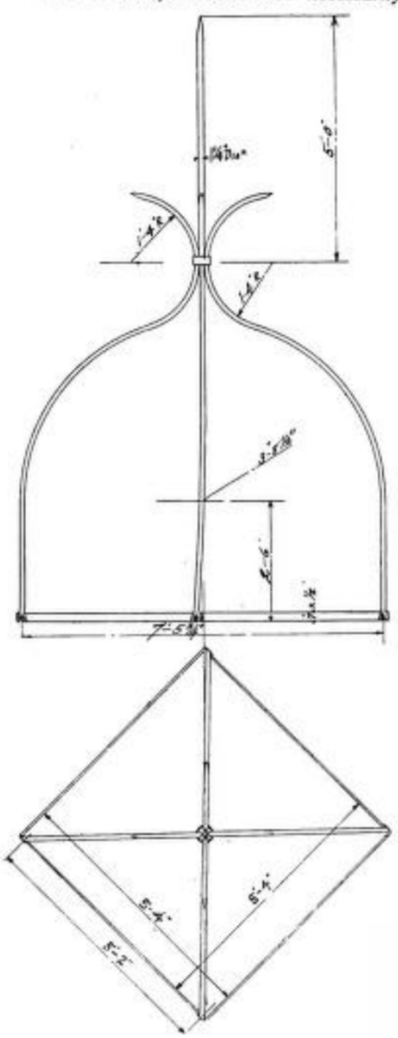


FIG. 27.—TERMINALS IN FORM OF AN ARCH FOR CHIMNEY STACK.

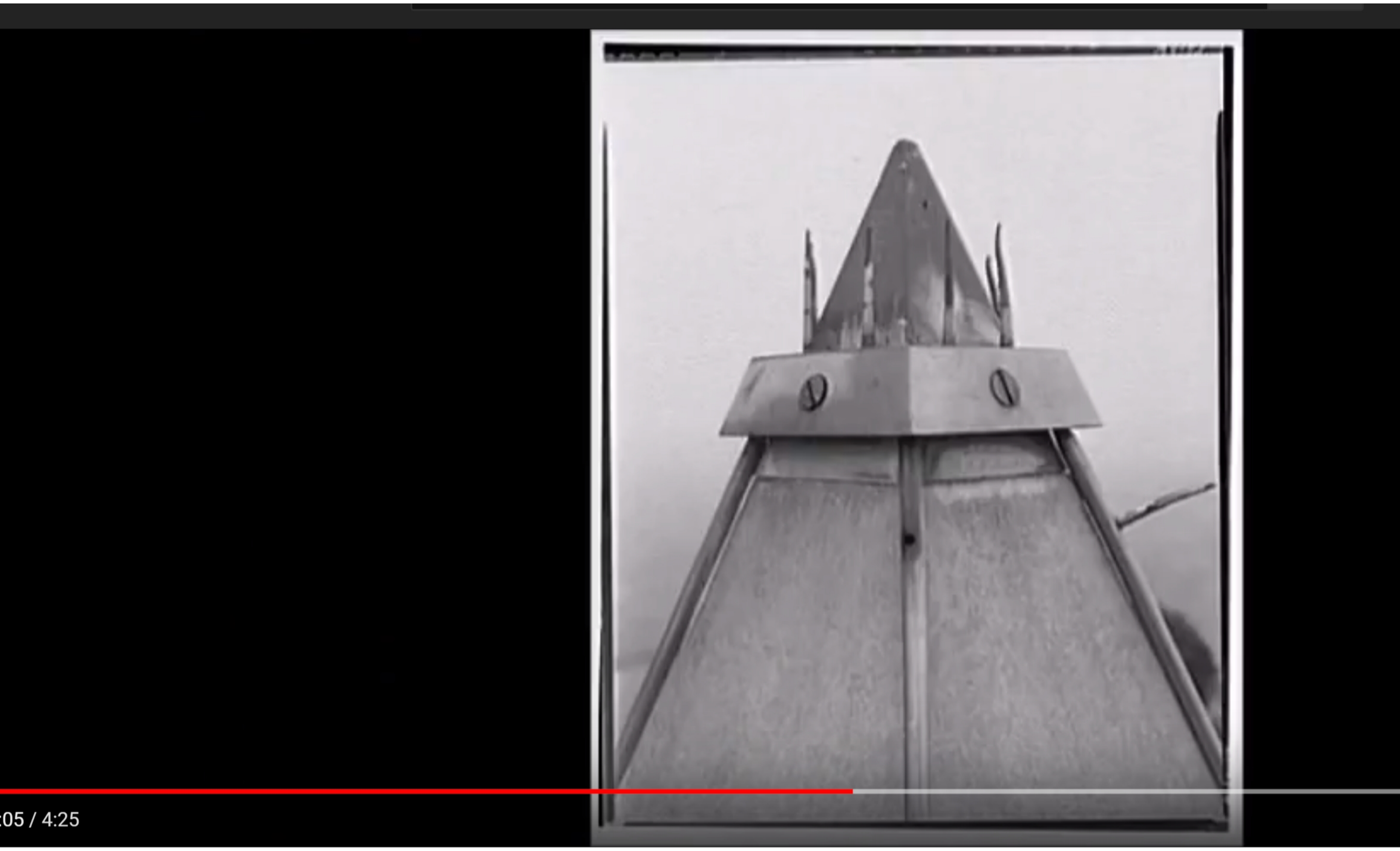
FIG. 28.

case of the vanes of churches and those fixed in inaccessible positions, two separate clamps should be used.

Internal Masses of Metal.—Roof trusses fitted with longitudinal iron tie rods will, as a rule, be found to be electrically connected, but should this not be the case each truss must be joined to the conductors. All large and long masses of metal, such as beams, girders, roof trusses, tie rods, hot water systems, traveller ways, hoisting crabs, engines, boilers, large machines, and ventilators fixed in the interiors of buildings, should be connected to all conductors that pass near them, and as far as possible with one another. The discontinuous parts of traveller rails should be connected by straps, or in some cases tramway bonds might be used. If electric light wires are run in tubes, such as the "SIMPLEX," this should be earthed. Metallic contact between lead or zinc sheeting and flashings should be carefully studied, and for special work strips of sufficient size should be either burnt on to lead or soldered in such a way that the joint will stand rough usage, and allow for expansion or contraction.

Earth Connection.—"*It is essential that the lower extremity of the conductor be buried in permanently damp soil; hence proximity to rain-water pipes, and to drains, is desirable. It is a very good plan to make the conductor bifurcate close below the surface of the ground, and adopt two of the following methods for securing the escape of the lightning into the earth. A strip of copper tape may be led from the bottom of the rod to the nearest gas or water* main—*not merely to a lead pipe—and be soldered to it; or a tape may be soldered to a sheet of copper* 3 *feet by* 3 *feet and* $\frac{1}{16}$ *inch thick, buried in permanently wet earth, and surrounded by cinders or coke; or many yards of the tape may be laid in a trench filled with coke, taking care that the surfaces of copper are, as in the previous cases, not less than* 18 *square feet. Where iron is used for the rod, a galvanised iron plate of similar dimensions should be employed.*

"The use of cinders or coke appears to be questionable owing to the chemical or electrolytic effect on copper or iron. Charcoal or pulverised carbon (such as ends of arc-light rods) is better. **A tubular earth** consisting of a perforated steel spike driven tightly into moist ground and lengthened up to the surface, the conductor reaching to the bottom and being packed with granulated charcoal, gives as much **effective area** as a plate of larger surface, and can easily be kept moist by connecting it to the nearest rain-water pipe. The resistance of a tubular earth on this plan should be very low and practically constant."—*Lightning Research Committee, 1905.*



Washington Monument is an Atmospheric Electricity Mast

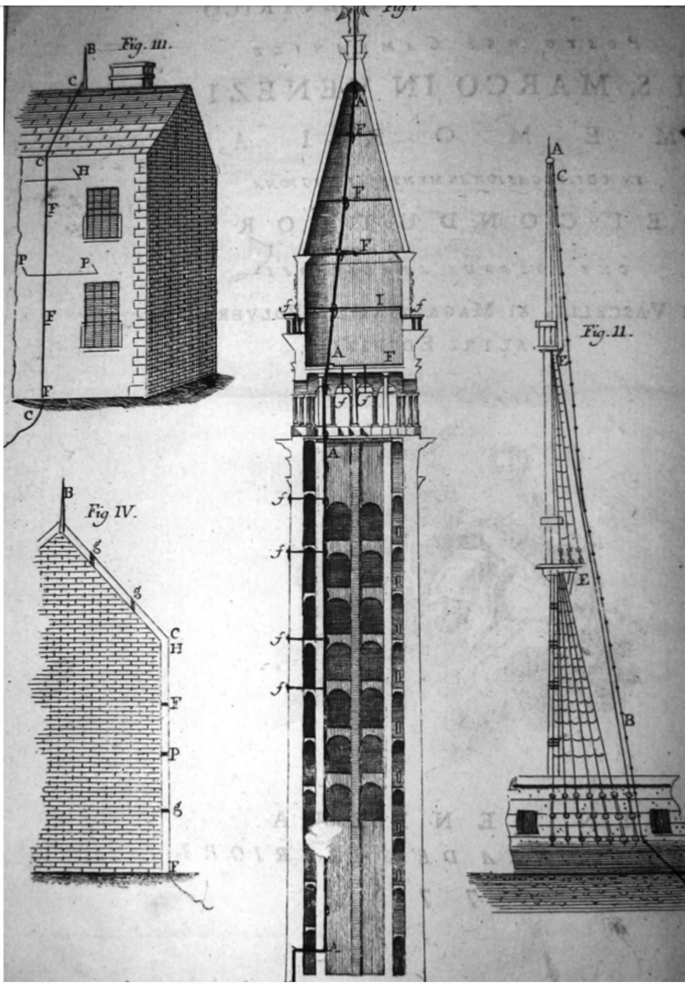
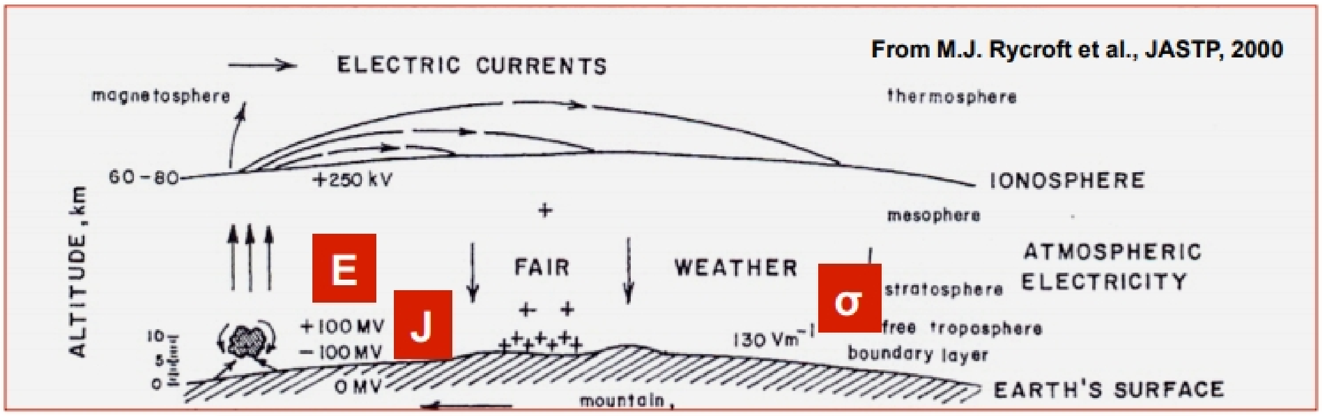
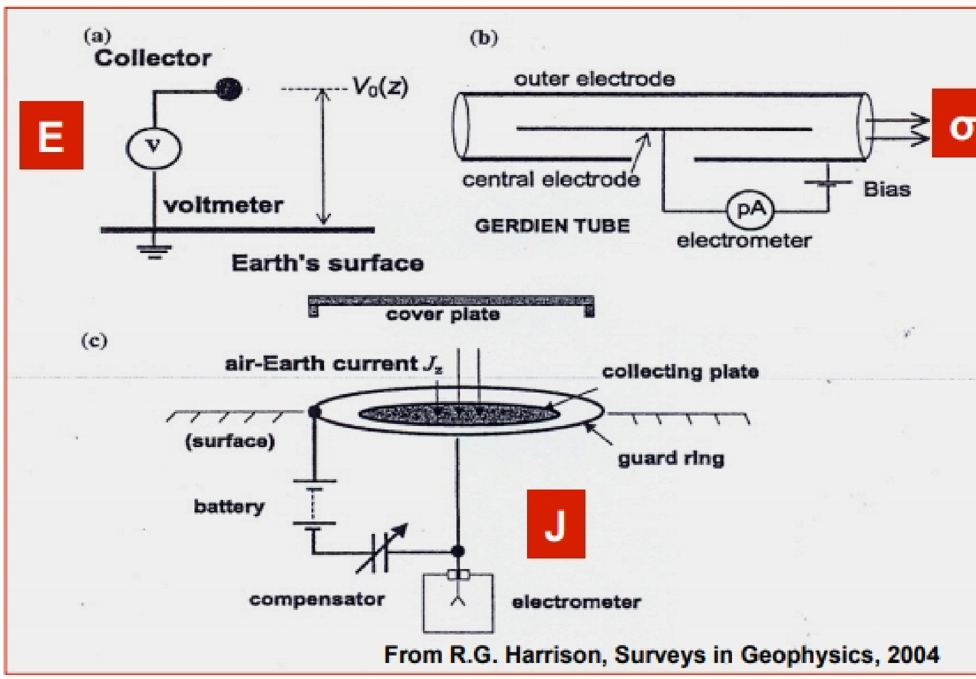
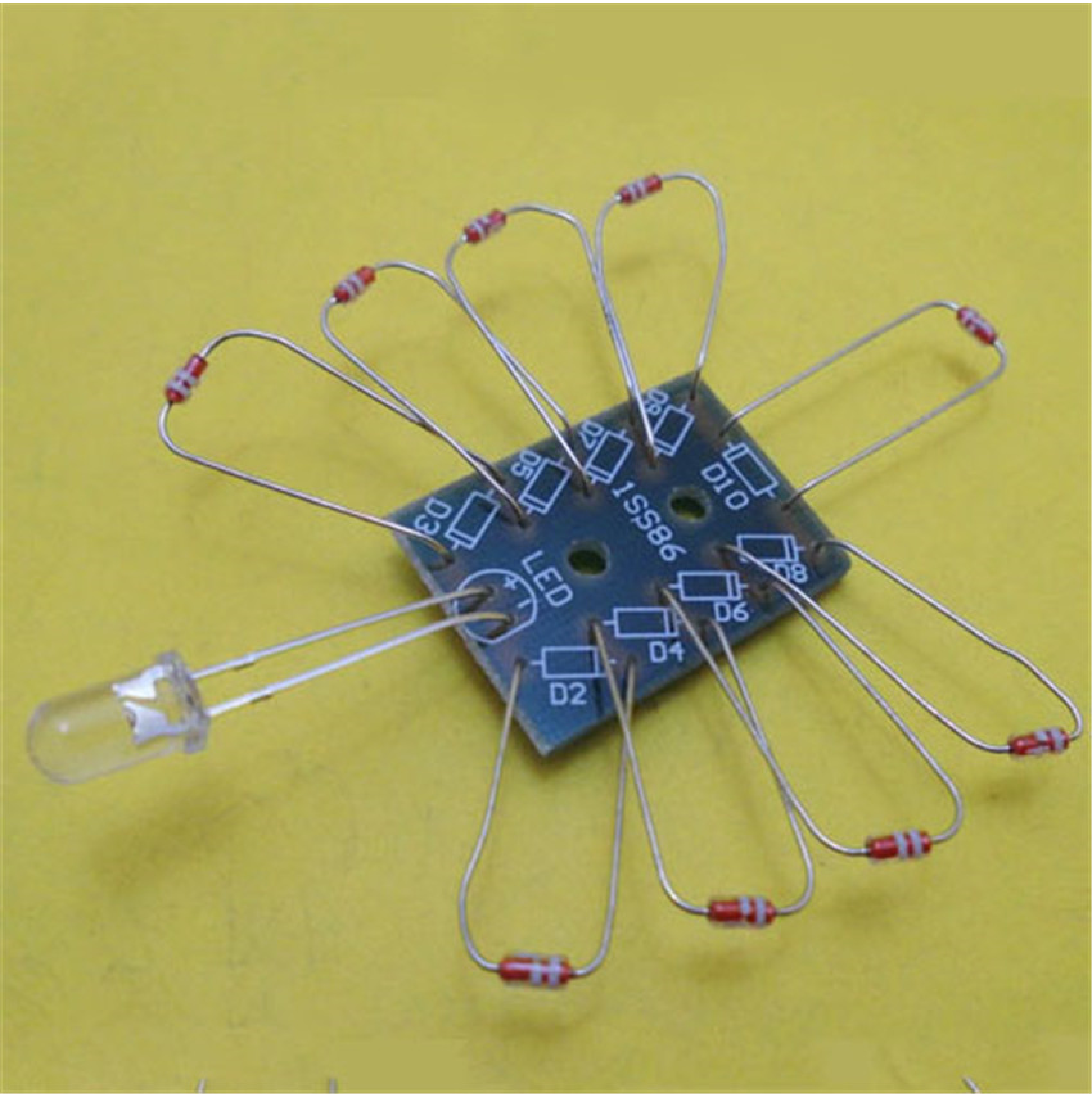


Figure 2.3. The lightning rod that Toaldo designed for the church of San Marco in Venice. GiuseppeToaldo, "Del conduttore elettrico posto nel campanile" (Padua, 1776). Franklin Collec-

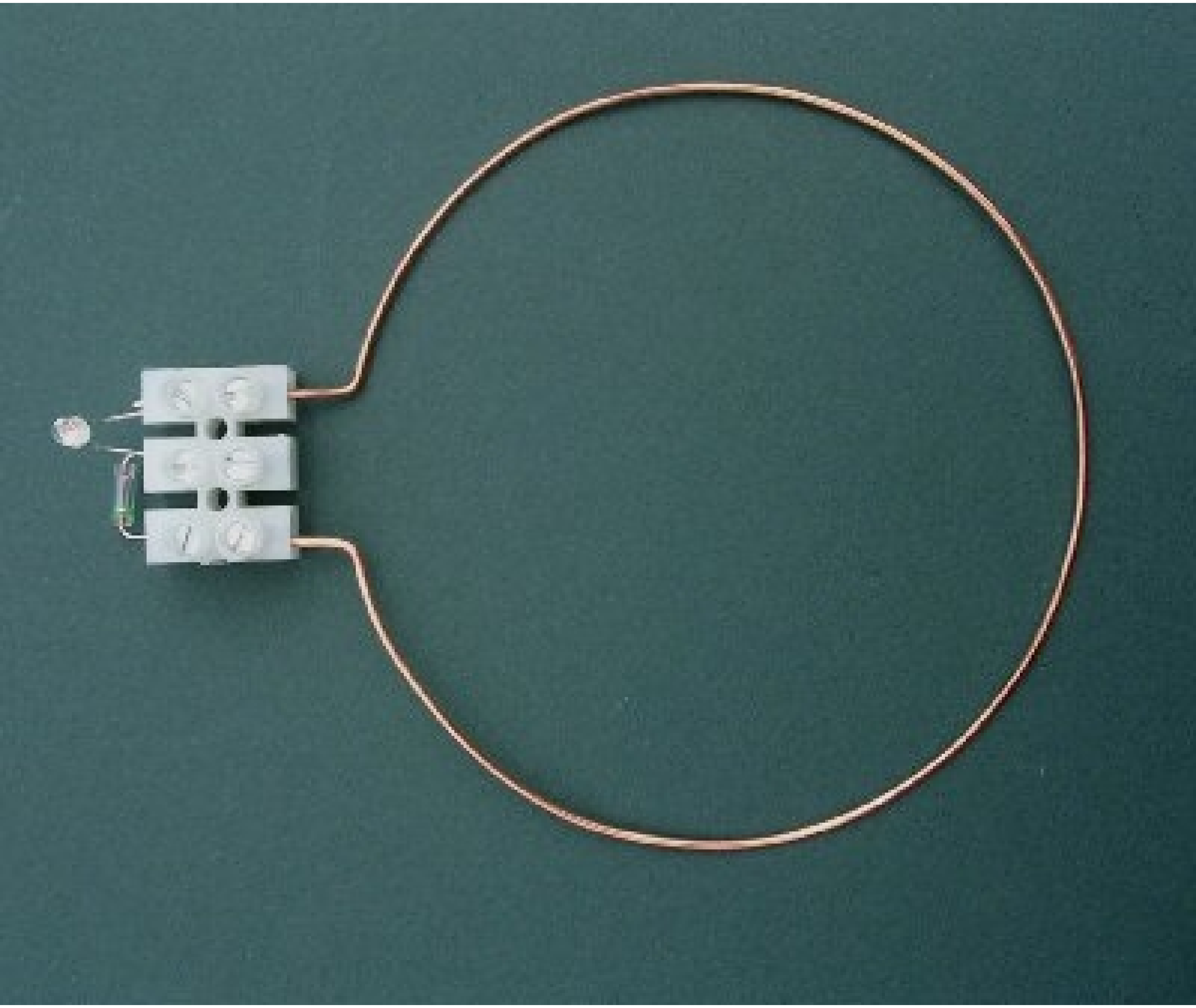

From M.J. Rycroft et al., JASTP, 2000
ELECTRIC CURRENTS
magnetosphere
thermosphere
60-80
+250 kV
IONOSPHERE
ALTITUDE, km
mesophere
E
FAIR
WEATHER
ATMOSPHERIC
ELECTRICITY
stratosphere
J
σ
+100 MV
-100 MV
130 Vm^{-1}
free troposphere
boundary layer
0 MV
mountain,
EARTH'S SURFACE


(a)
Collector
$V_0(z)$
E
voltmeter
Earth's surface
(b)
outer electrode
σ
central electrode
Bias
GERDIEN TUBE
pA
electrometer
cover plate
(c)
air-Earth current J_z
collecting plate
(surface)
guard ring
battery
J
compensator
electrometer
From R.G. Harrison, Surveys in Geophysics, 2004

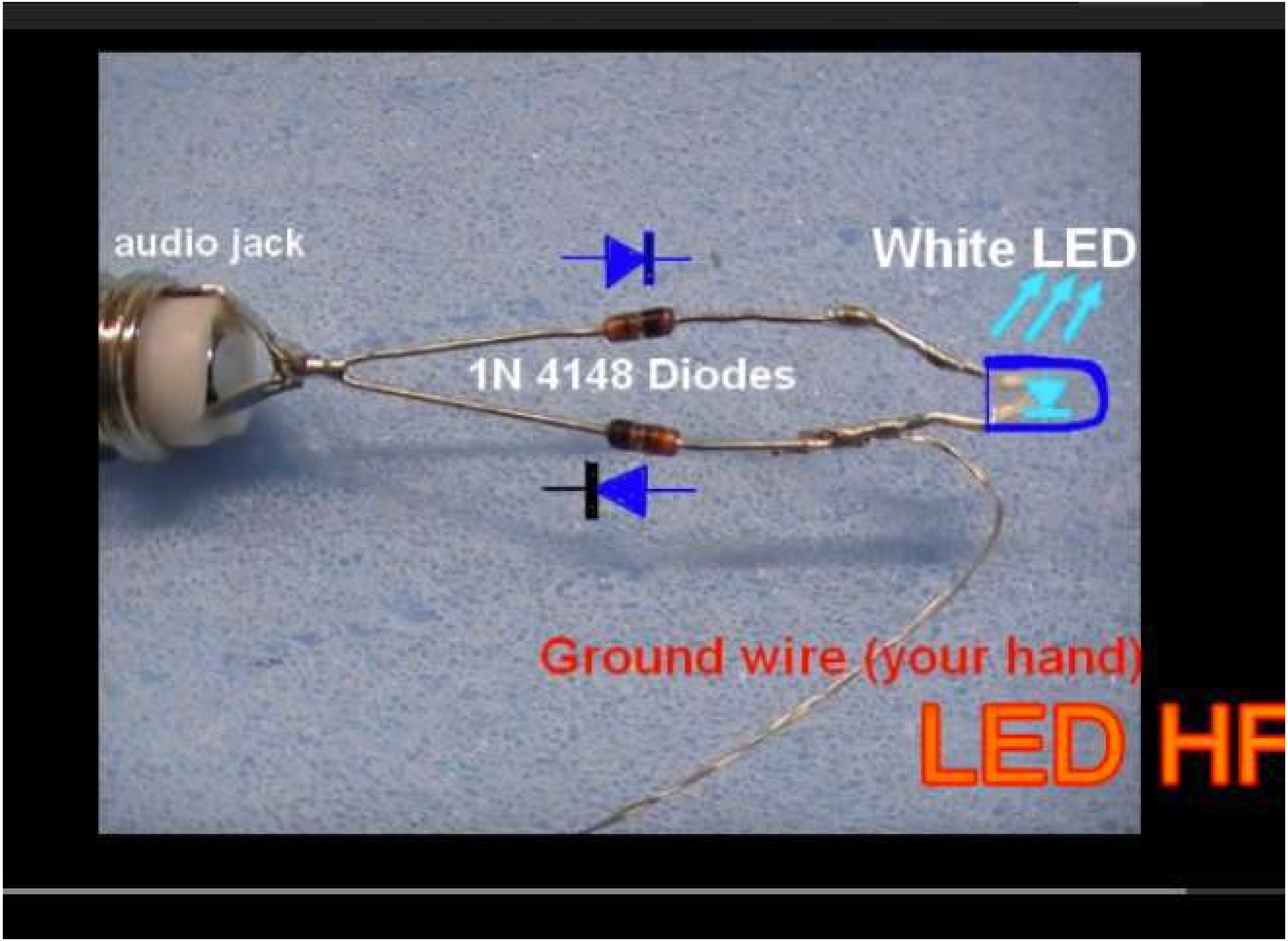

D10
1SS86
LED
D2

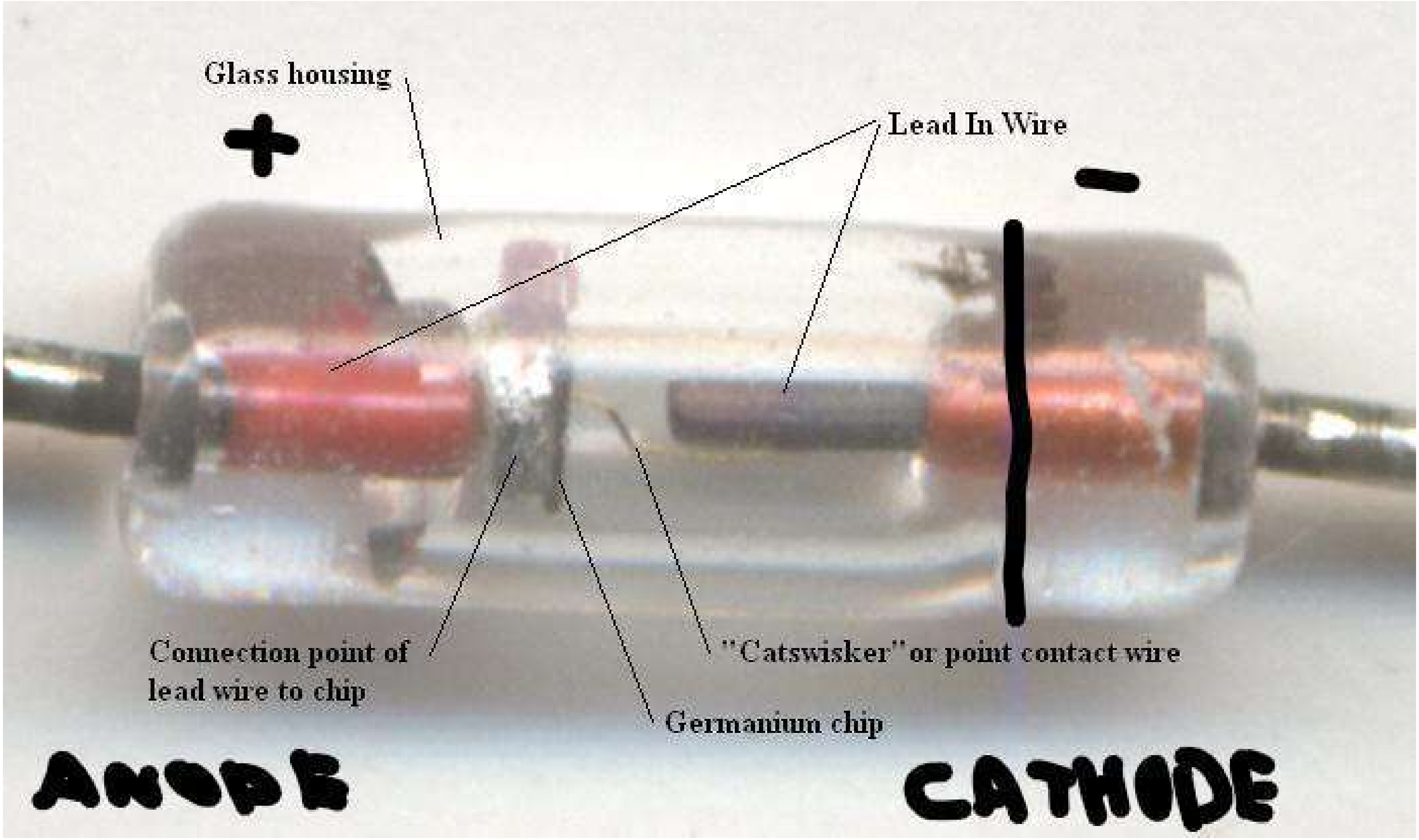

D3
D5
D10
1SS86
LED
D8
D6
D4
D2

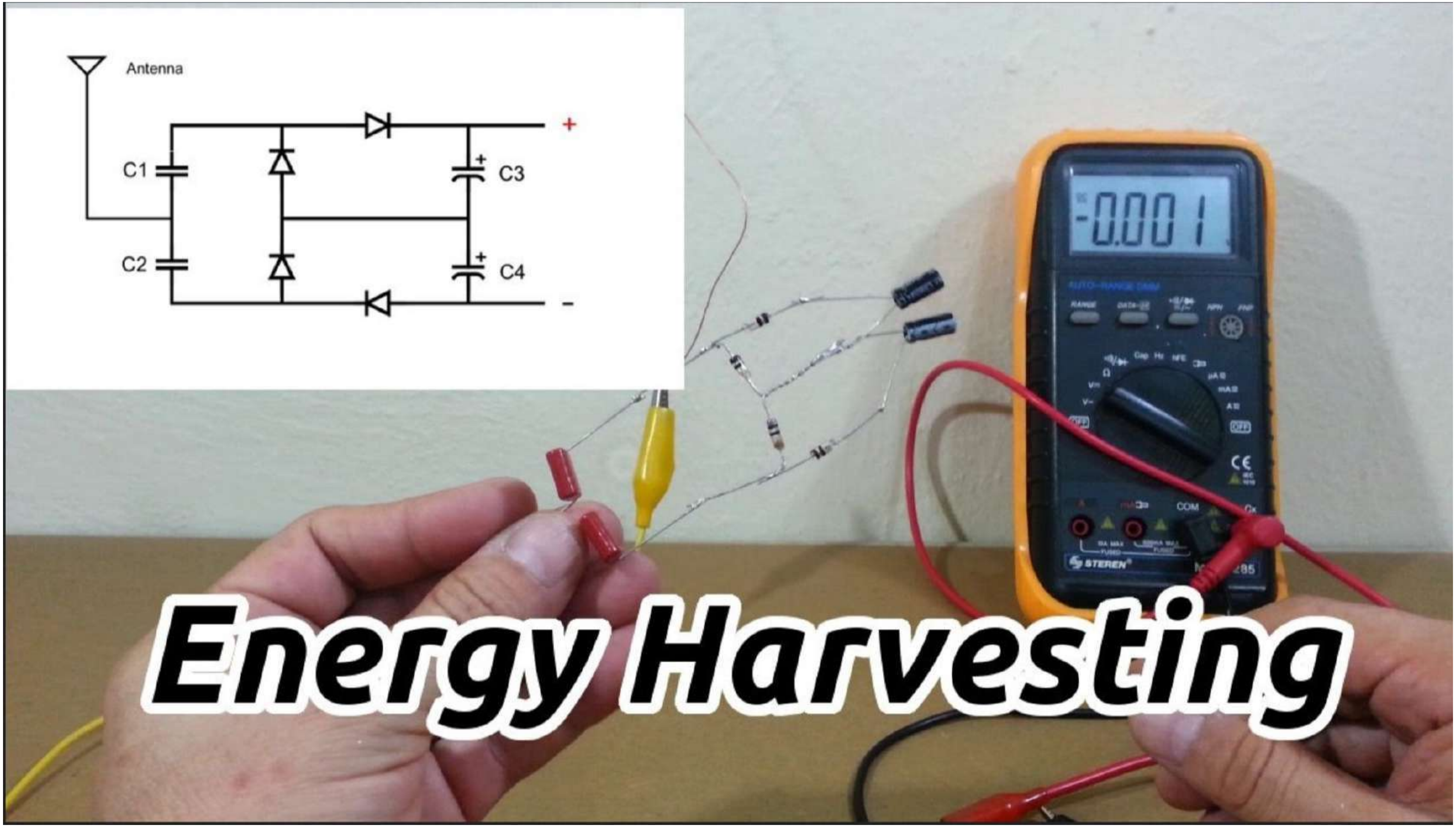

Sony Ericsson



electricity from radiowaves 3


audio jack
White LED
1N 4148 Diodes
Ground wire (your hand)
LED HF

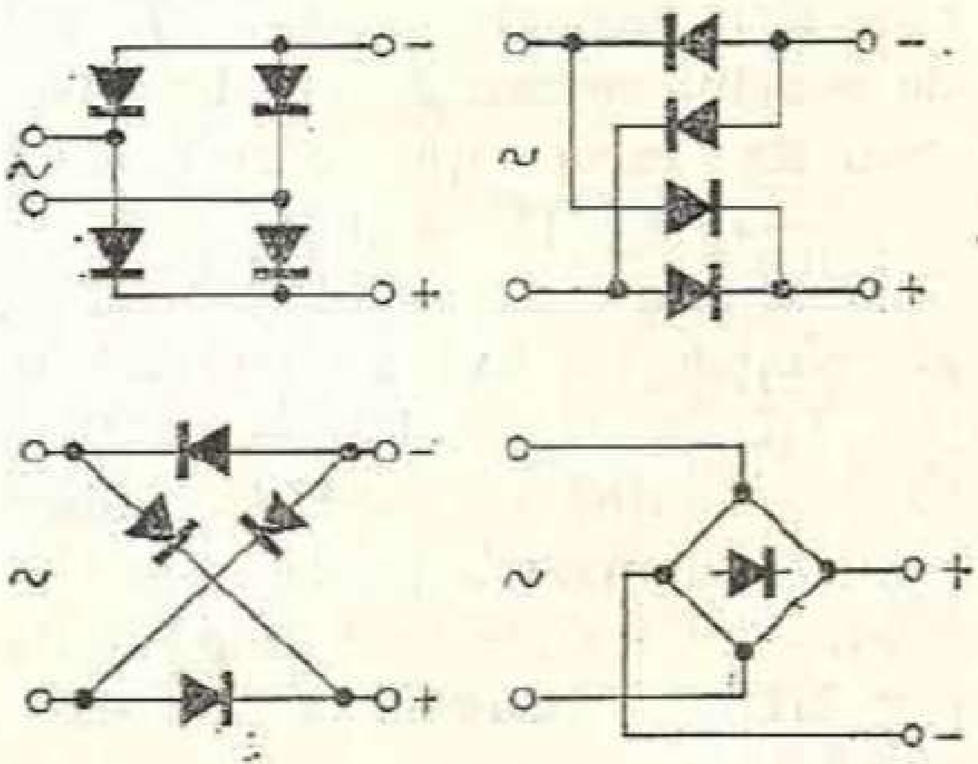

Glass housing
+
Lead In Wire
-
Connection point of
lead wire to chip
"Catswisker" or point contact wire
Germanium chip
ANODE
CATHODE


Antenna
C1
C2
C3
C4
+
-
-0.001
Energy Harvesting

feluri (fig. III.9), schemele fiind echivalente cu reprezentarea de bază din fig. III.8. Diodele sînt legate în serie, în formă de patrulater, două avînd comun anodul (punctul *2*), iar celelalte două catodul (punctul *4*). Tensiunea alternativă de intrare se aplică pe diagonala *1—3*, iar consumatorul se conectează pe diagonala *2—4*.

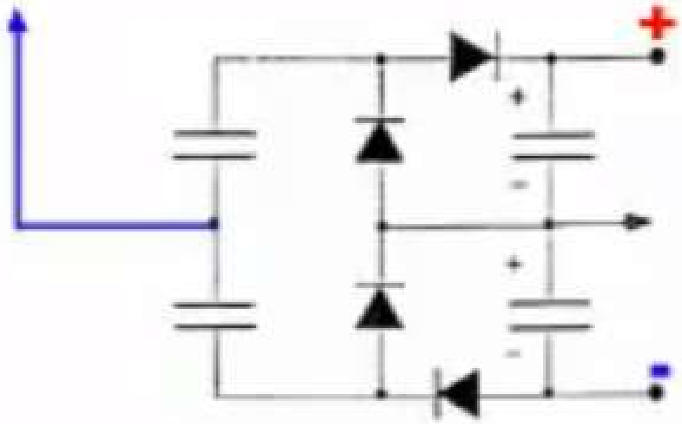
Pentru a urmări funcționarea punții, să presupunem că prima alternanță sosită în nodul *1* este pozitivă. Ea blochează dioda D_2 și o deschide pe D_1, debitînd prin R_S un curent I_1 (săgețile pline), care se întoarce la

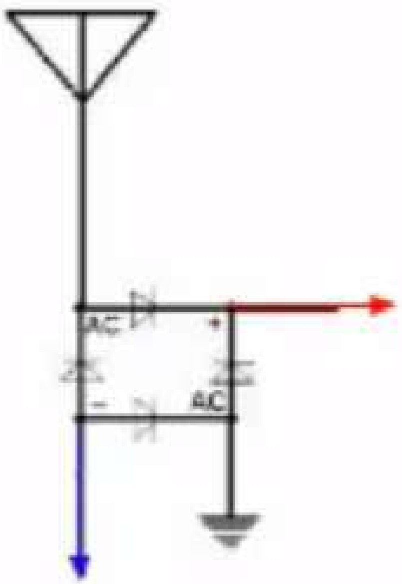
tice sau cu parametri cît mai apro-

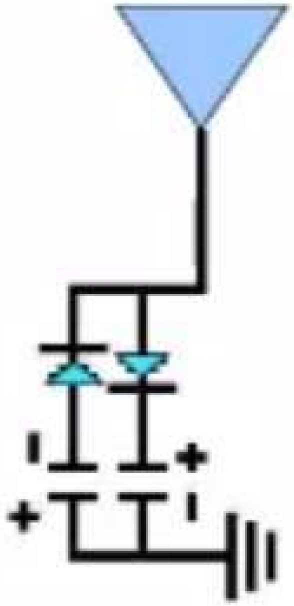


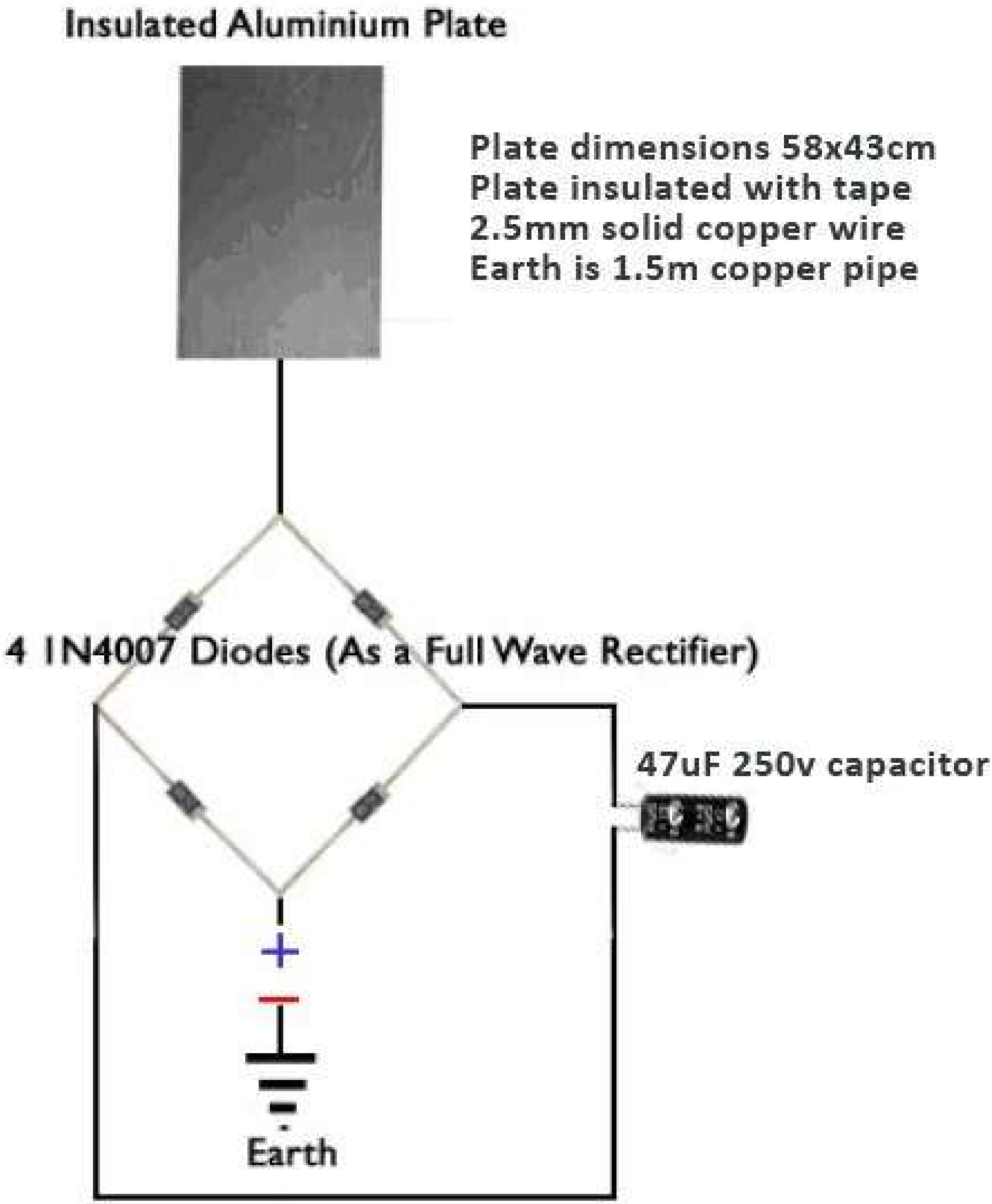
III.9. Puntea redresoare în diferite reprezentări.

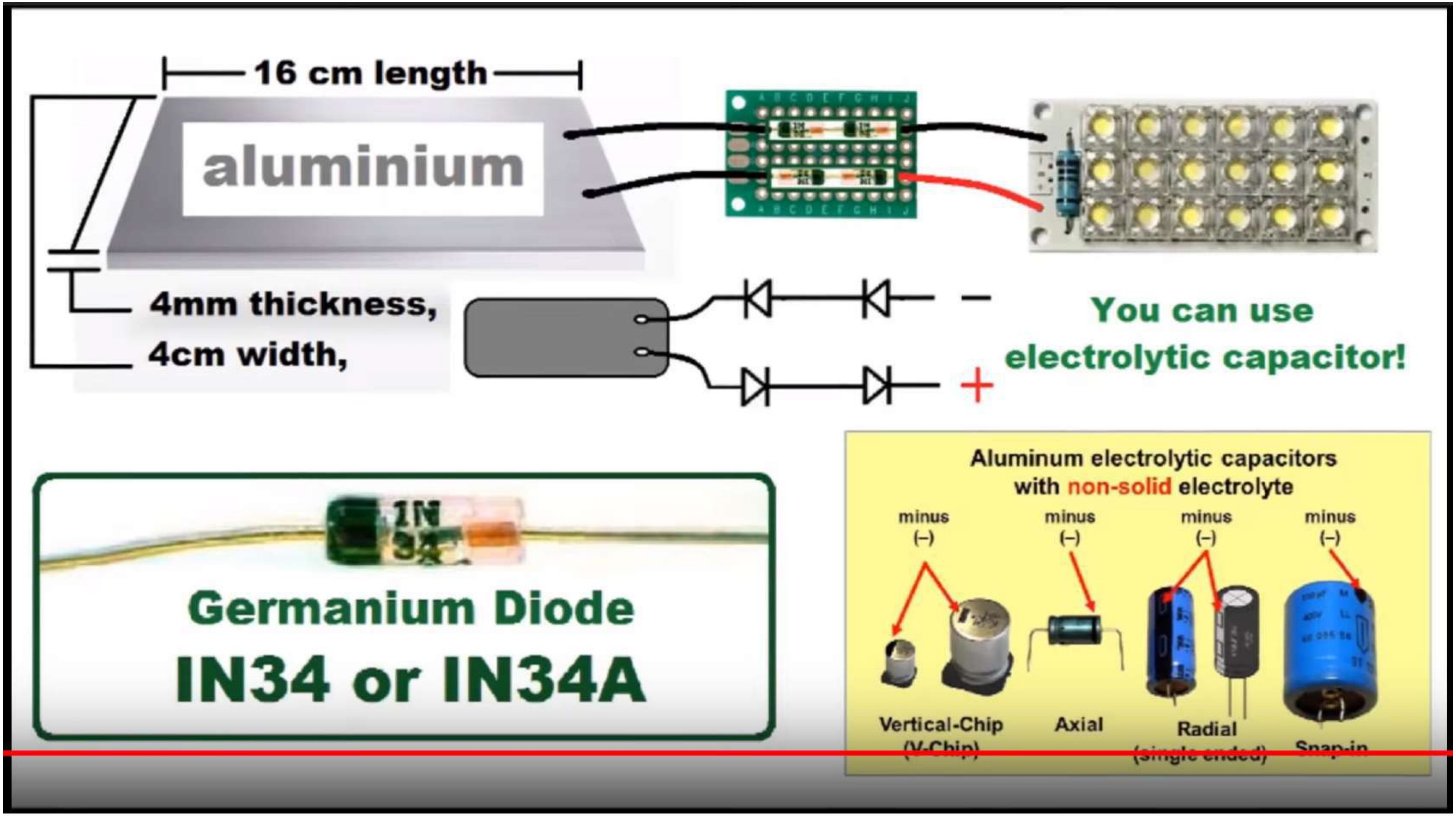
circuits used on LC "RadioWaves"

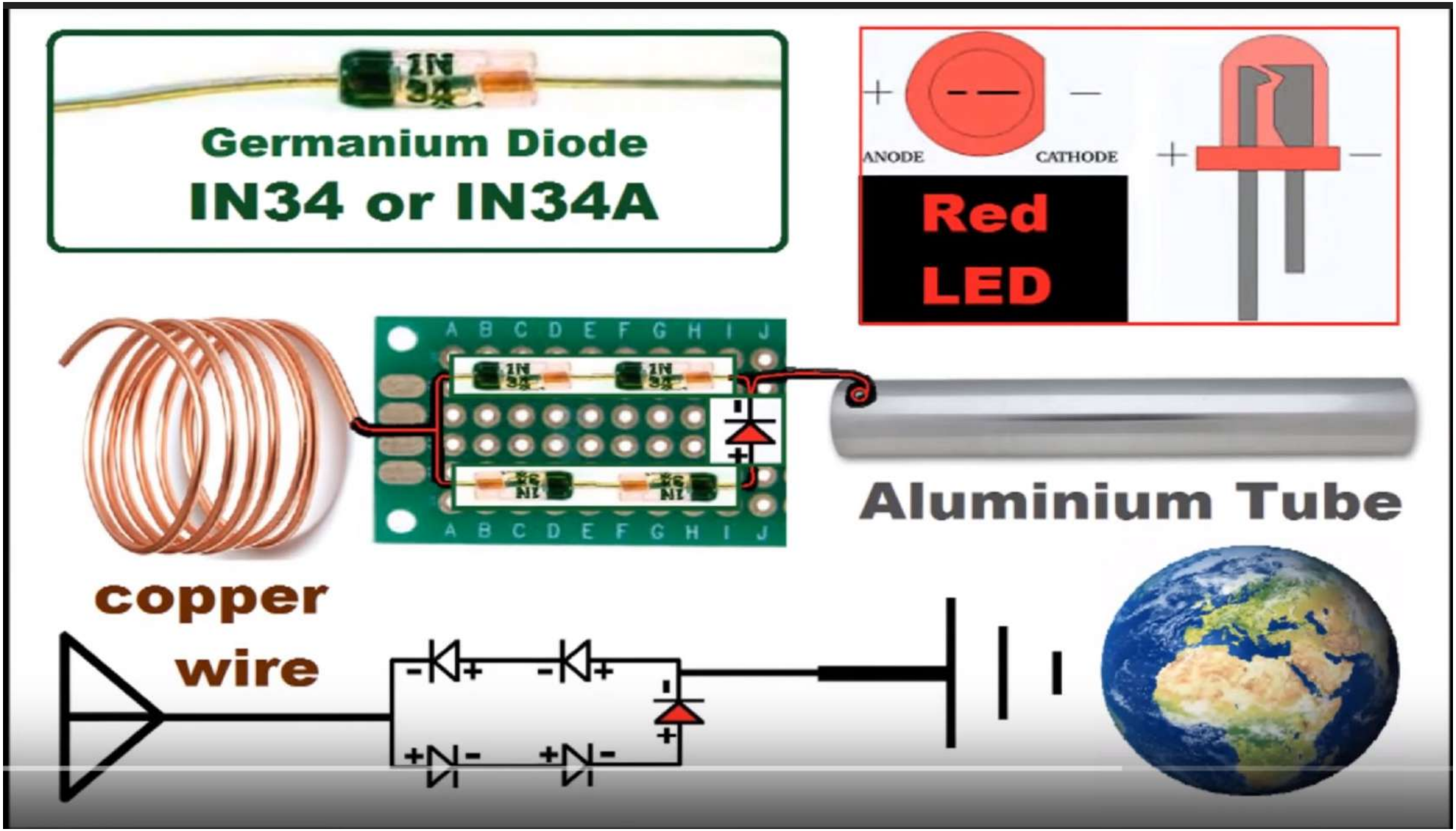




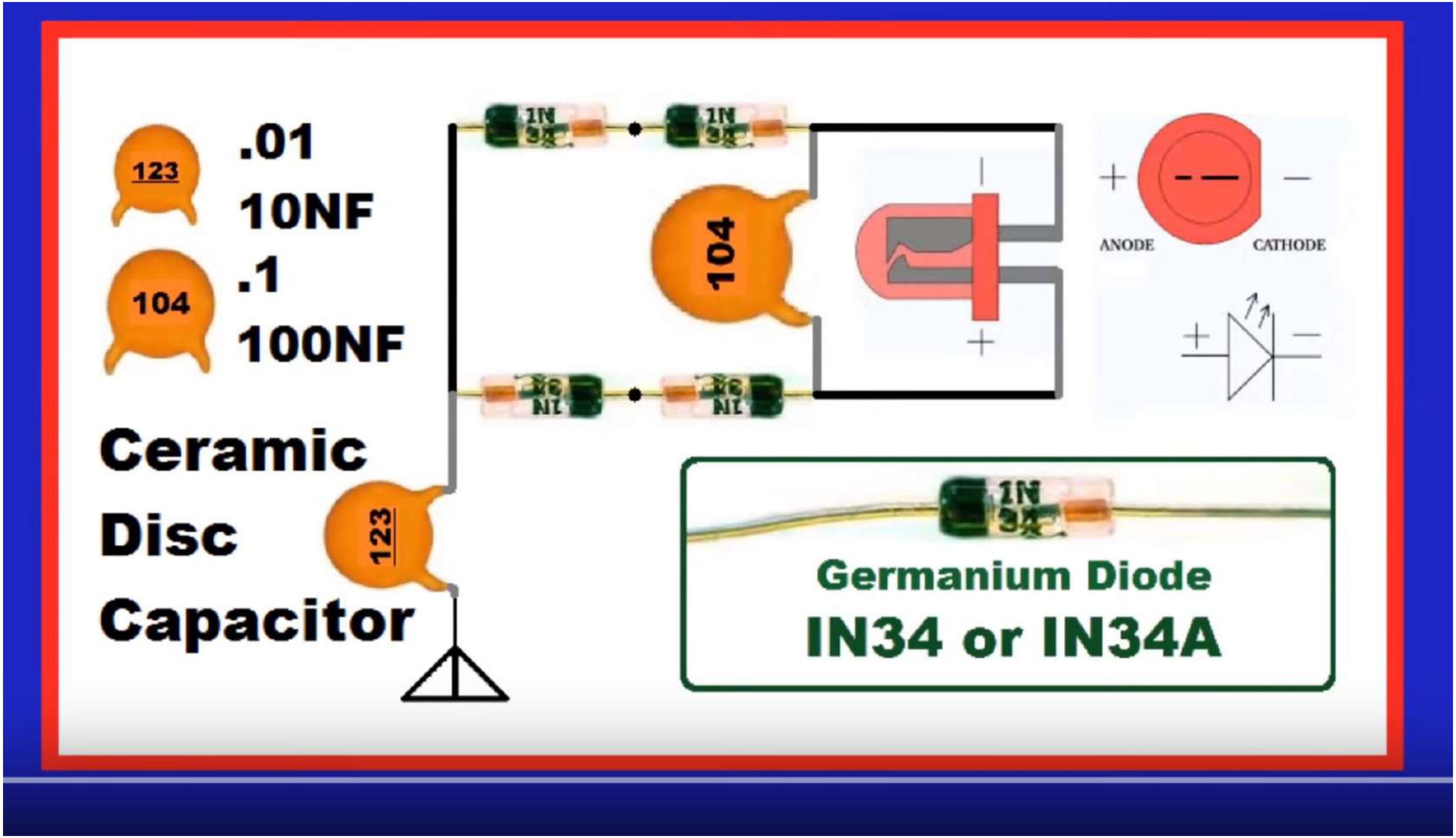



Insulated Aluminium Plate
Plate dimensions 58x43cm
Plate insulated with tape
2.5mm solid copper wire
Earth is 1.5m copper pipe
4 1N4007 Diodes (As a Full Wave Rectifier)
47uF 250v capacitor
+
-
Earth

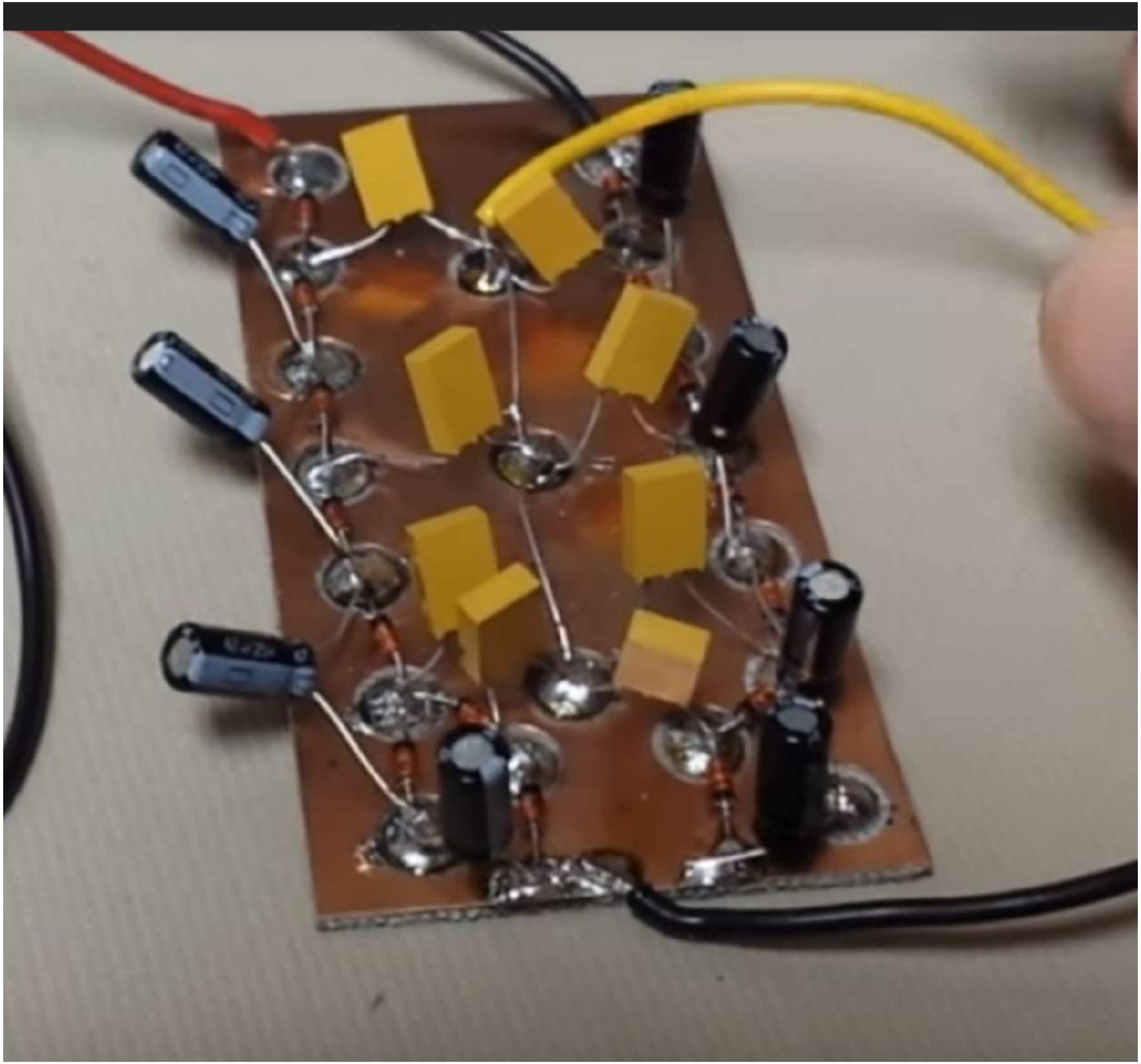

16 cm length
aluminium
4mm thickness,
4cm width,
–
+
You can use electrolytic capacitor!
Germanium Diode
IN34 or IN34A
Aluminum electrolytic capacitors
with non-solid electrolyte
minus (–)
minus (–)
minus (–)
minus (–)
Vertical-Chip
Axial
Radial

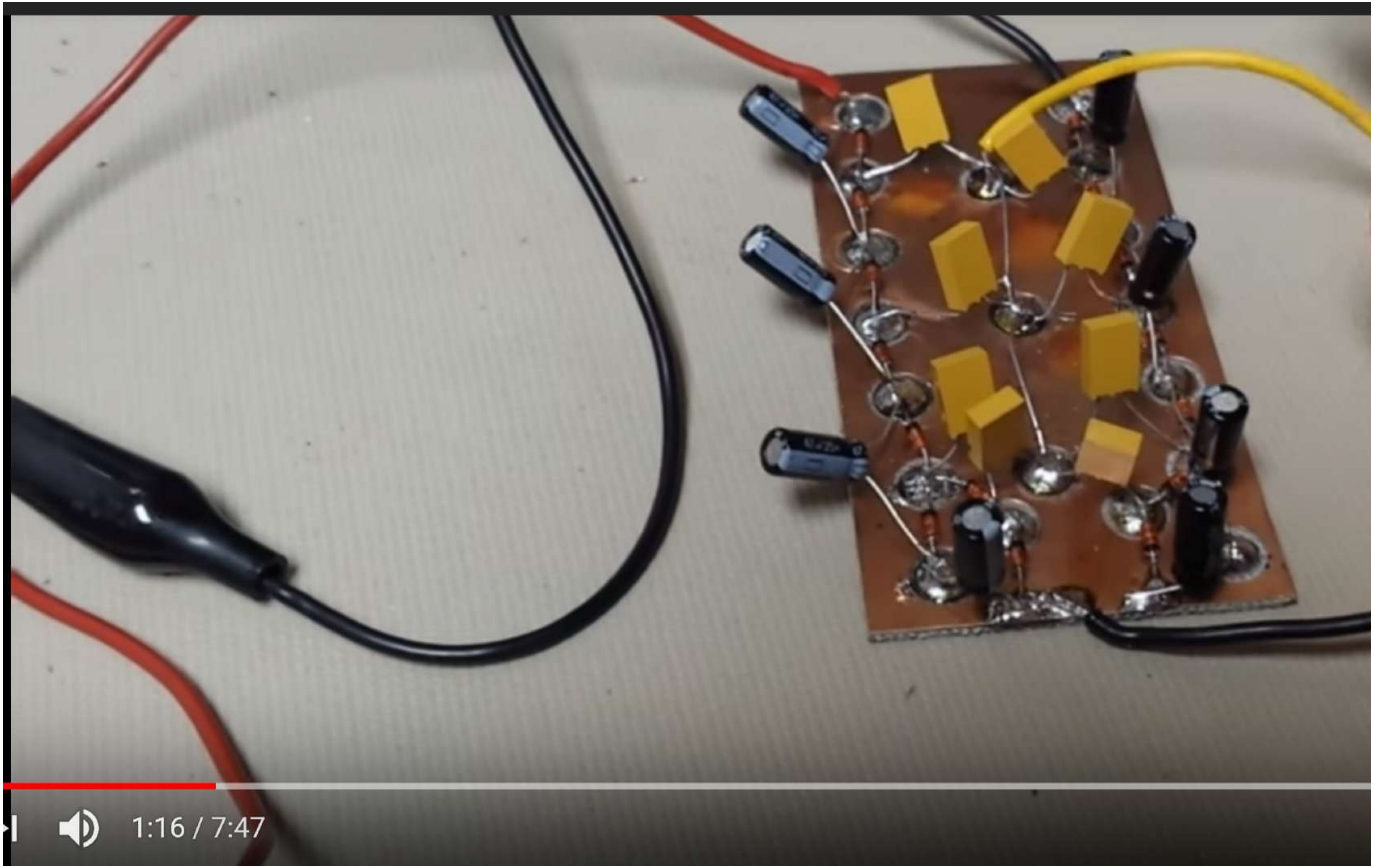


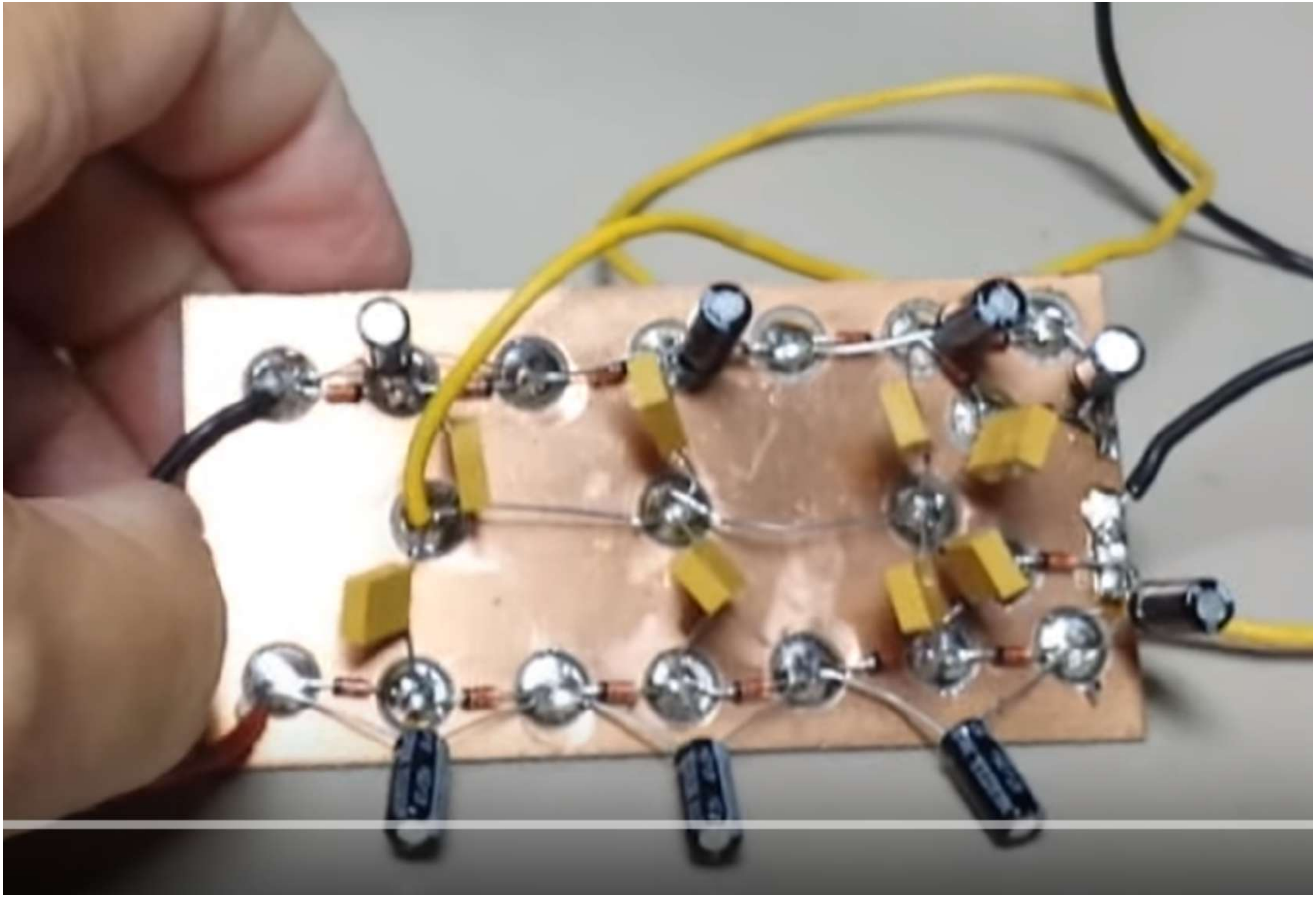
Germanium Diode
IN34 or IN34A
ANODE
CATHODE
Red
LED
Aluminium Tube
copper
wire

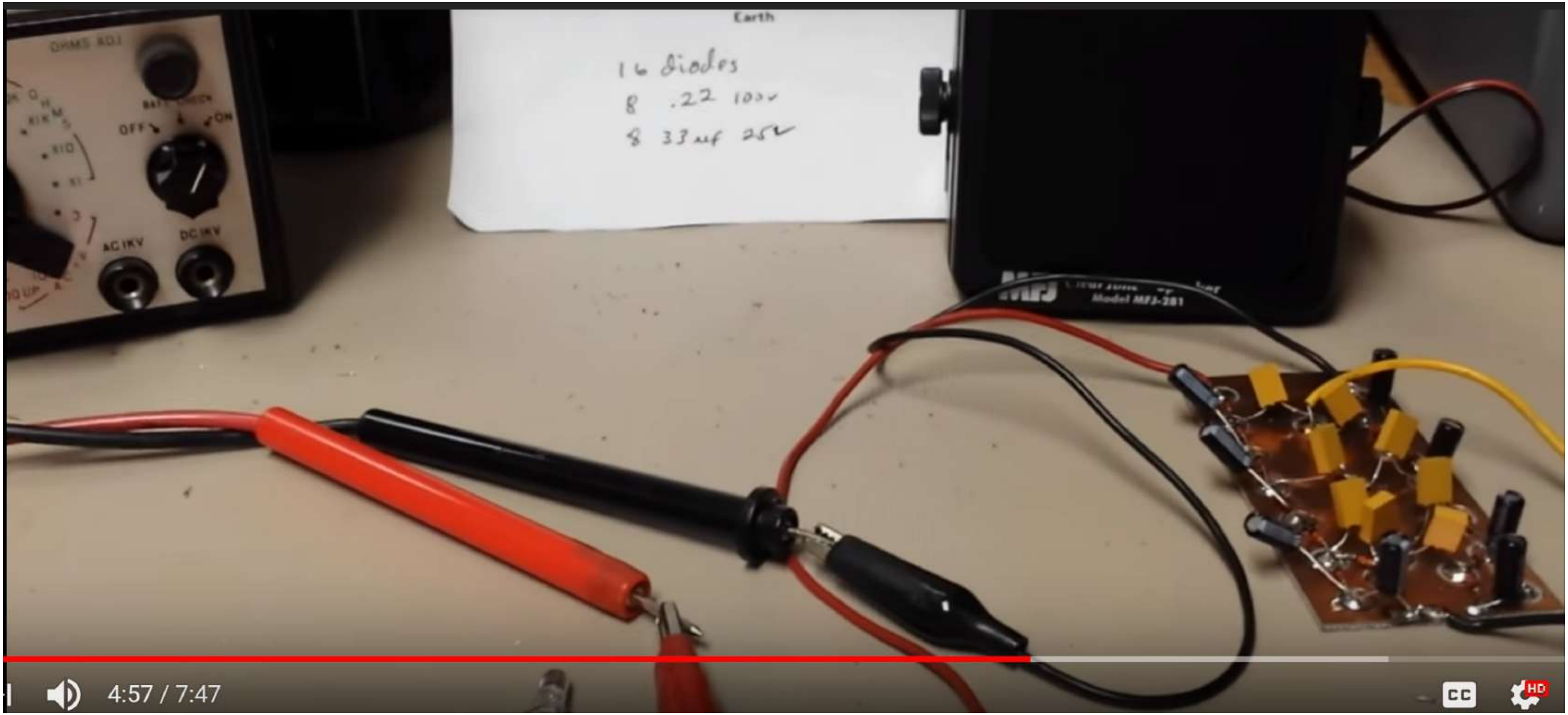


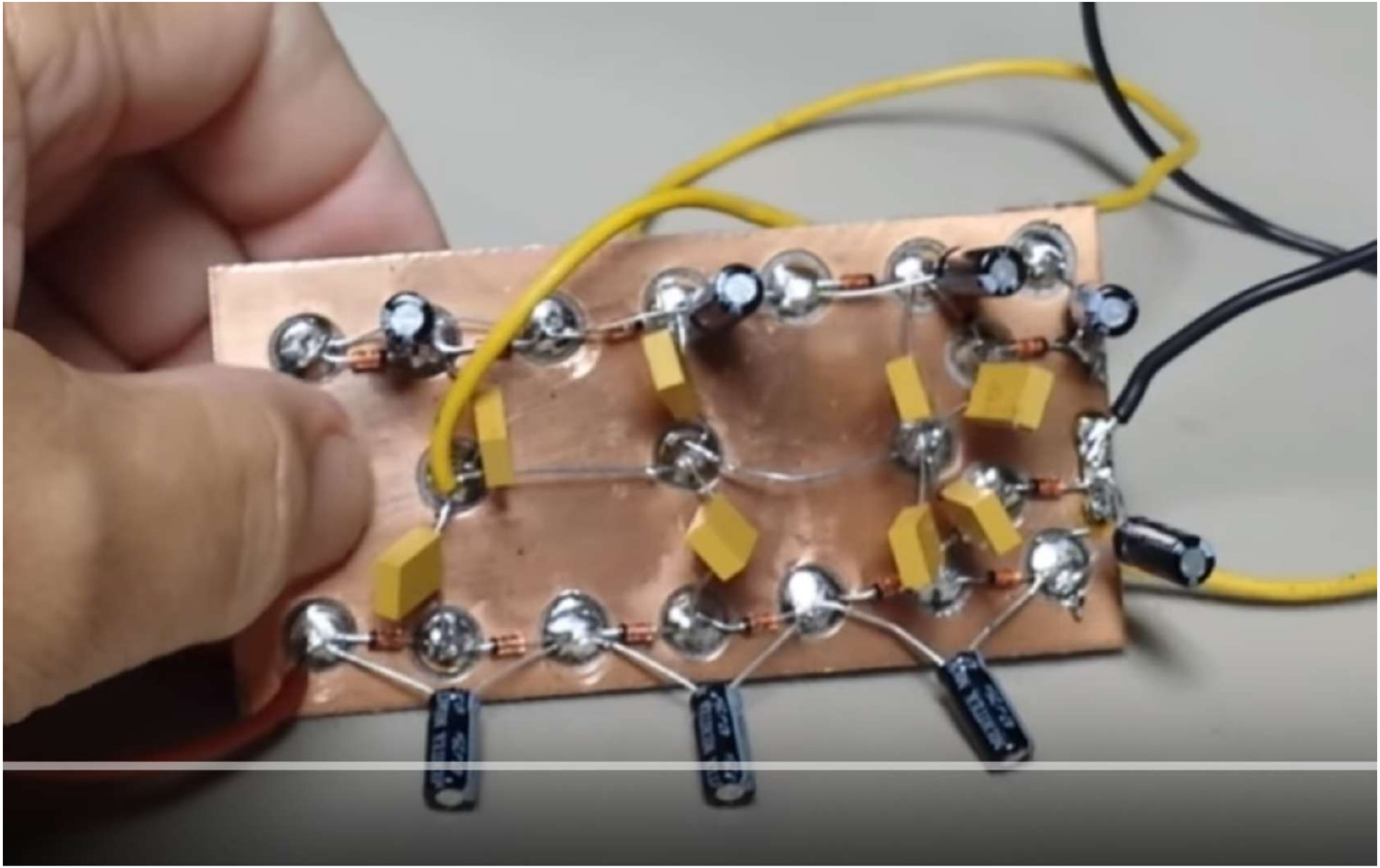
123
.01
10NF
104
.1
100NF
Ceramic
Disc
Capacitor
1N34
104
123
+
-
ANODE
CATHODE
Germanium Diode
IN34 or IN34A

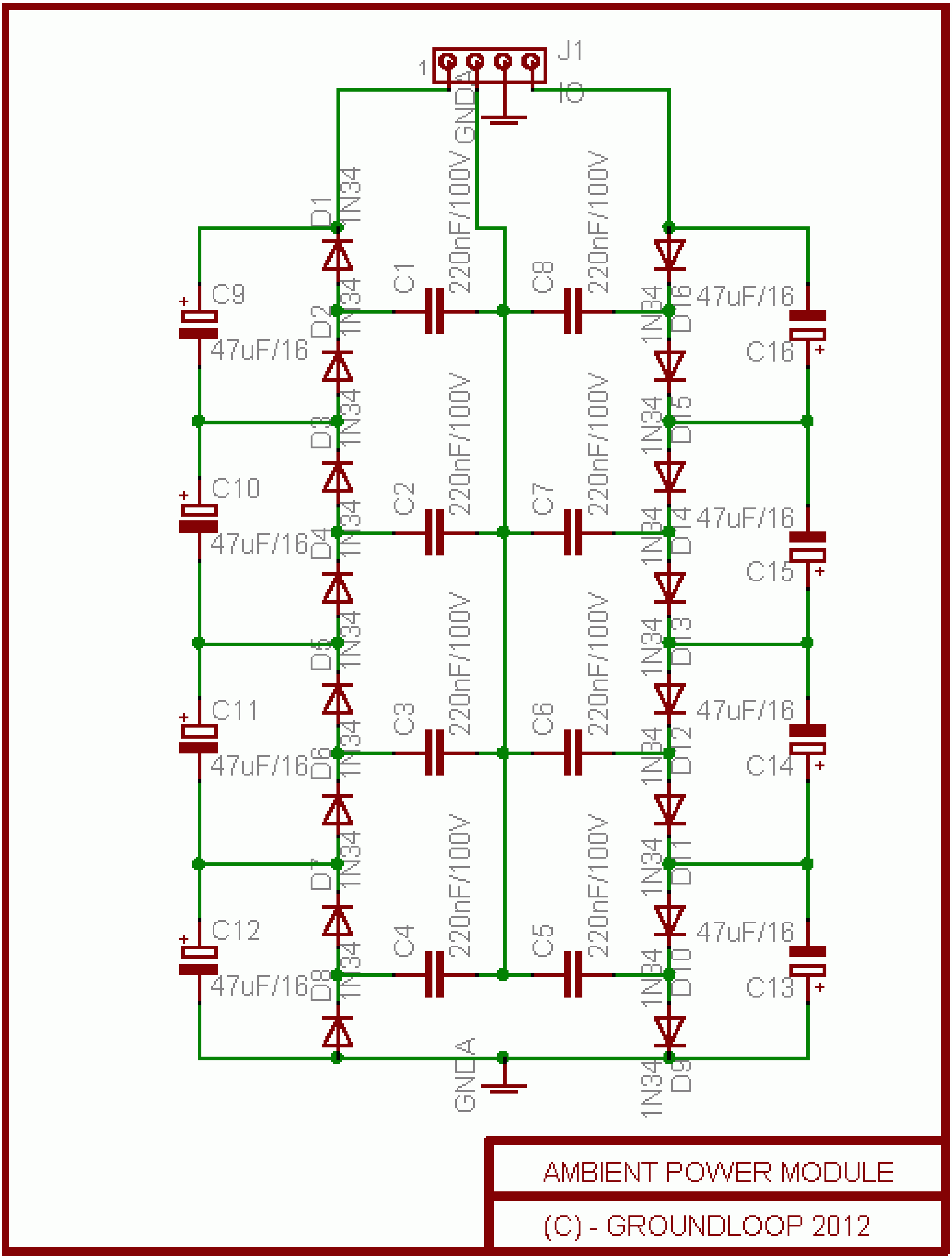



1:16 / 7:47

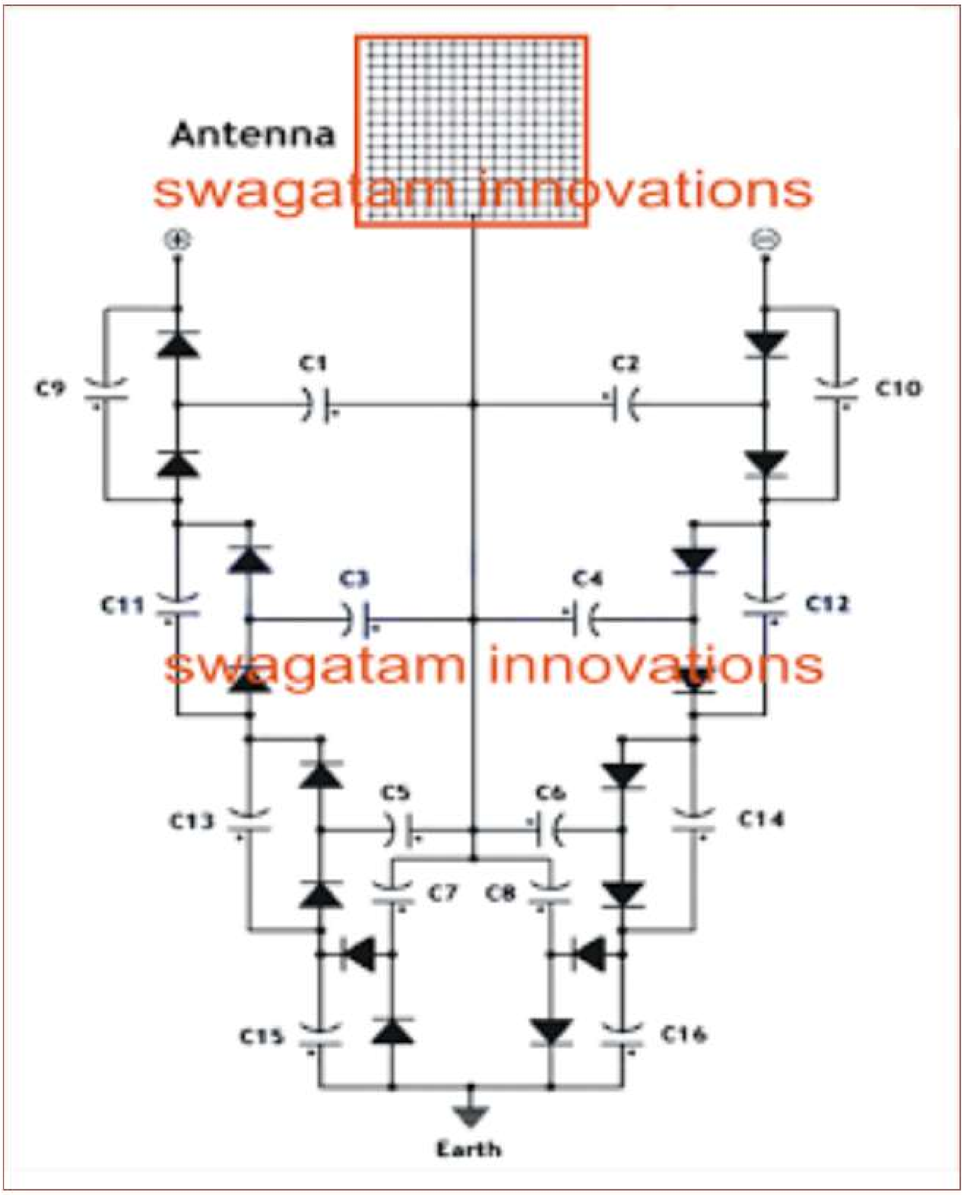



Earth
16 diodes
8 .22 100v
8 33uf 25v
OHMS ADJ
OFF
ON
AC IKV
DC IKV
Model MFJ-281
4:57 / 7:47
CC
HD




J1
1
GNDA
IO
D1 1N34
D2 1N34
D3 1N34
D4 1N34
D5 1N34
D6 1N34
D7 1N34
D8 1N34
D9 1N34
D10 1N34
D11 1N34
D12 1N34
D13 1N34
D14 1N34
D15 1N34
D16 1N34
C1 220nF/100V
C2 220nF/100V
C3 220nF/100V
C4 220nF/100V
C5 220nF/100V
C6 220nF/100V
C7 220nF/100V
C8 220nF/100V
C9 47uF/16
C10 47uF/16
C11 47uF/16
C12 47uF/16
C13 47uF/16
C14 47uF/16
C15 47uF/16
C16 47uF/16
GNDA
AMBIENT POWER MODULE
(C) - GROUNDLOOP 2012

Circuit Diagram

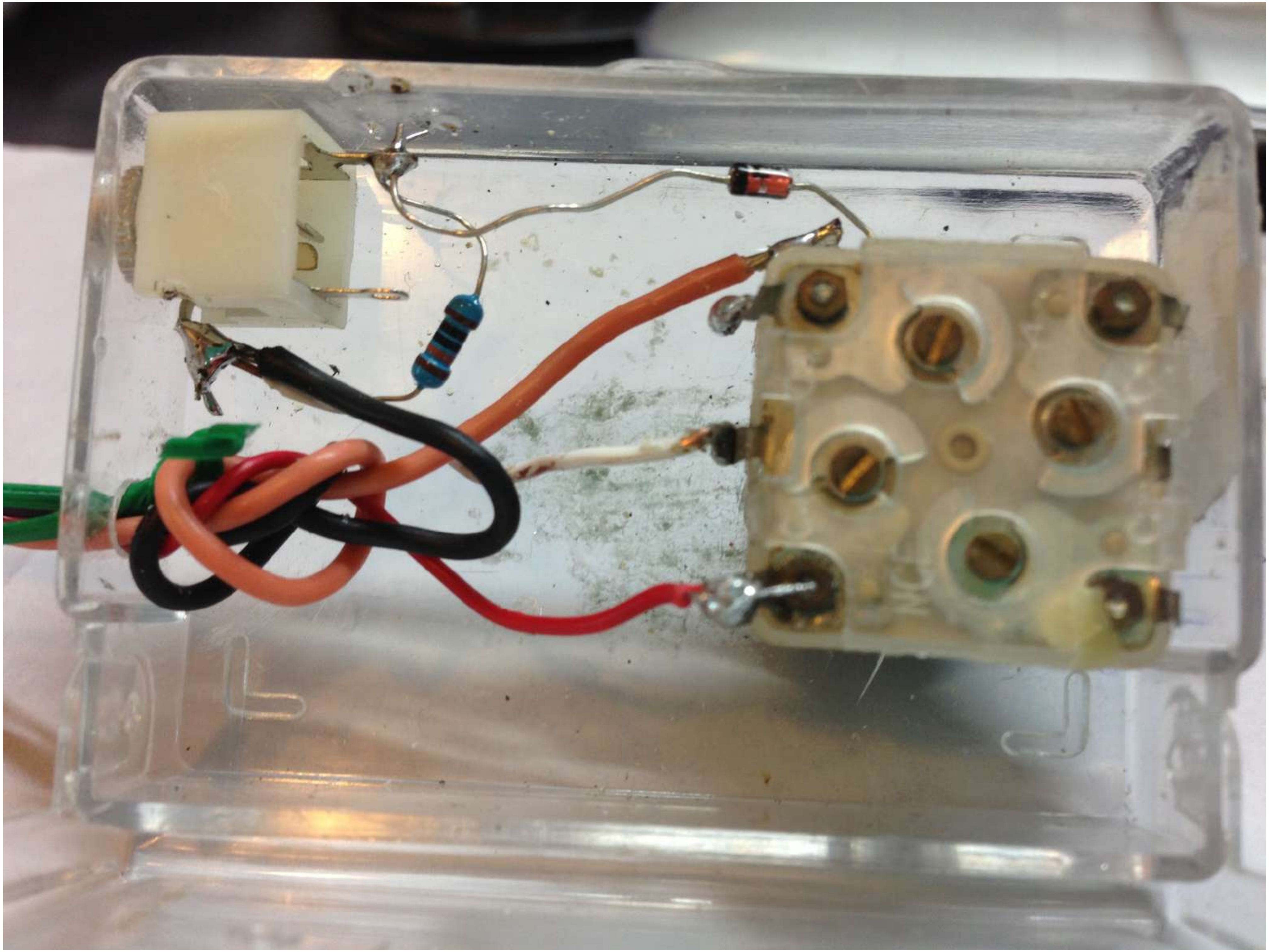


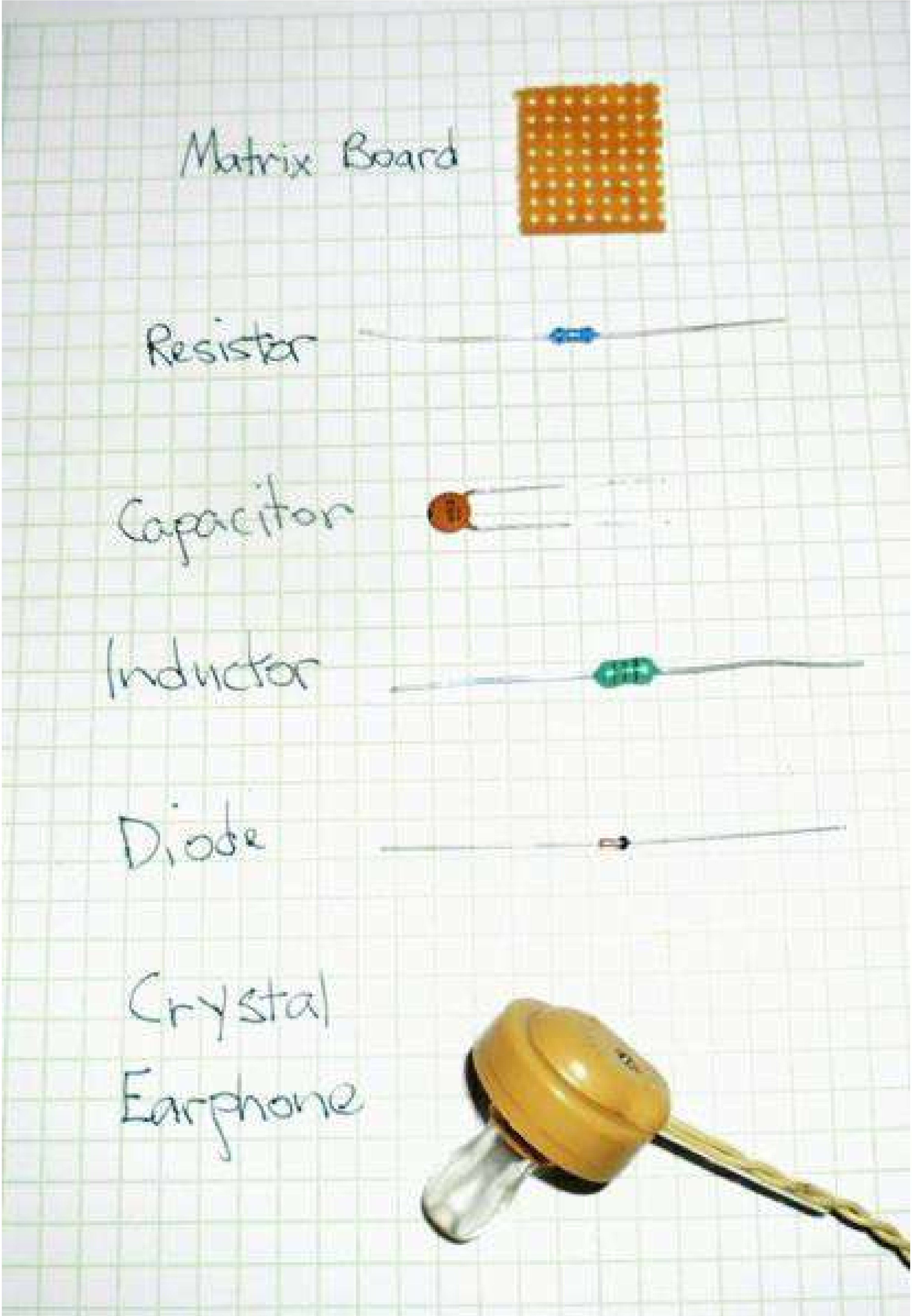
Parts List

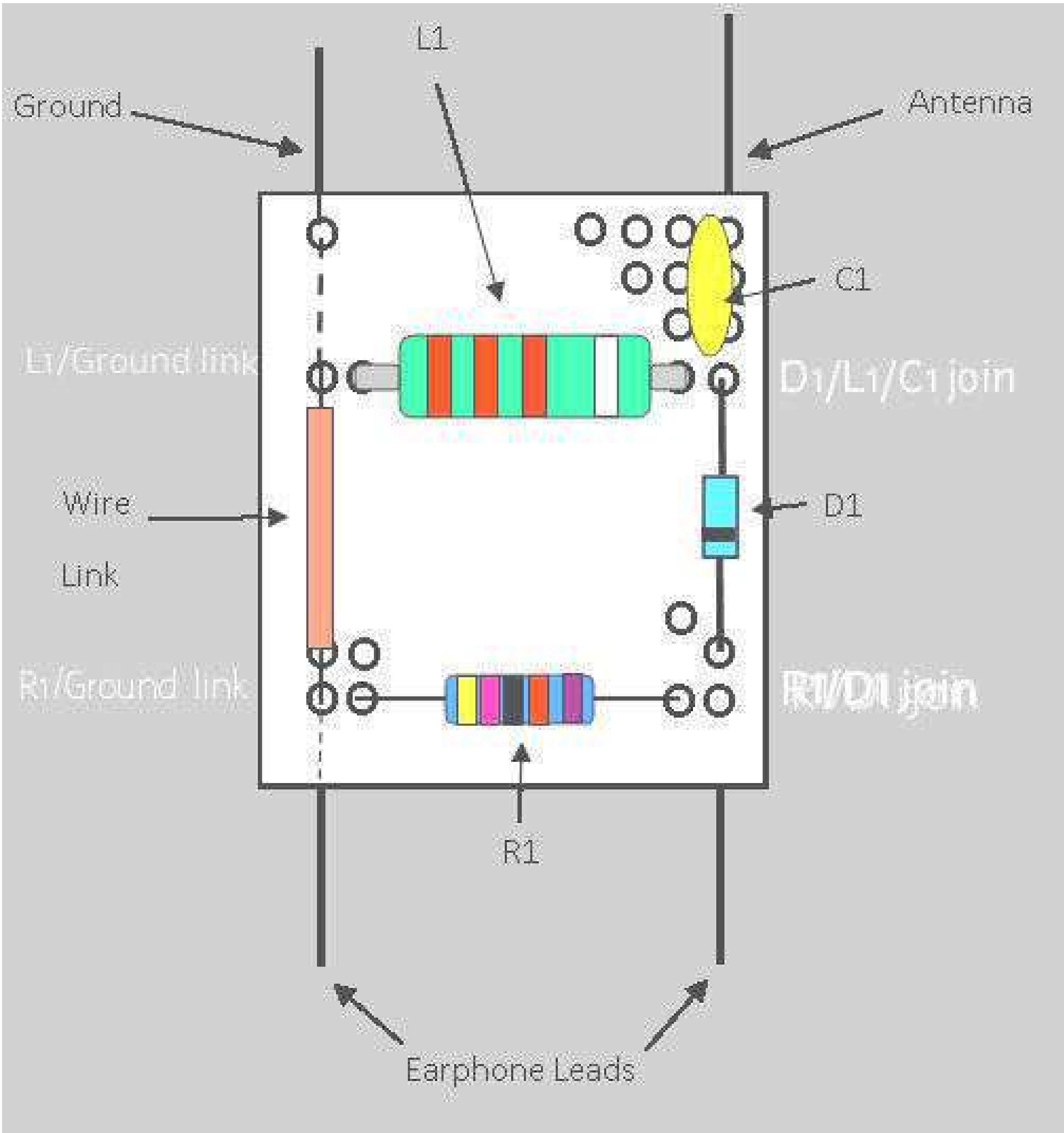
All Diodes are 1N4148

C1---C8 = 0.22uF/100V mylar

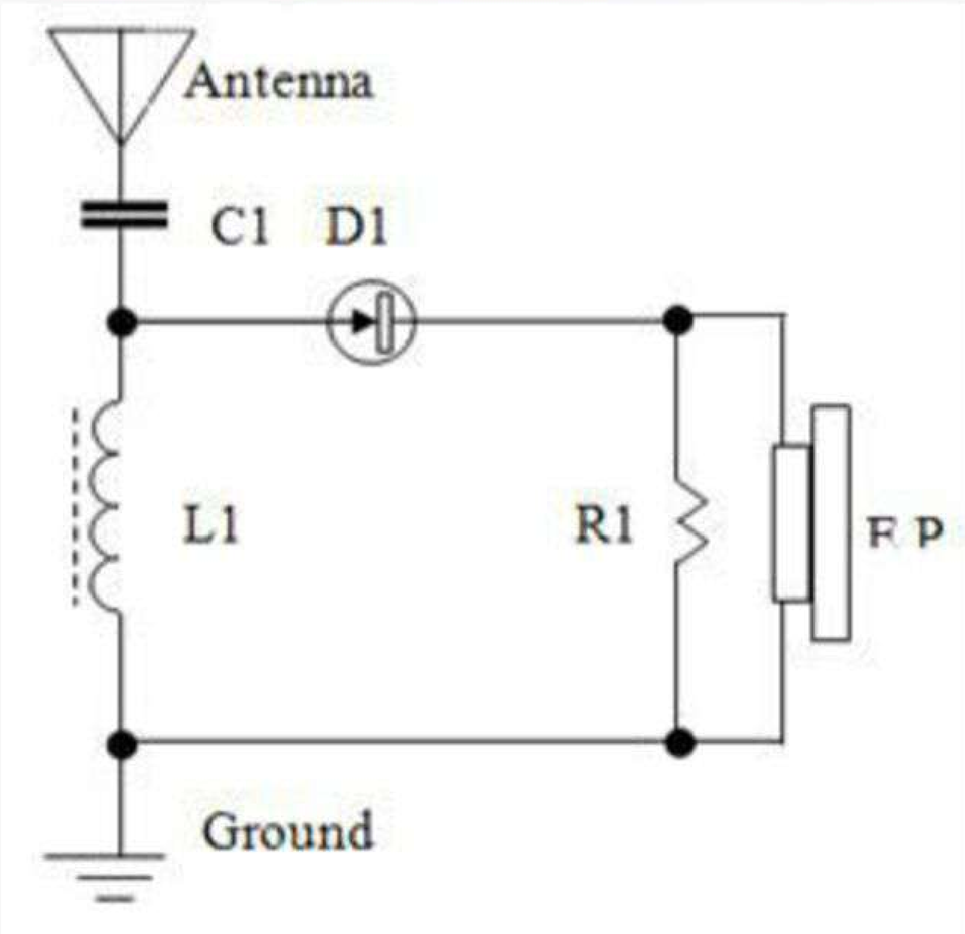
C9----C16 = 33uF/25V electrolytic

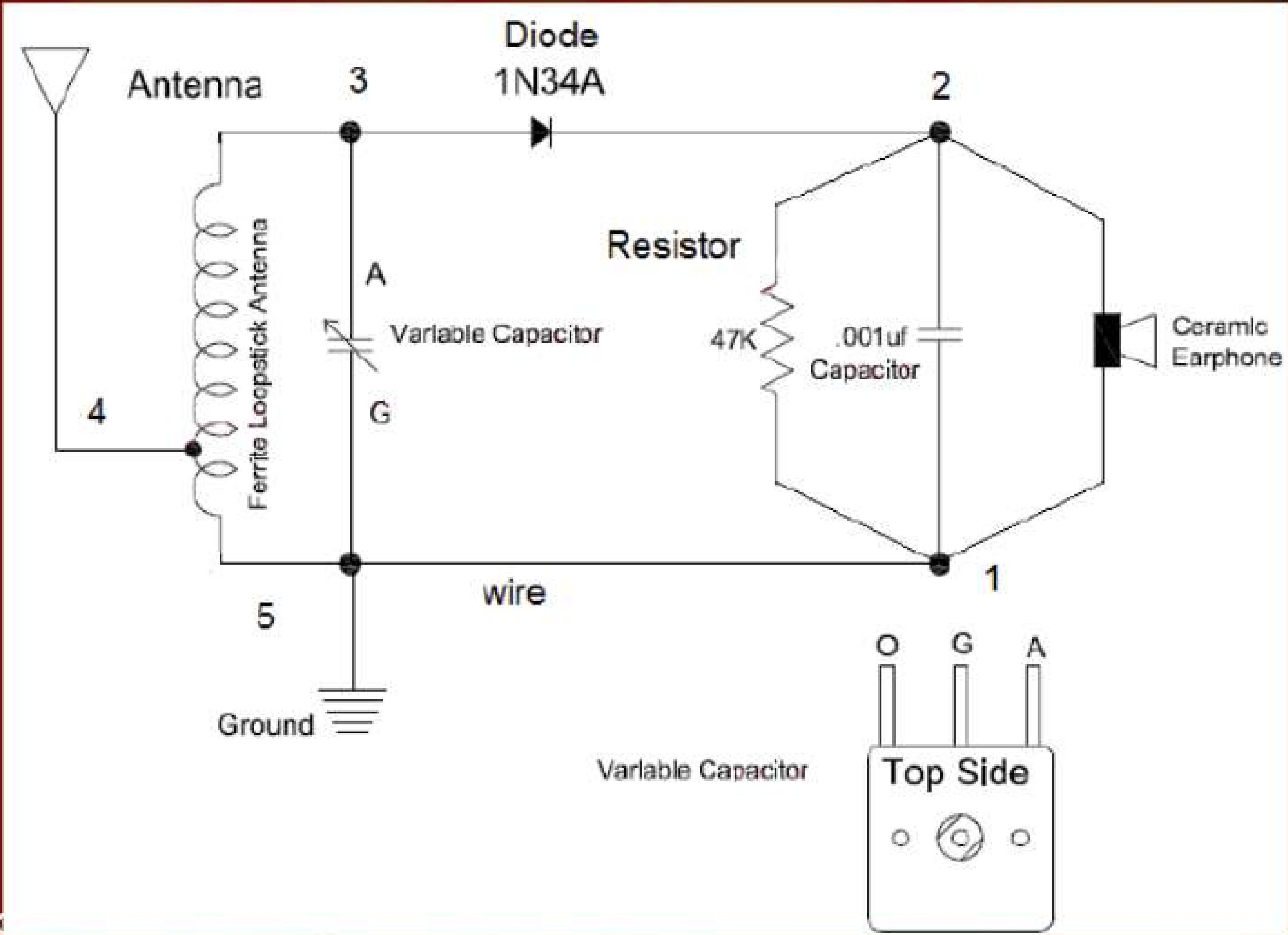



Matrix Board
Resistor
Capacitor
Inductor
Diode
Crystal
Earphone

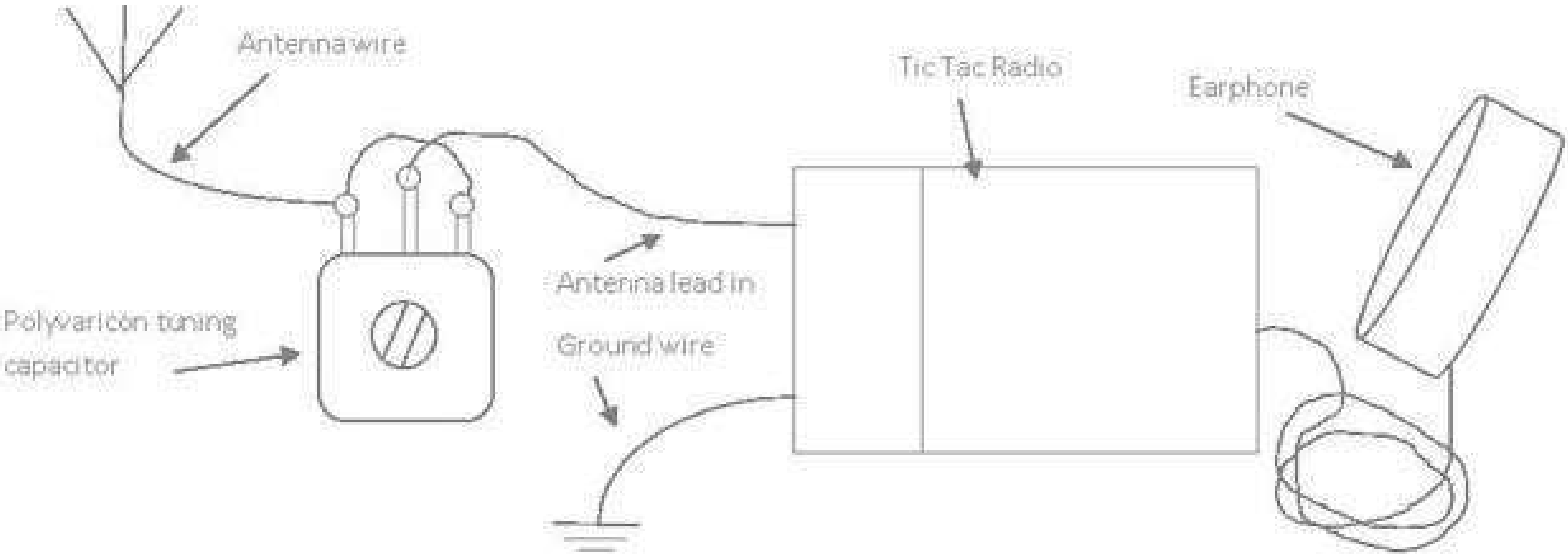

L1
Ground
Antenna
C1
L1/Ground link
D1/L1/C1 join
Wire
Link
D1
R1/Ground link
R1/D1 join
R1
Earphone Leads

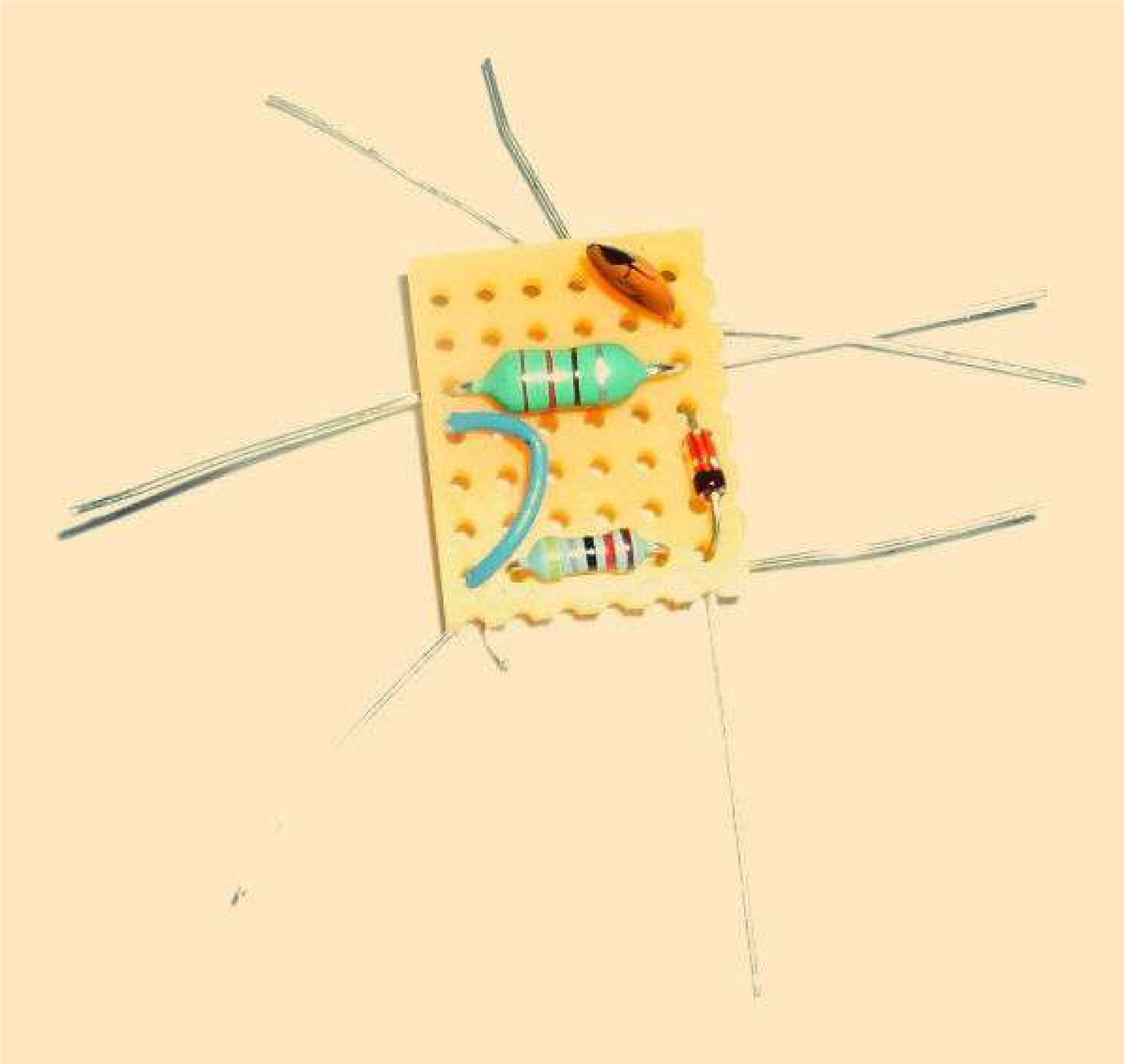

tic tac
Strawberry Fields
FRESHNESS IN 2 CALORIES
24g NET

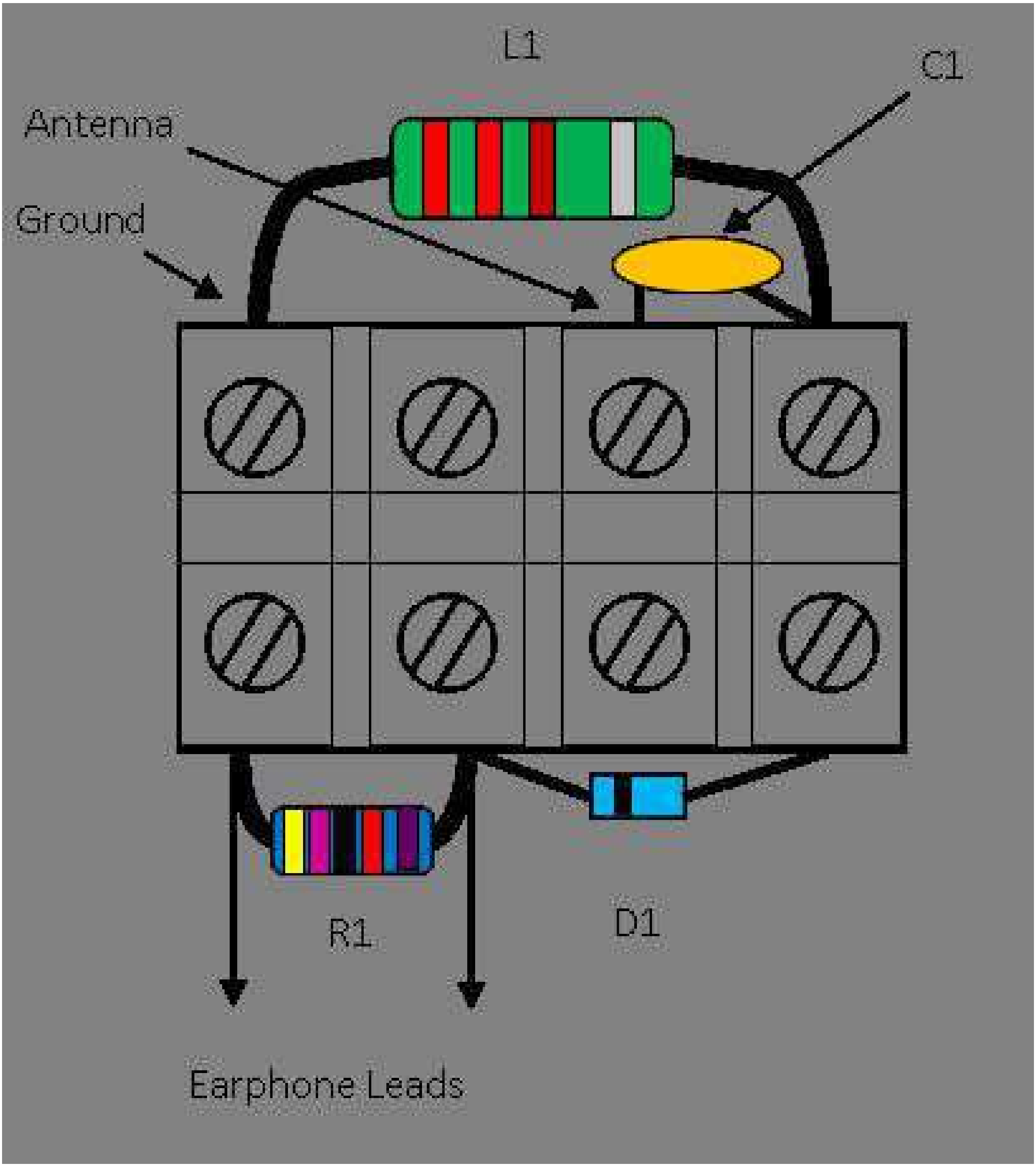

Antenna
C1
D1
L1
R1
Ground

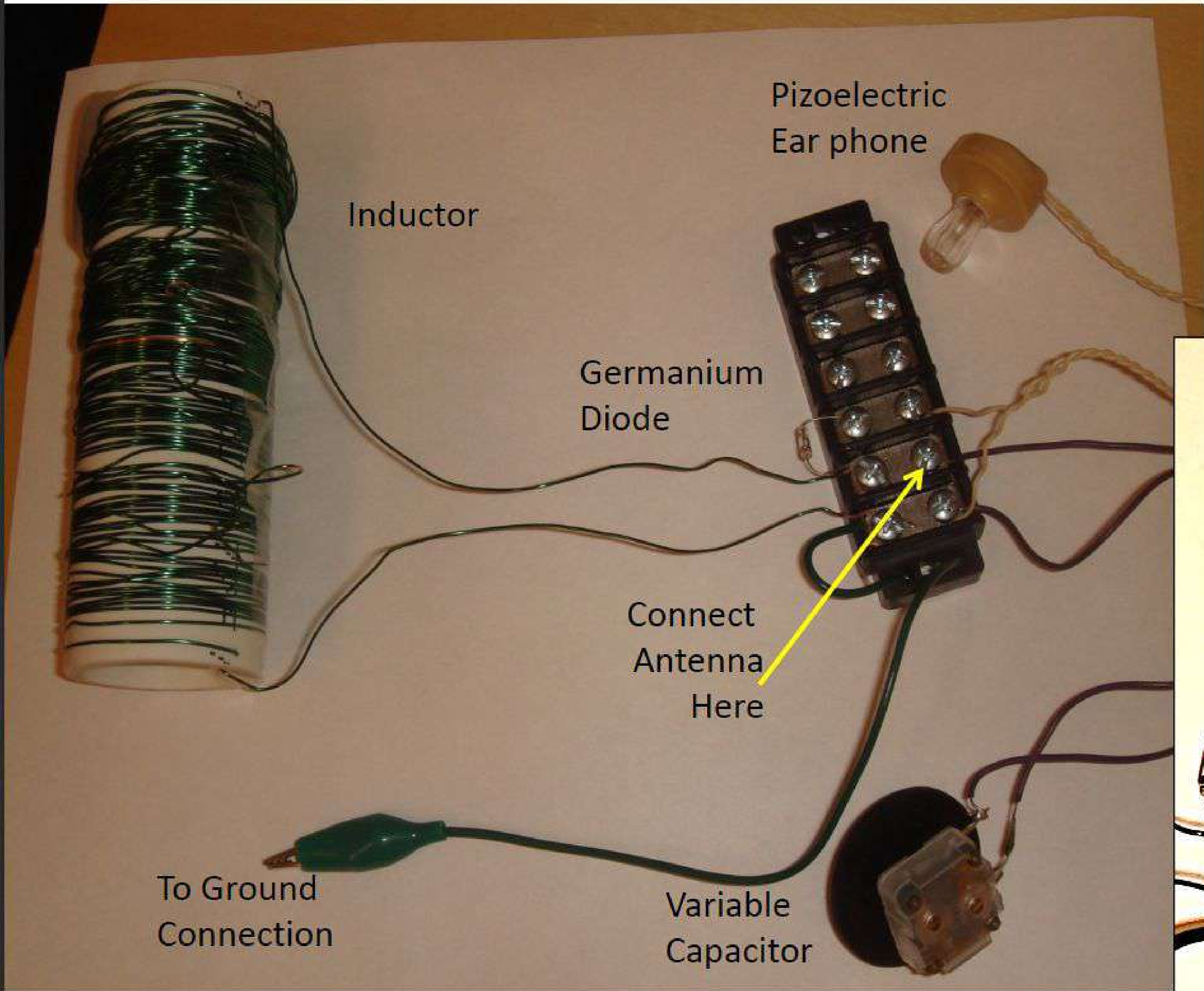


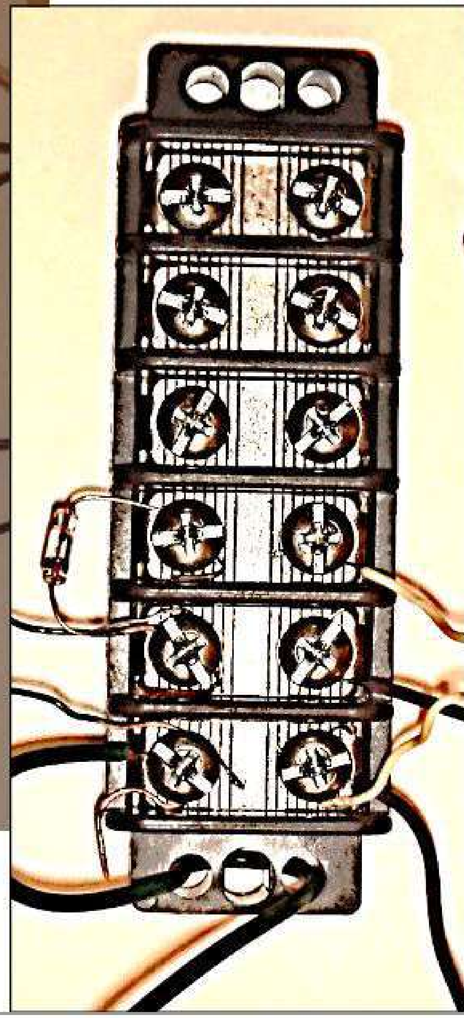
[S
http://www.angelfire.com/electronic2/index1/DmCrystalSet.html]

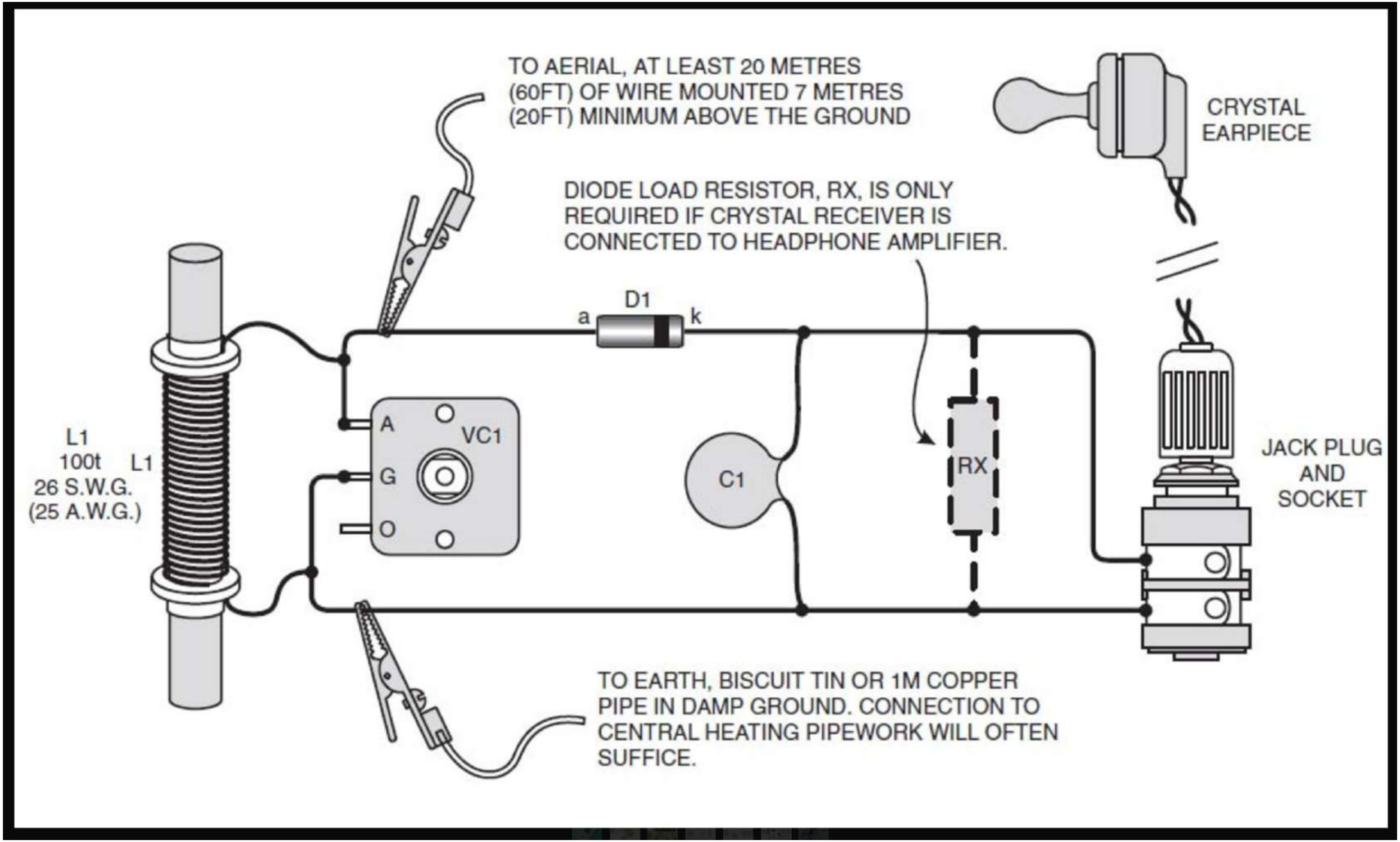

Antenna wire
Tic Tac Radio
Earphone
Antenna lead in
Polyvaricon tuning
capacitor
Ground wire

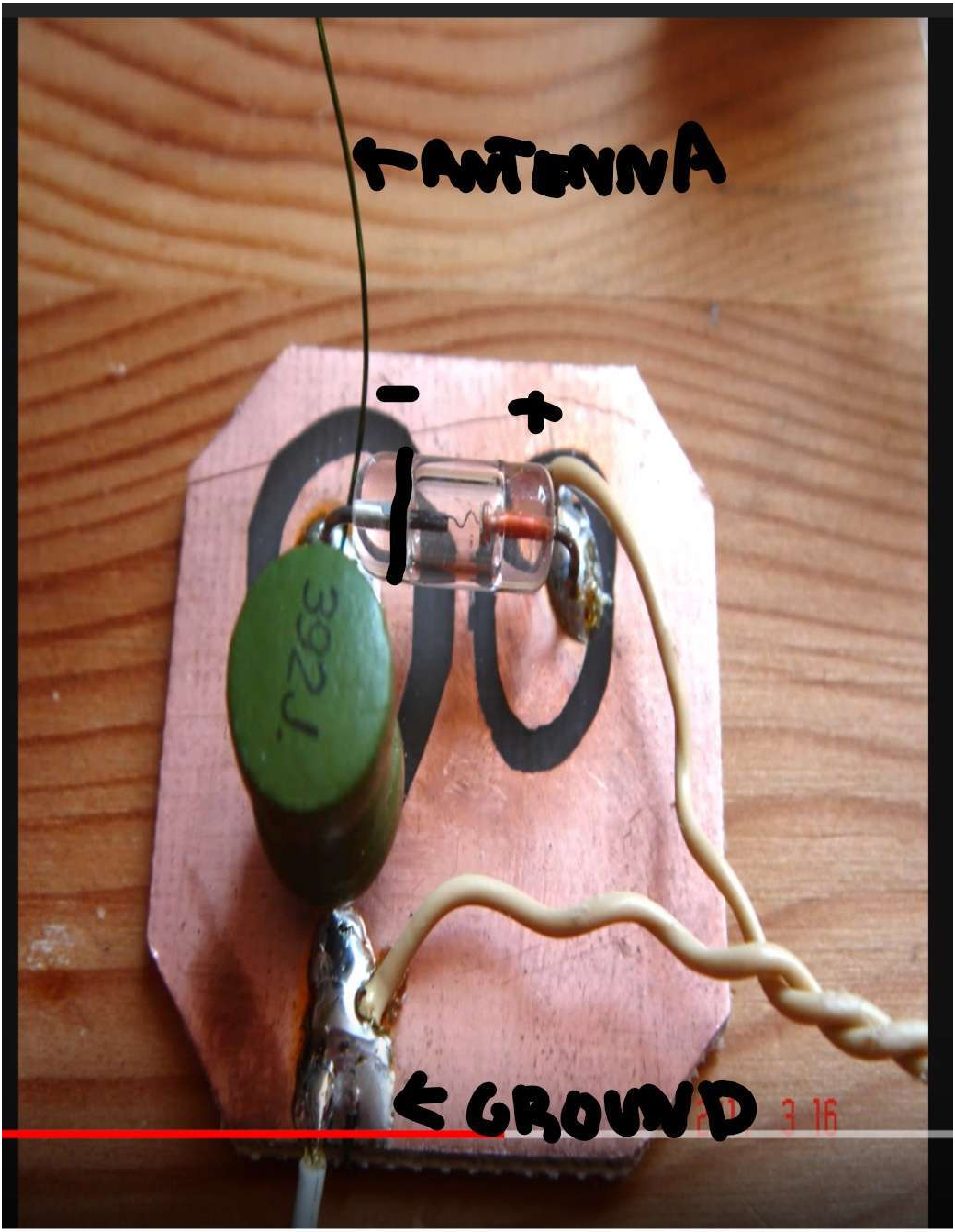


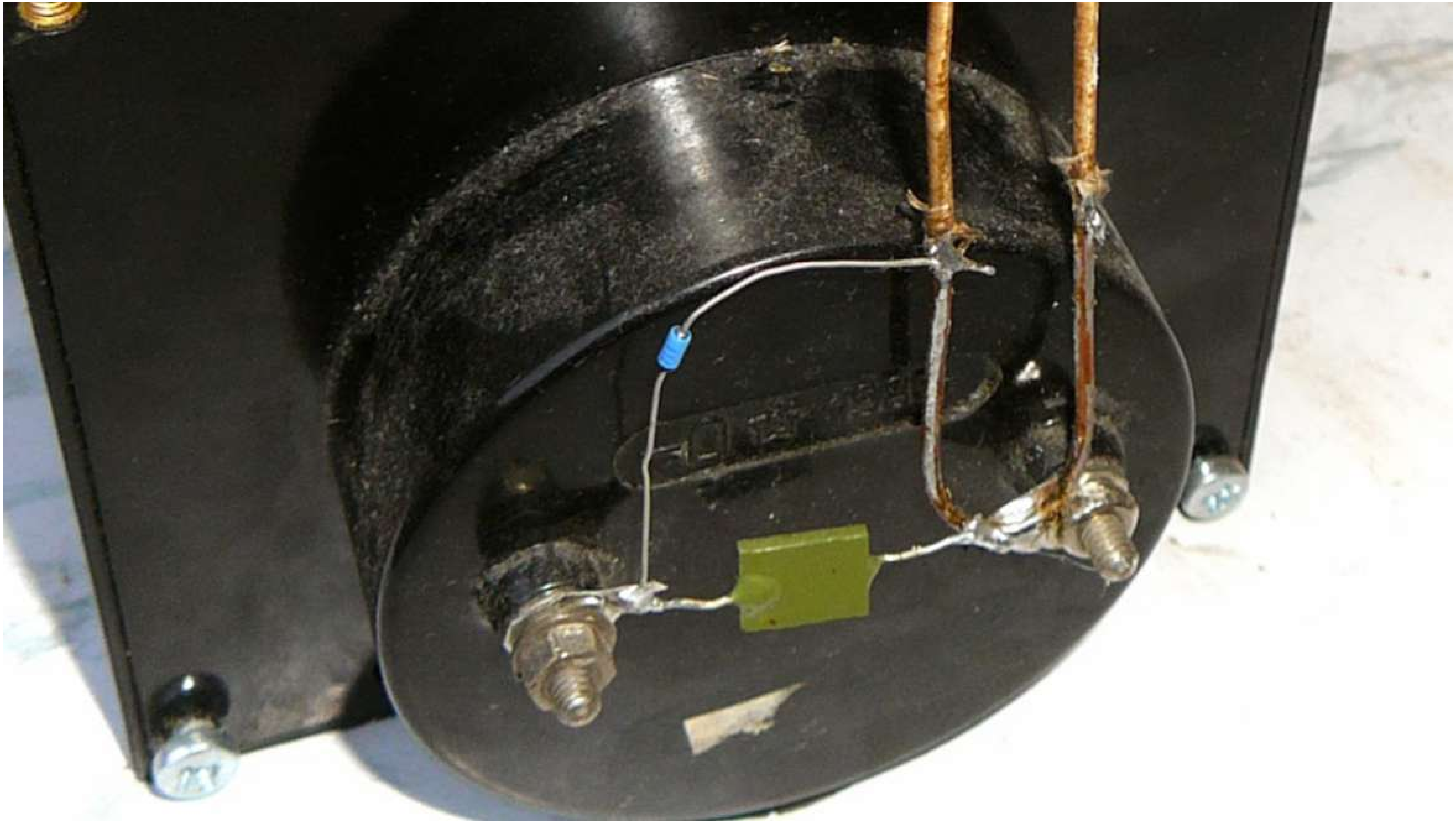

L1
C1
Antenna
Ground
R1
D1
Earphone Leads

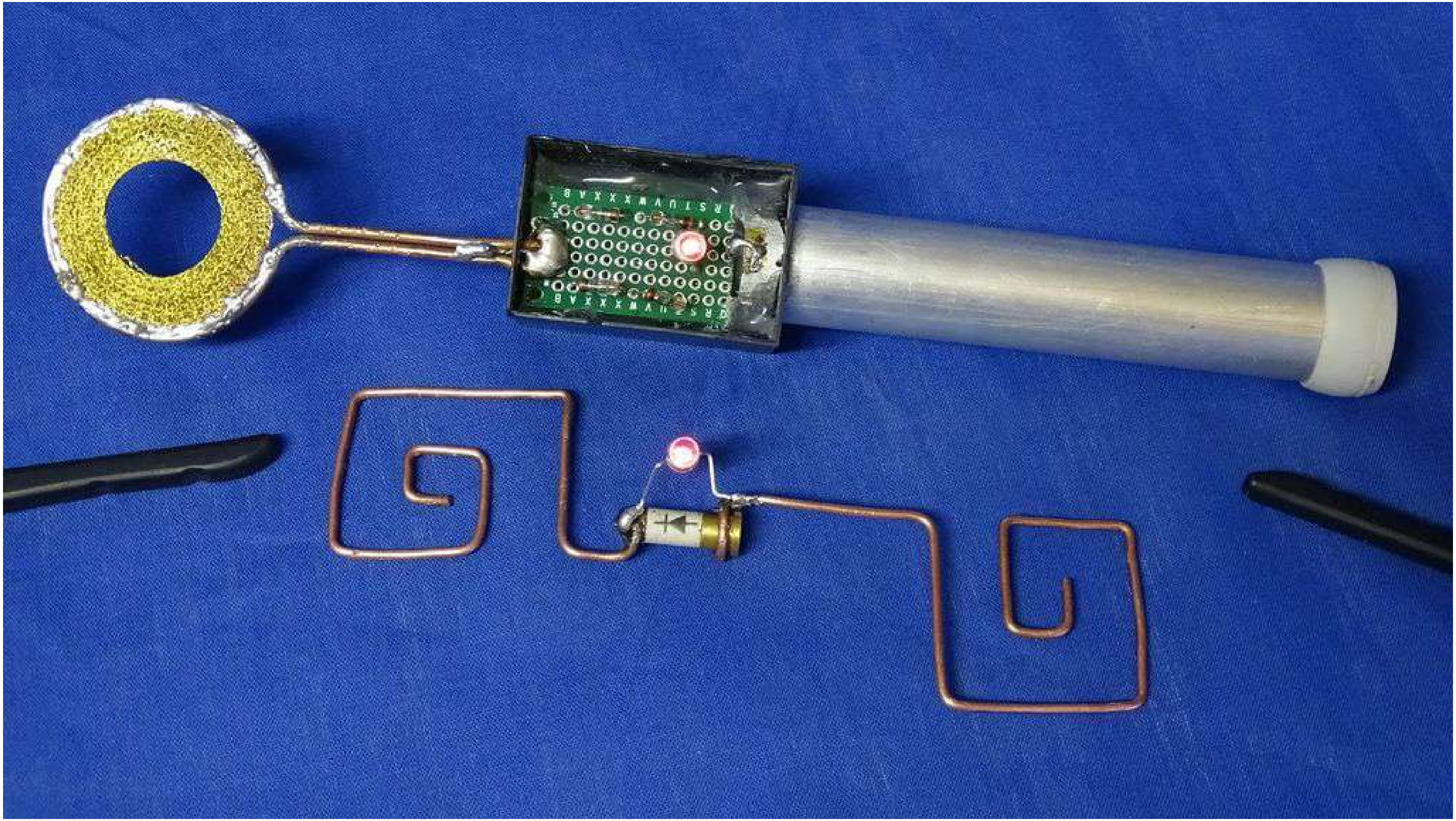

Pizoelectric
Ear phone
Inductor
Germanium
Diode
Connect
Antenna
Here
To Ground
Connection
Variable
Capacitor




TO AERIAL, AT LEAST 20 METRES
(60FT) OF WIRE MOUNTED 7 METRES
(20FT) MINIMUM ABOVE THE GROUND
CRYSTAL
EARPIECE
DIODE LOAD RESISTOR, RX, IS ONLY
REQUIRED IF CRYSTAL RECEIVER IS
CONNECTED TO HEADPHONE AMPLIFIER.
D1
a
k
L1
100t
L1
26 S.W.G.
(25 A.W.G.)
A
VC1
G
O
C1
RX
JACK PLUG
AND
SOCKET
TO EARTH, BISCUIT TIN OR 1M COPPER
PIPE IN DAMP GROUND. CONNECTION TO
CENTRAL HEATING PIPEWORK WILL OFTEN
SUFFICE.


ANTENNA
-
+
392J
GROUND



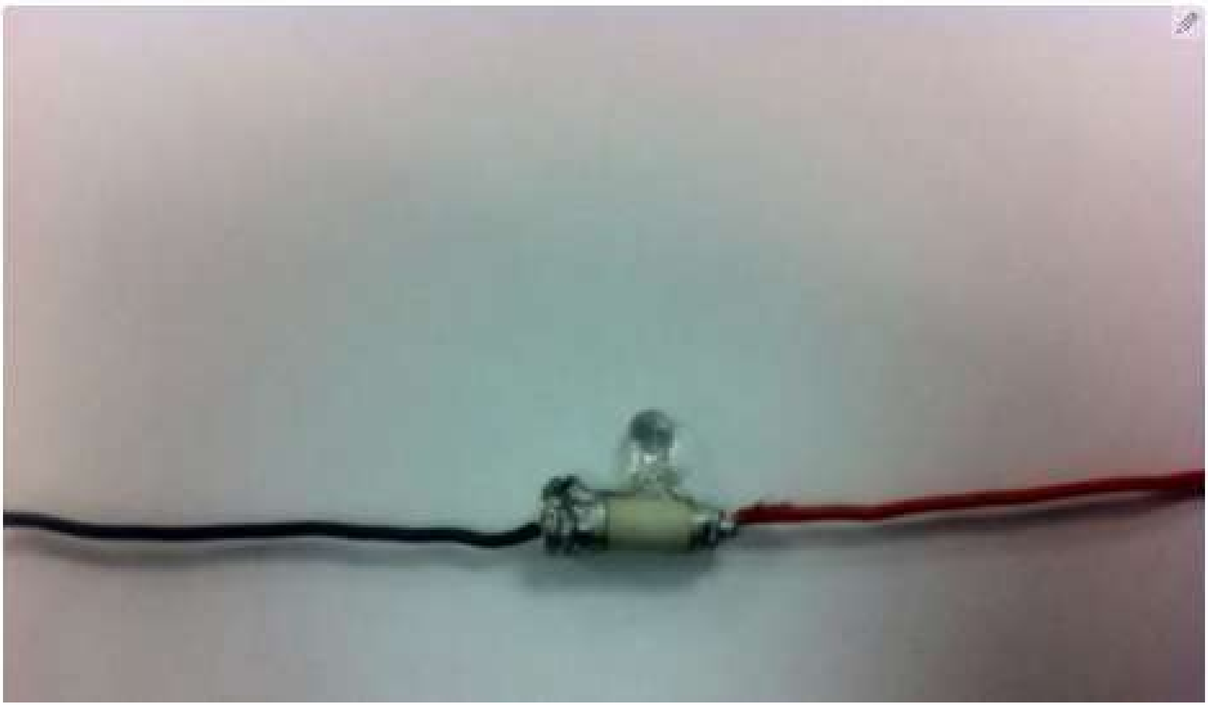


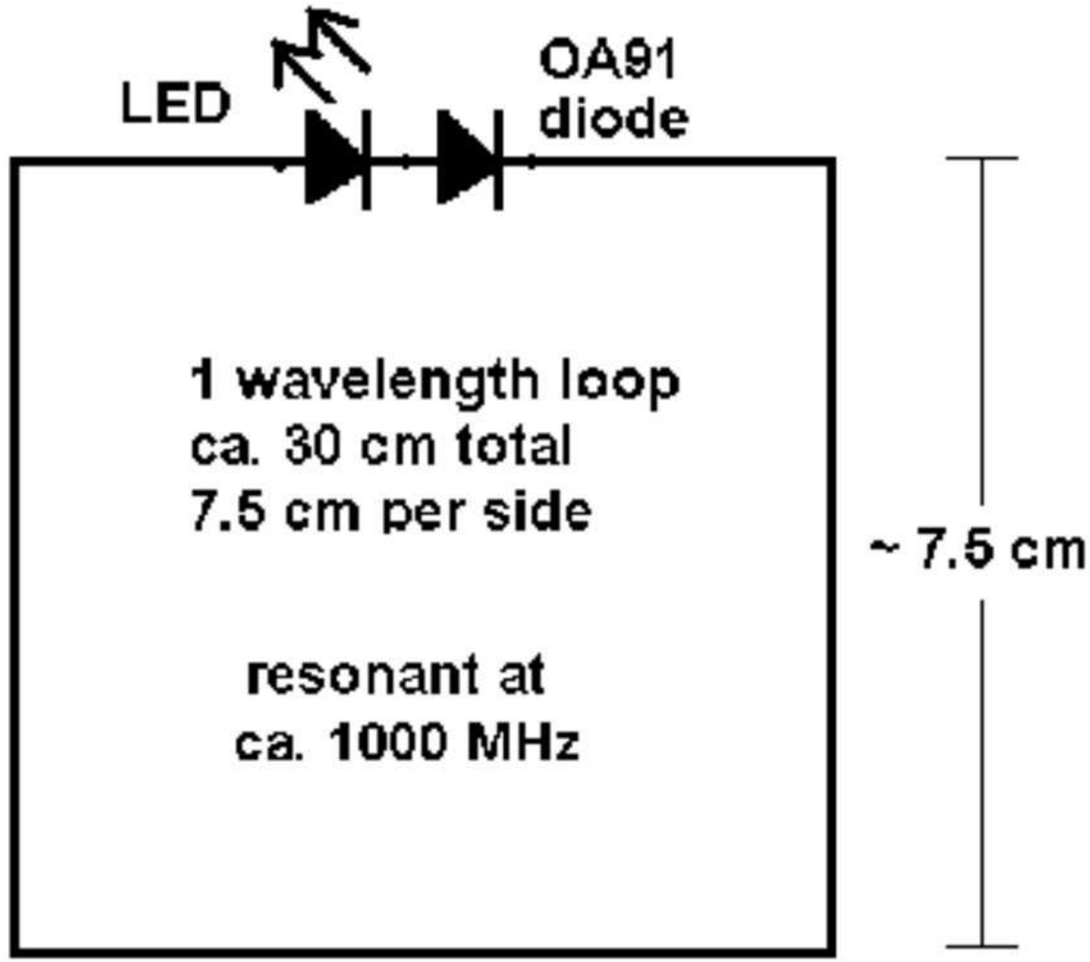
Step 1: LED+RF Diode

First Solder the led parallel to the Rf diode

Add Tip   Ask Question   Comment   Download

Step 2: RF Diode+ LED+ Wires

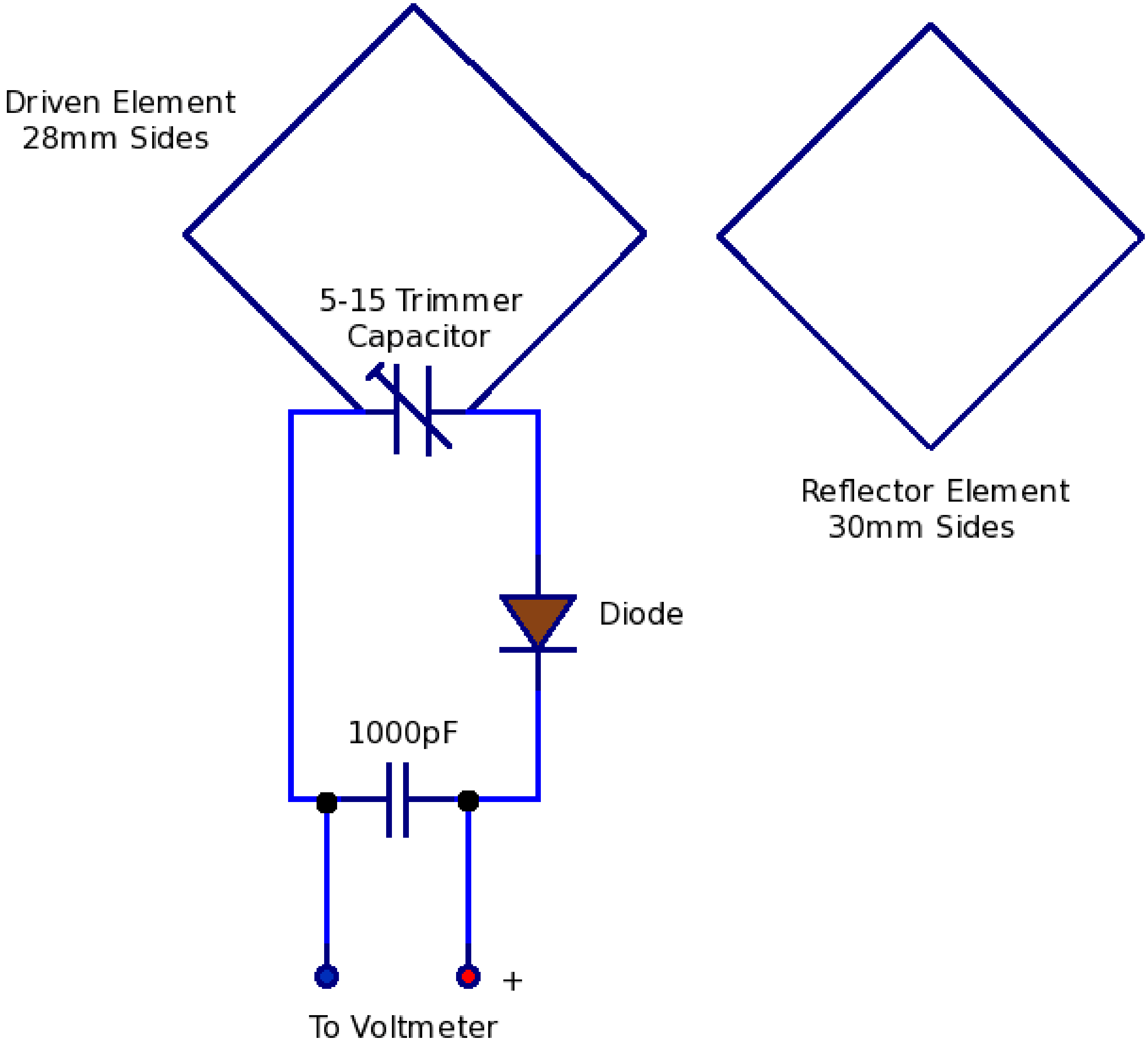


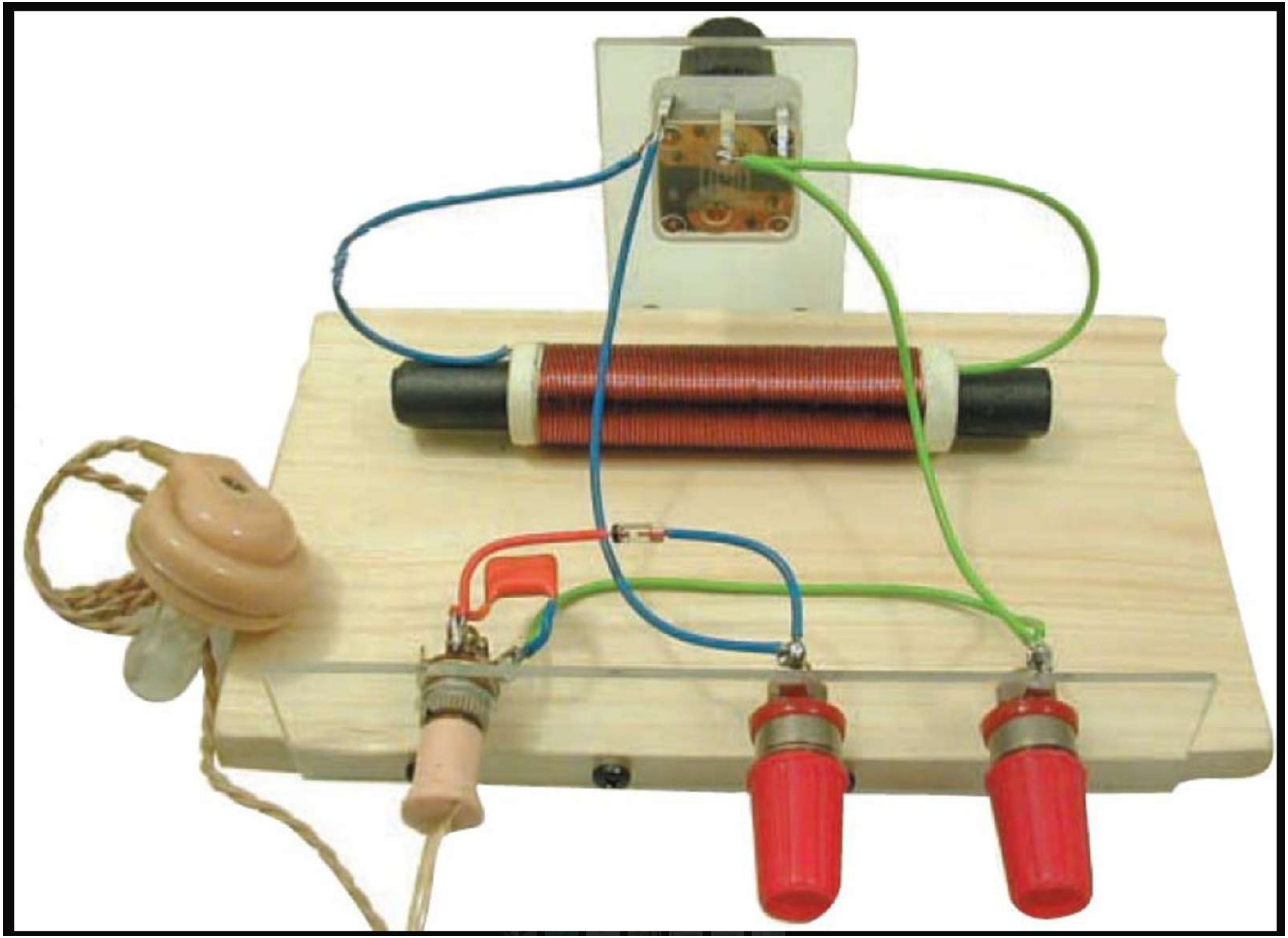

LED
OA91
diode
1 wavelength loop
ca. 30 cm total
7.5 cm per side
resonant at
ca. 1000 MHz
~ 7.5 cm

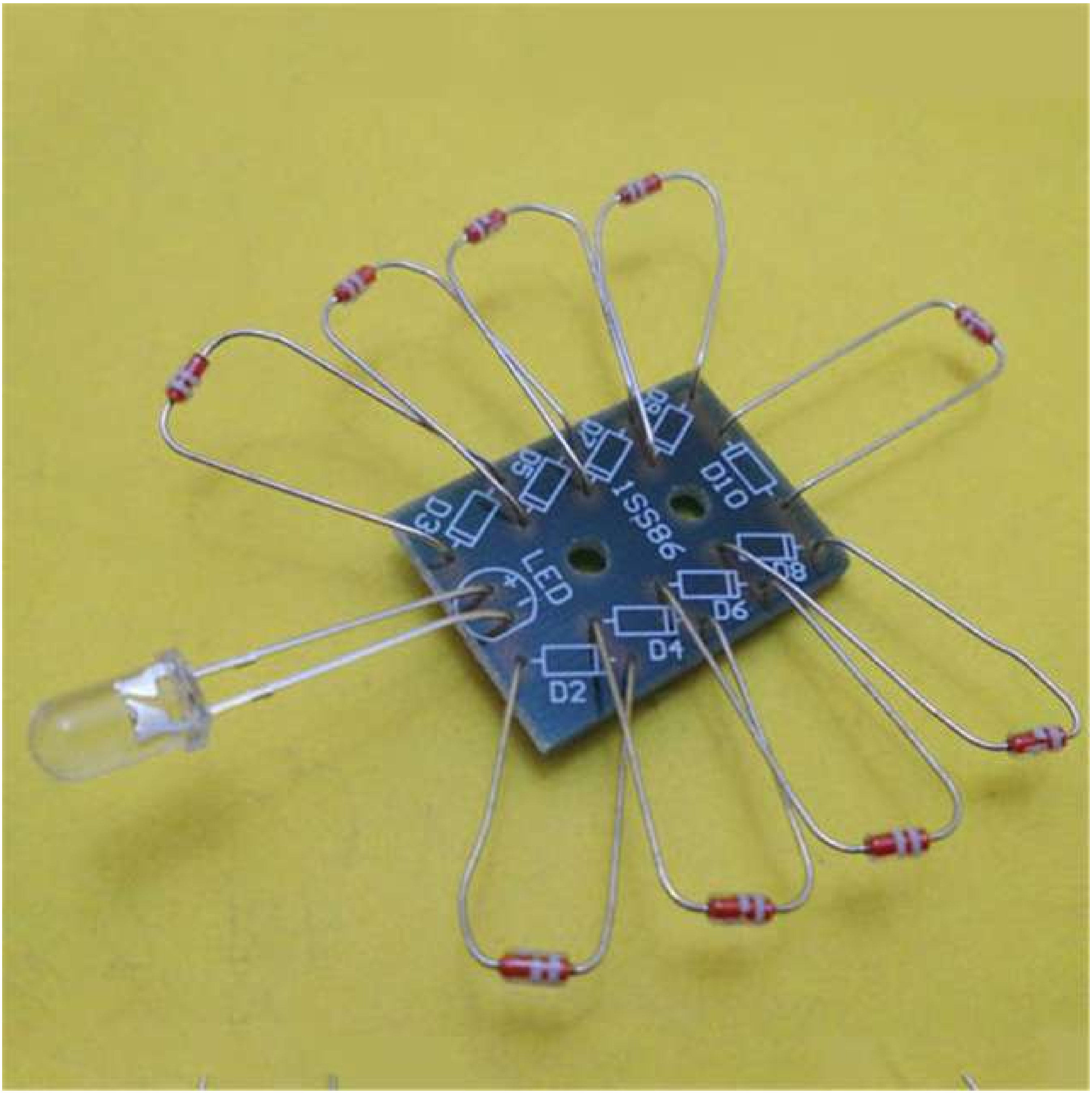

IN23B
0:56 / 1:49
ΕΛΕΜΑΝ

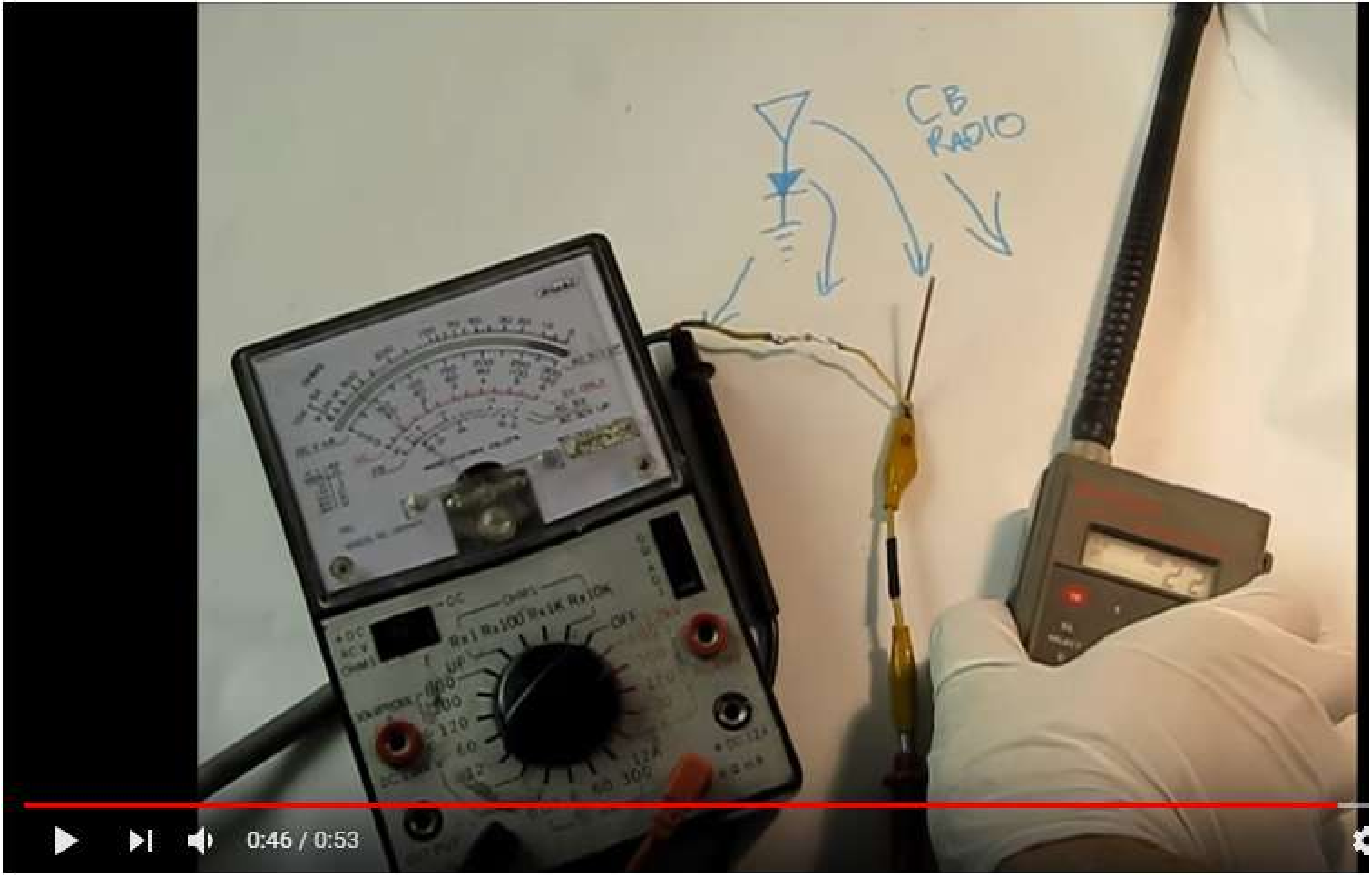

COM LOGIC


Hz
NPN
E B C E
PNP
E B C E
LOGIC
200
2K
2M

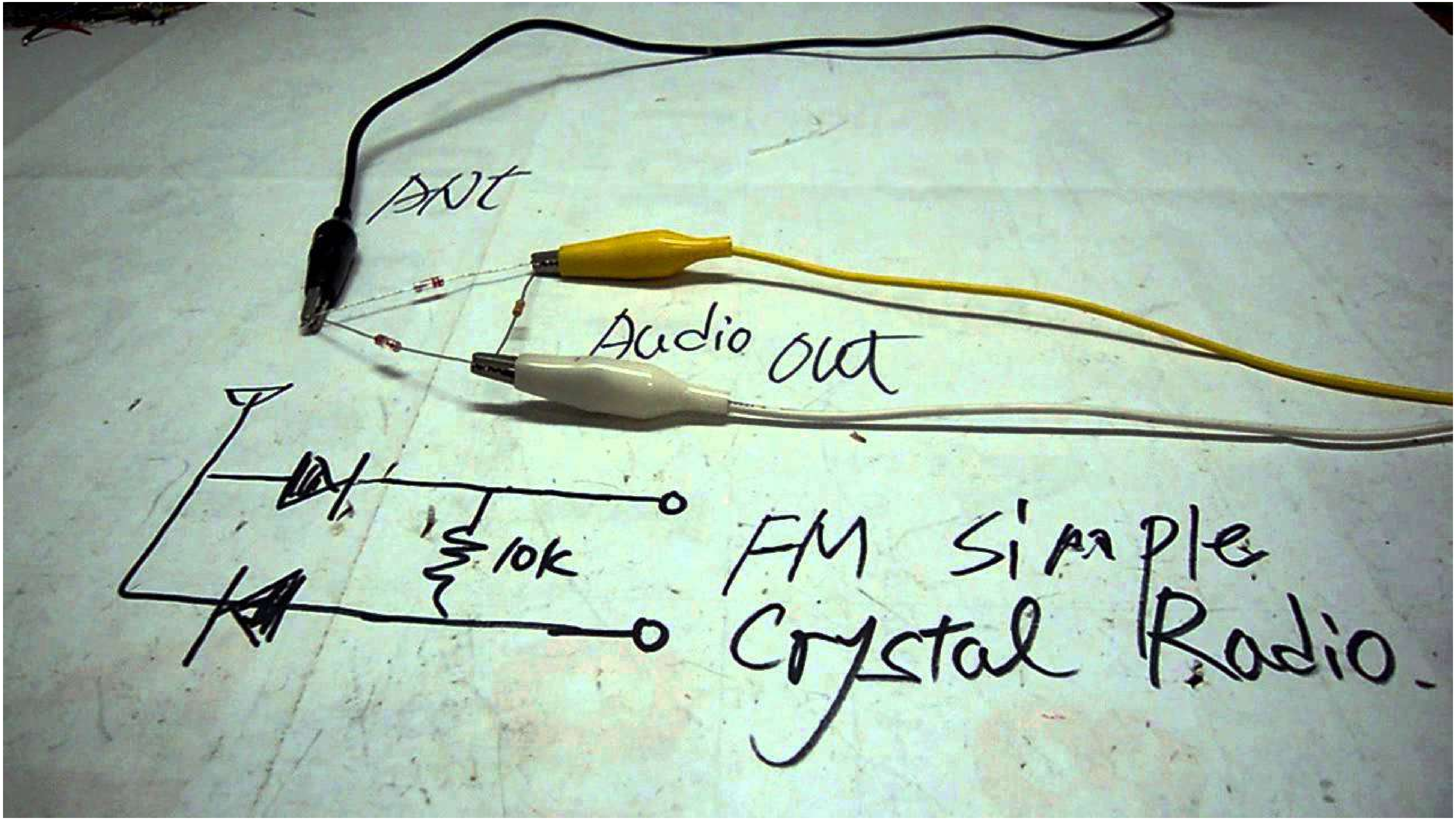

Driven Element
28mm Sides
5-15 Trimmer
Capacitor
Reflector Element
30mm Sides
Diode
1000pF
+
To Voltmeter

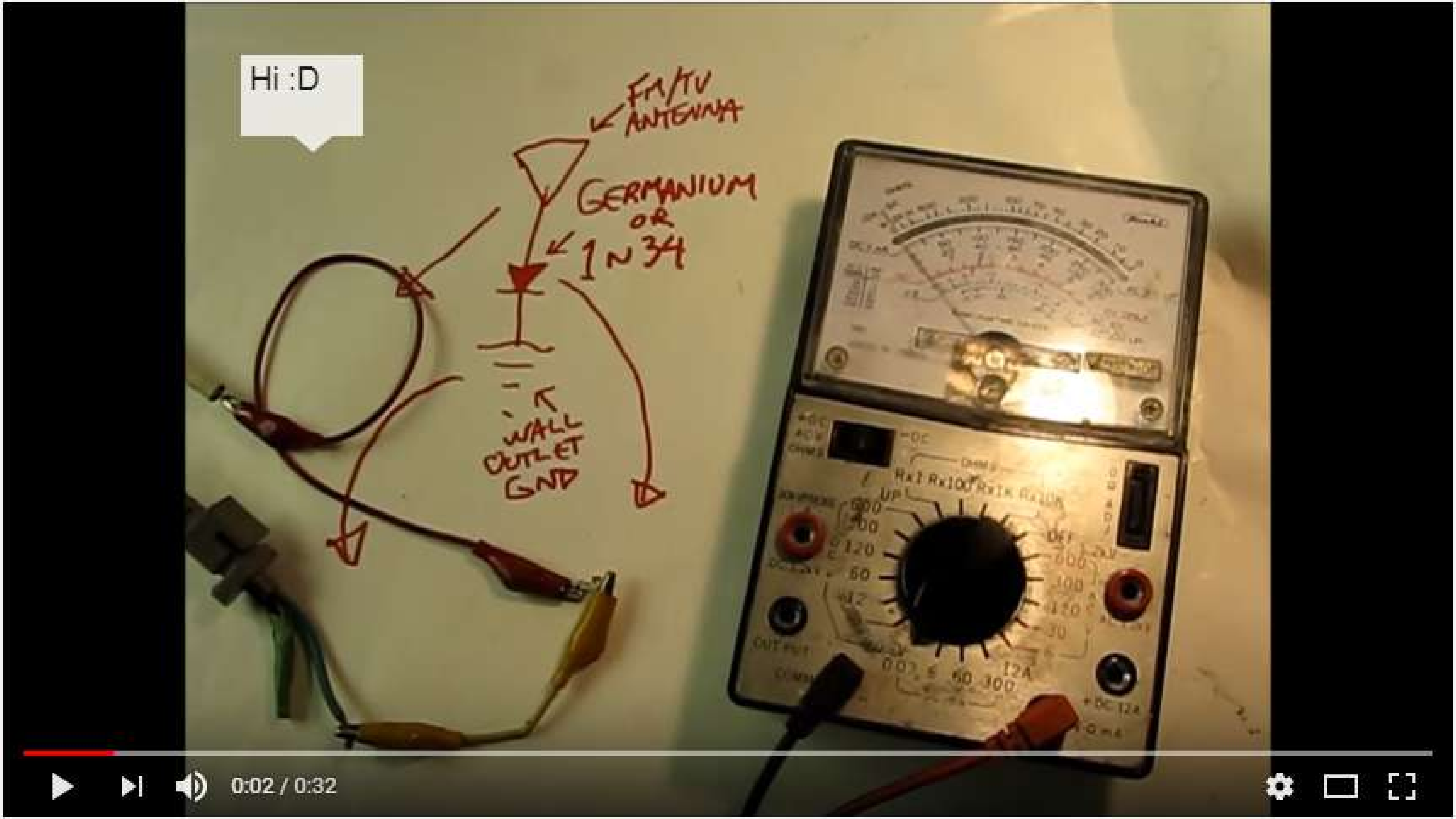



D3
D5
1SS86
D10
LED
D8
D6
D4
D2

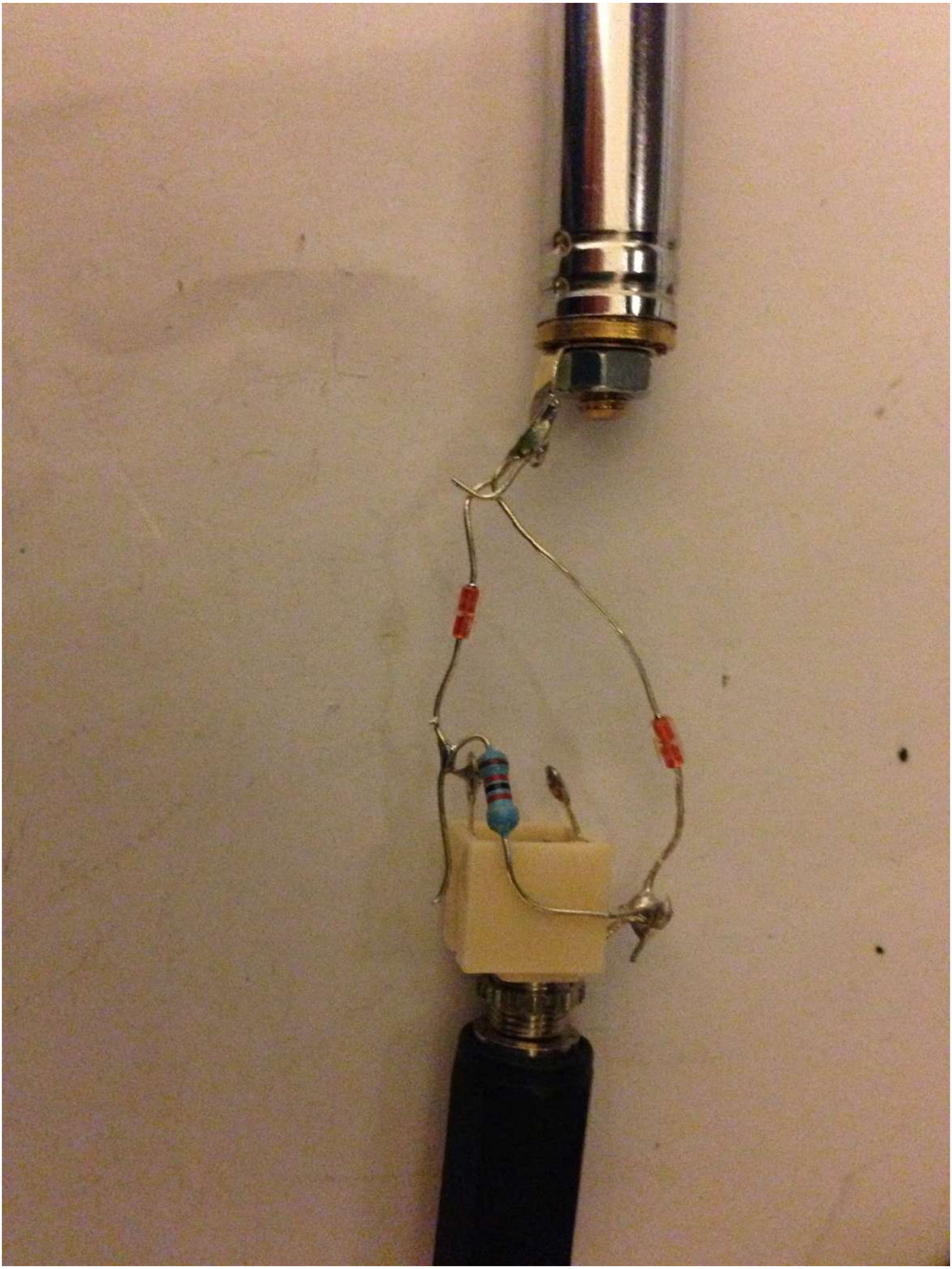


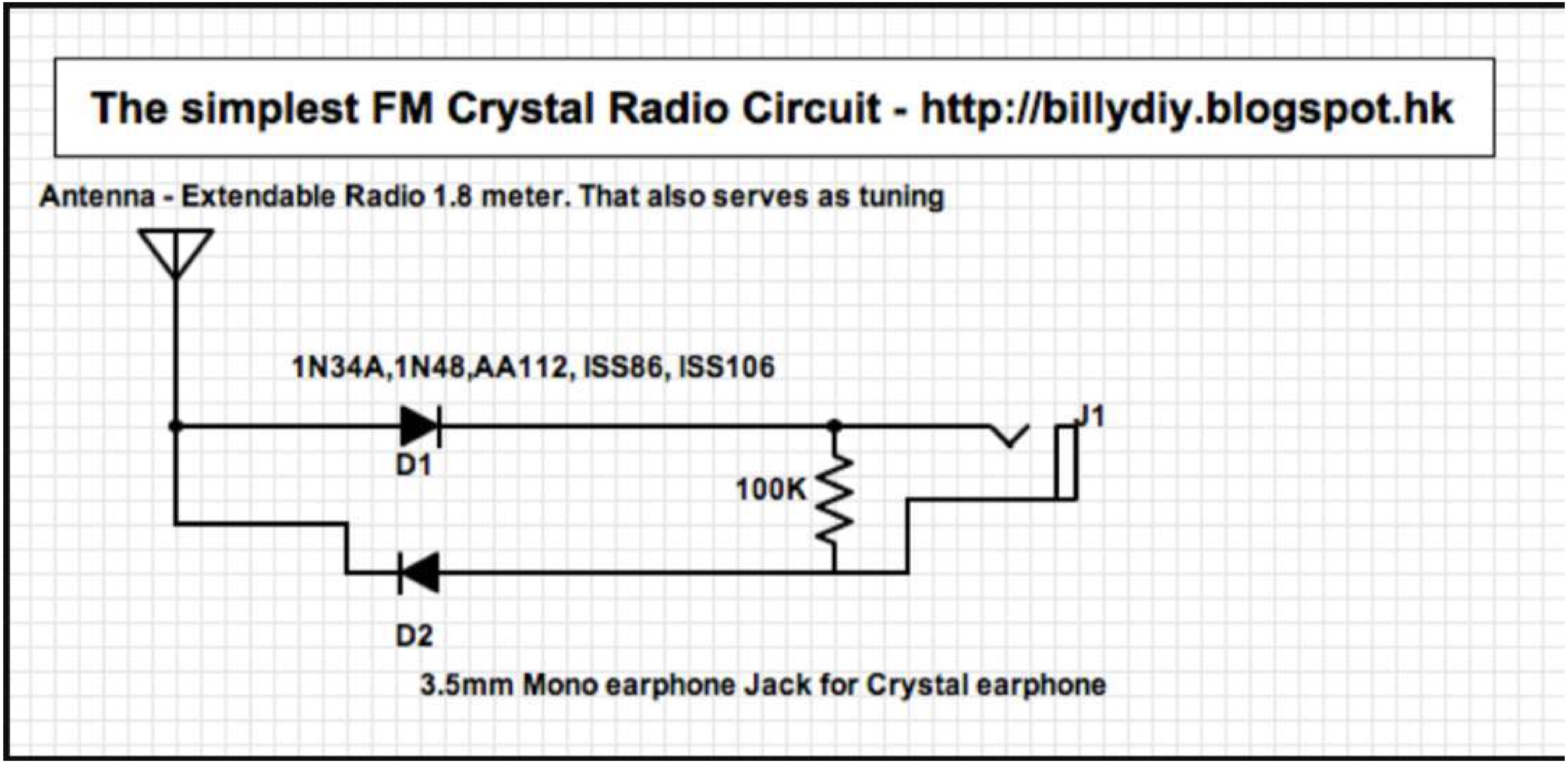
DIY Wireless Power - Part 2: Simple Wireless Power Transmission! (CB)


ANt
Audio out
10K
FM simple
Crystal Radio



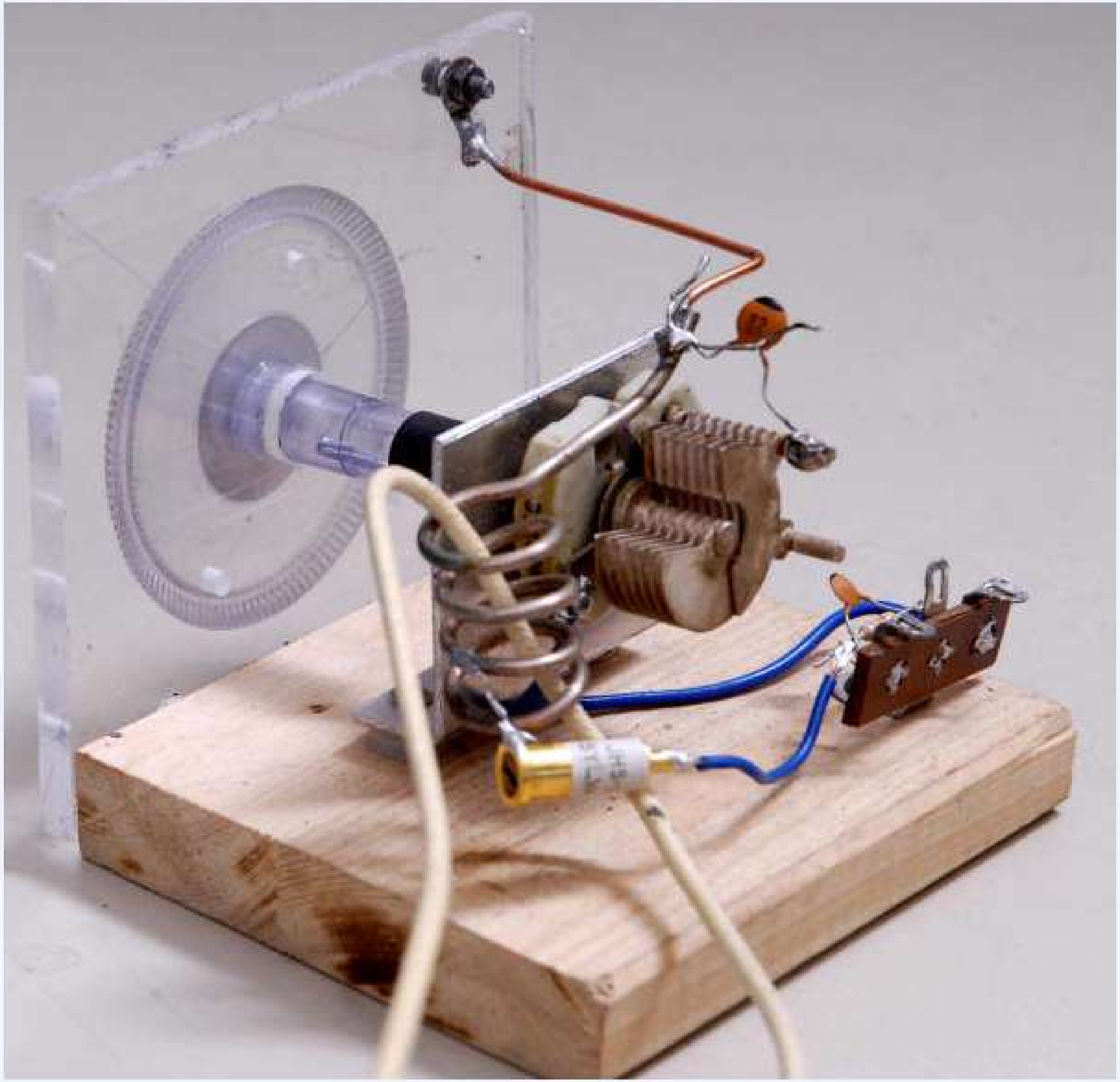
DIY Wireless Power - Part 1: TV/FM Antenna,1N34/Germanium Diode



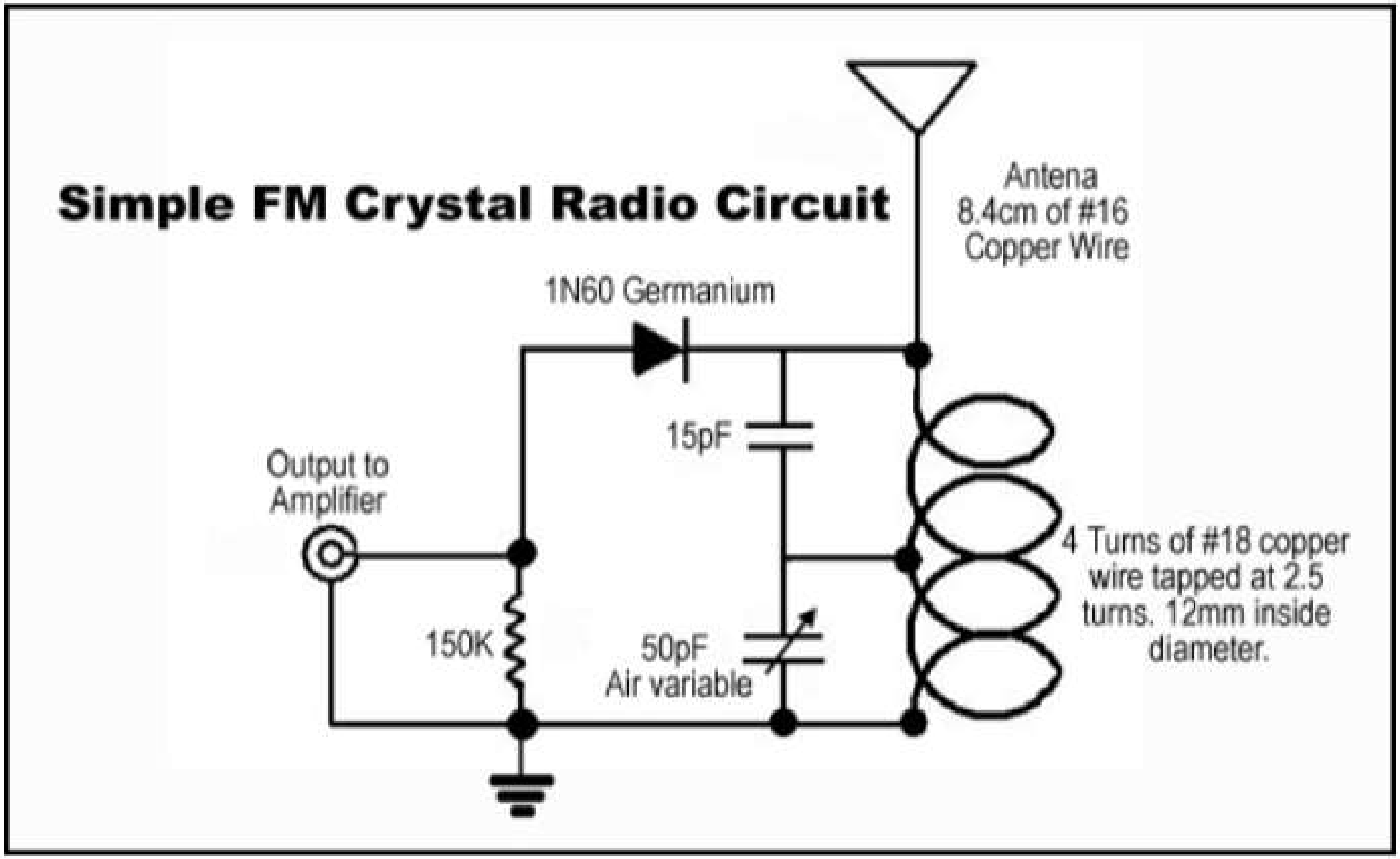

The simplest FM Crystal Radio Circuit - http://billydiy.blogspot.hk
Antenna - Extendable Radio 1.8 meter. That also serves as tuning
1N34A,1N48,AA112, ISS86, ISS106
J1
D1
100K
D2
3.5mm Mono earphone Jack for Crystal earphone

Simple crystal receiver for FM

Carlo Bramanti

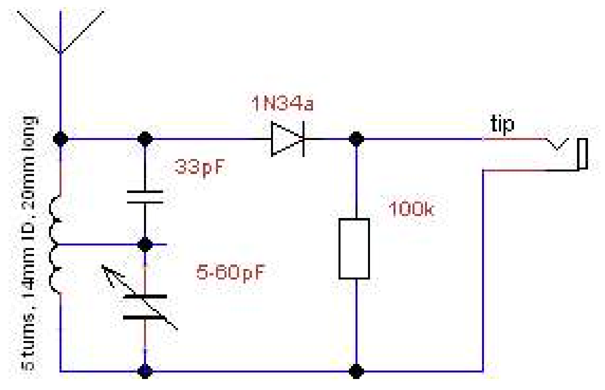


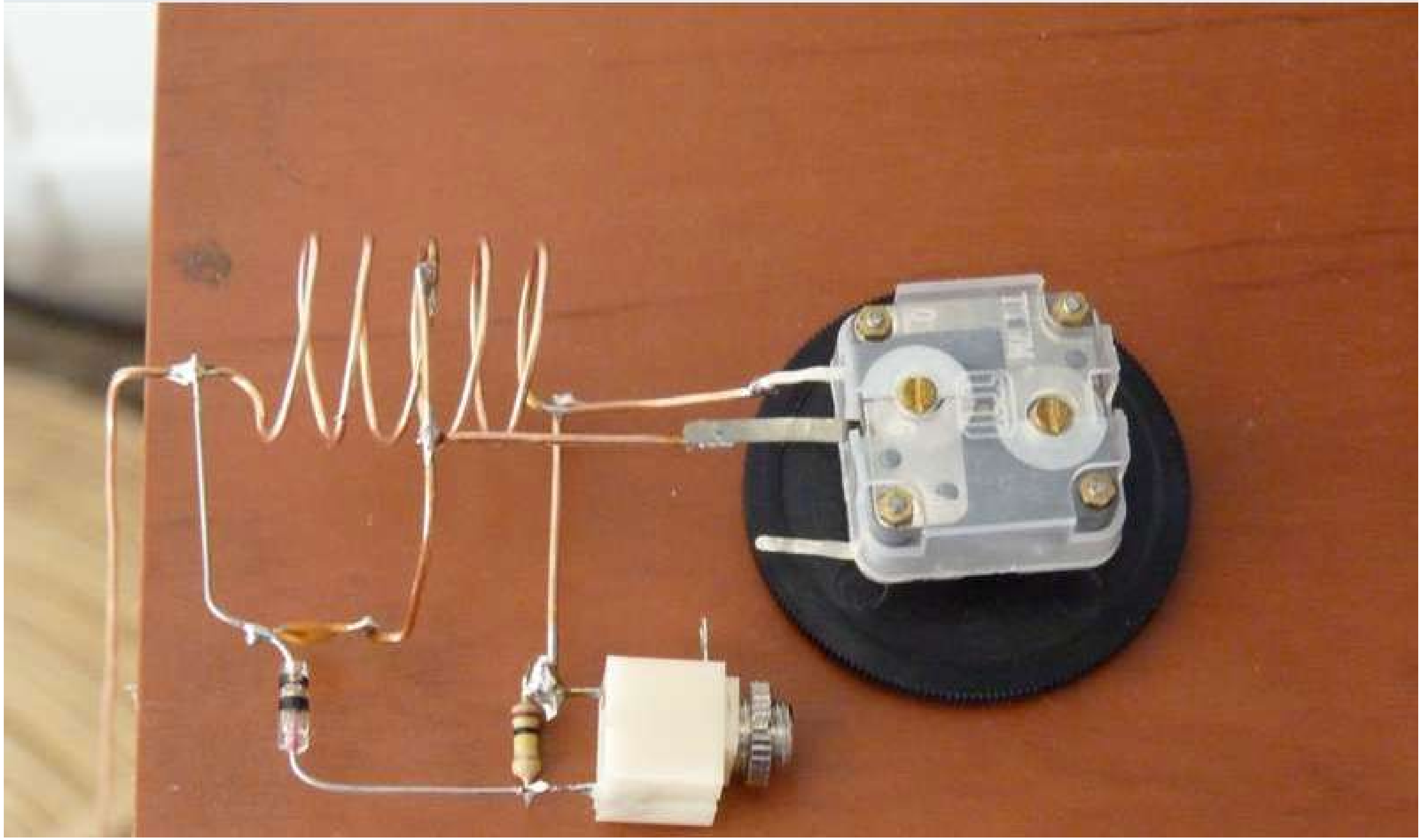
FM Crystal Radio Circuit

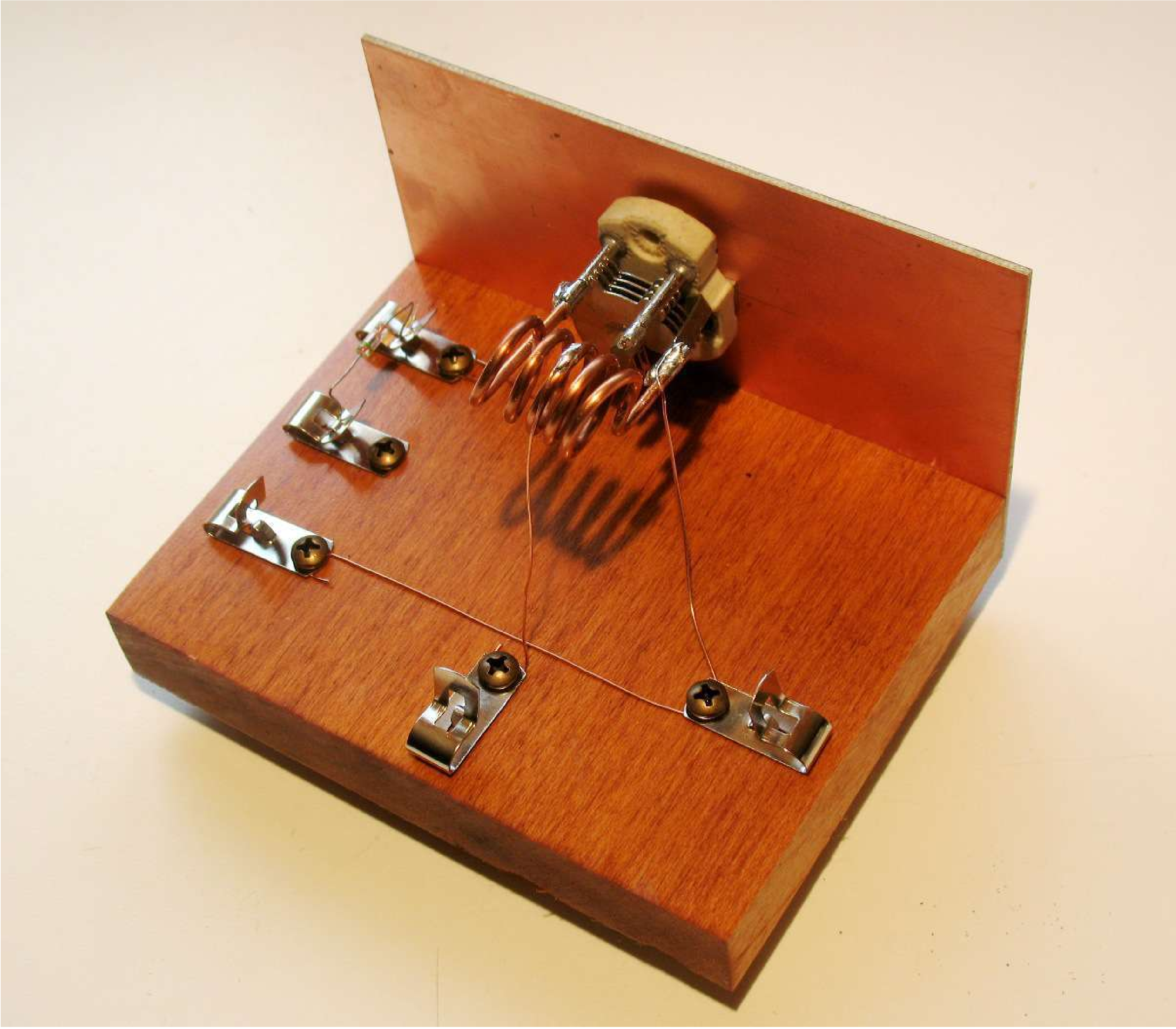


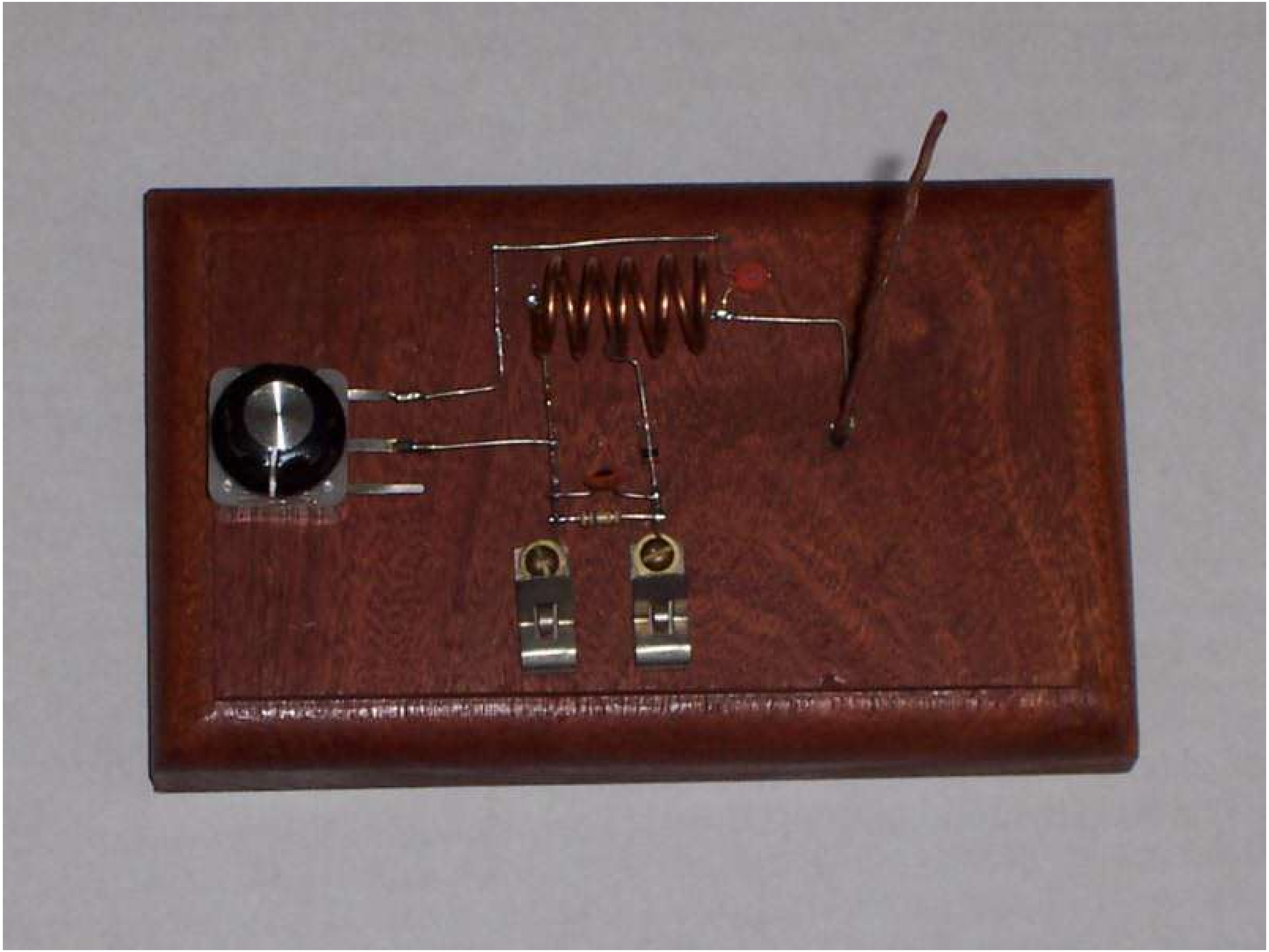
Parts List (some of these parts you can buy from our online store):

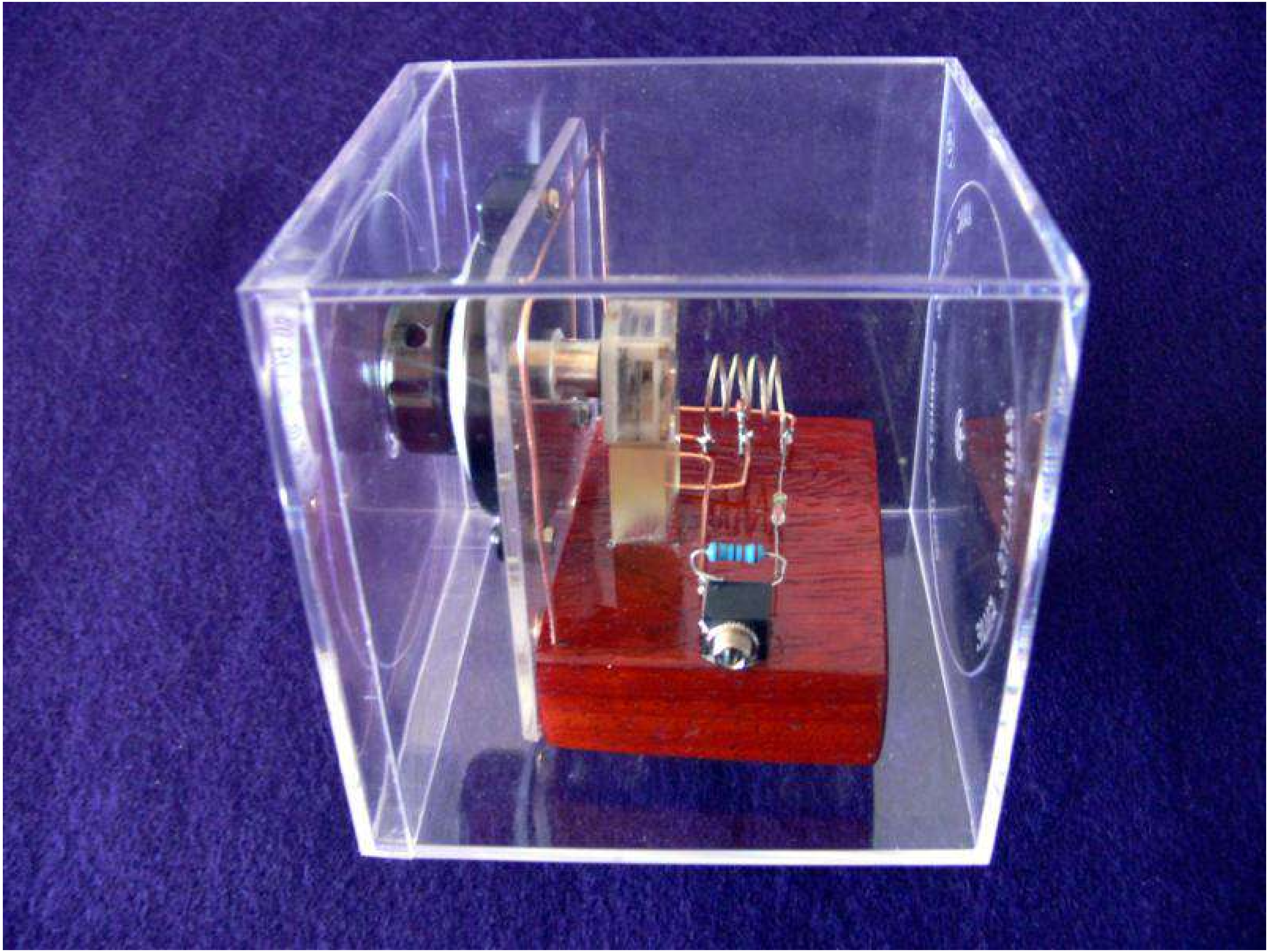
- 1N60 Germanium Diode
- 15pF Ceramic Capacitor
- 50pF Variable Capacitor
- 150K Ohm Resistor
- #16 & #18 Copper wires


1N34a
tip
33pF
100k
5-60pF
5 turns, 14mm ID, 20mm long



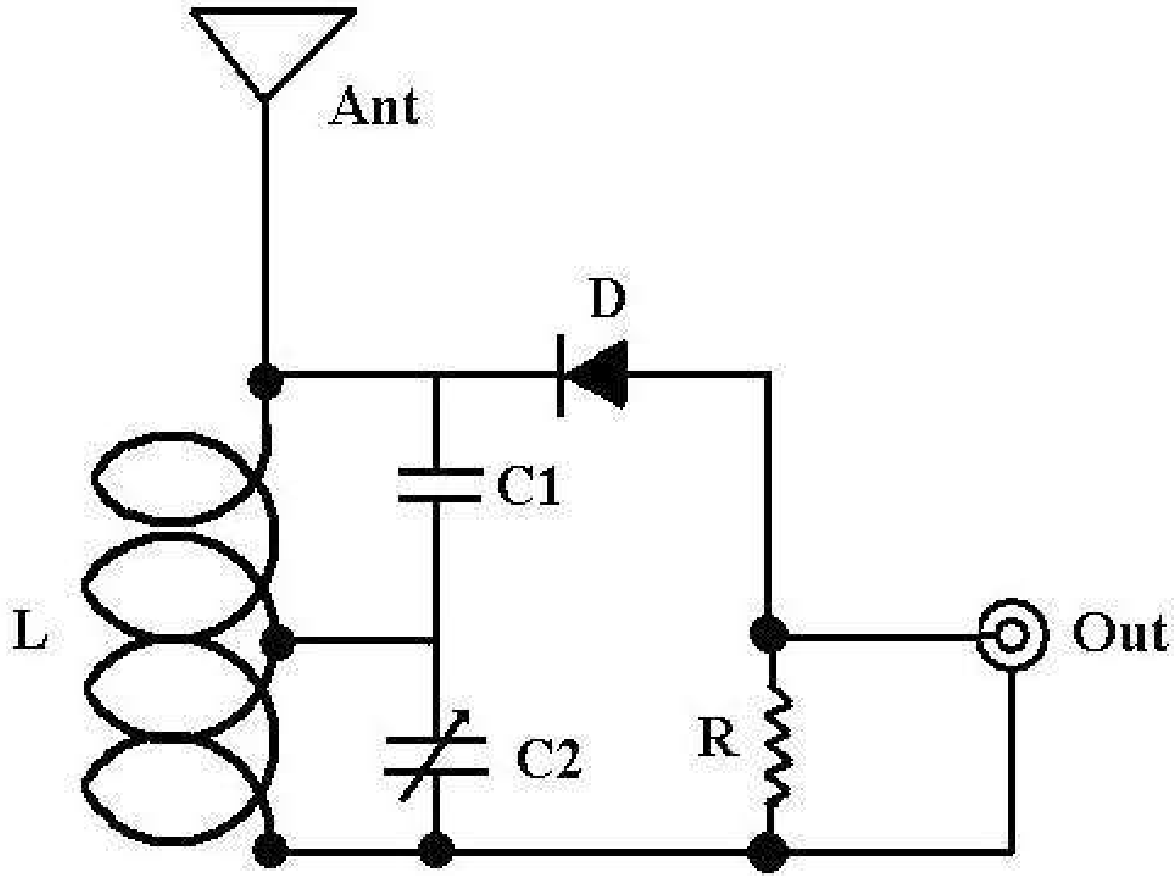


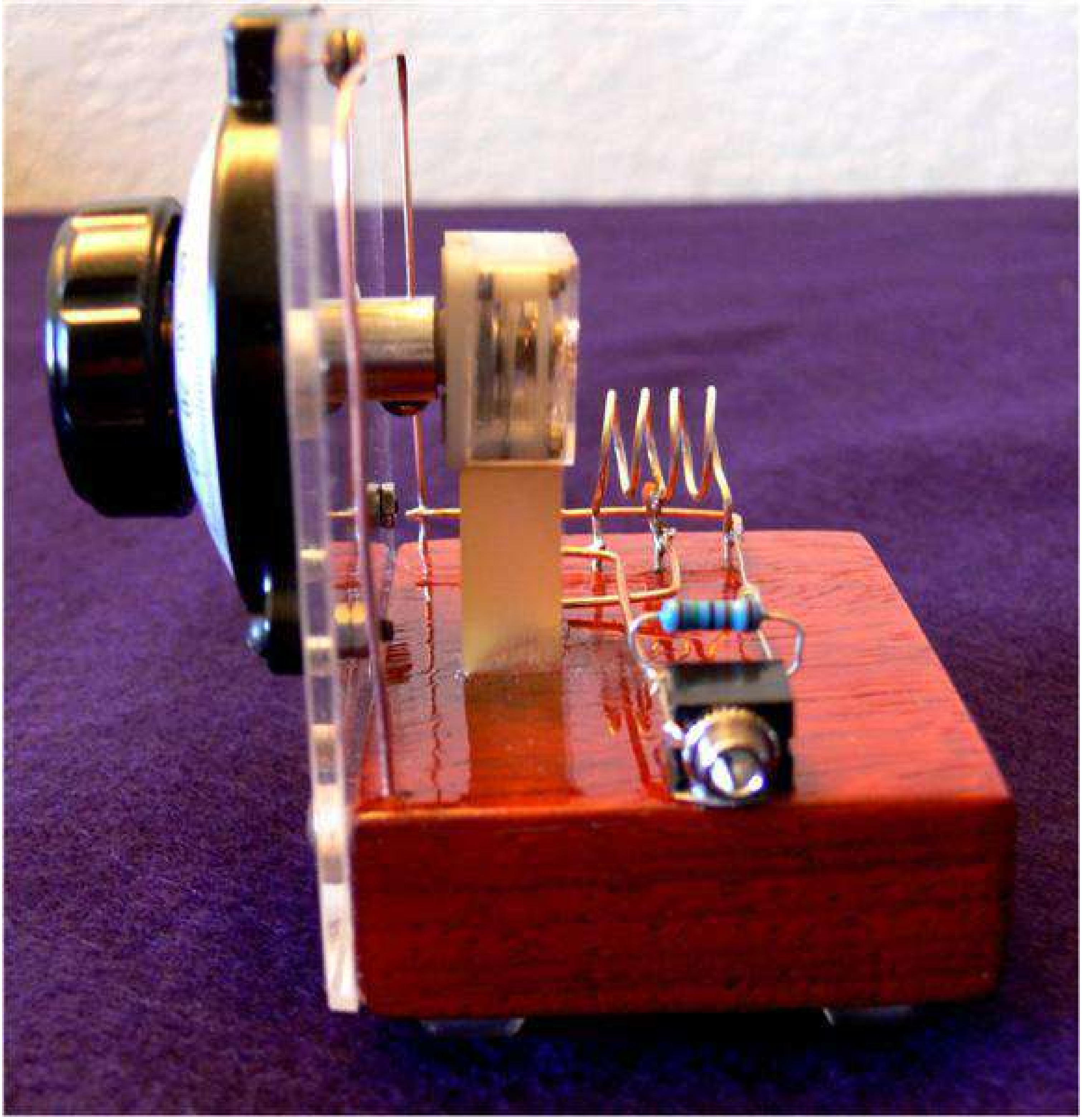


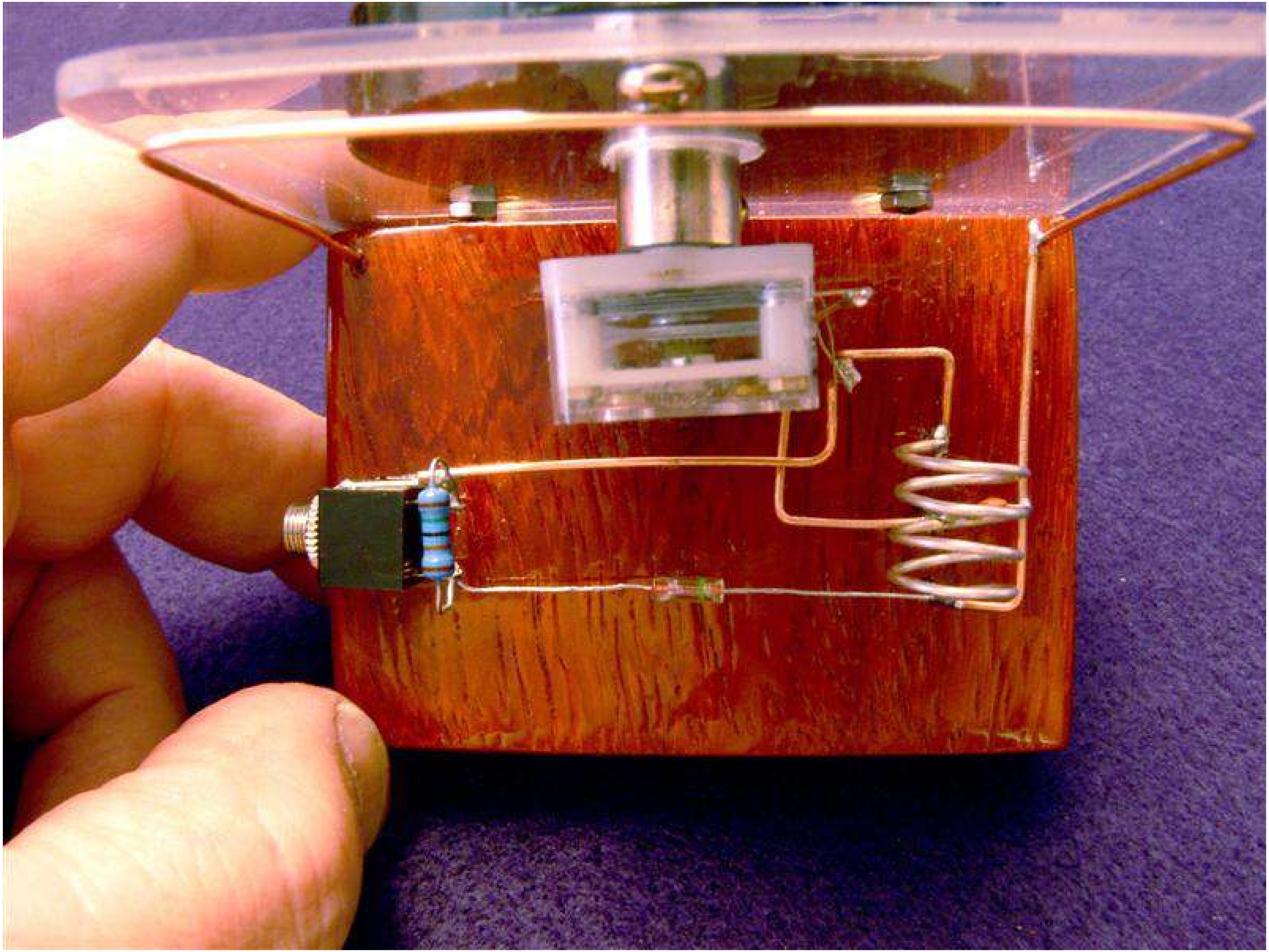


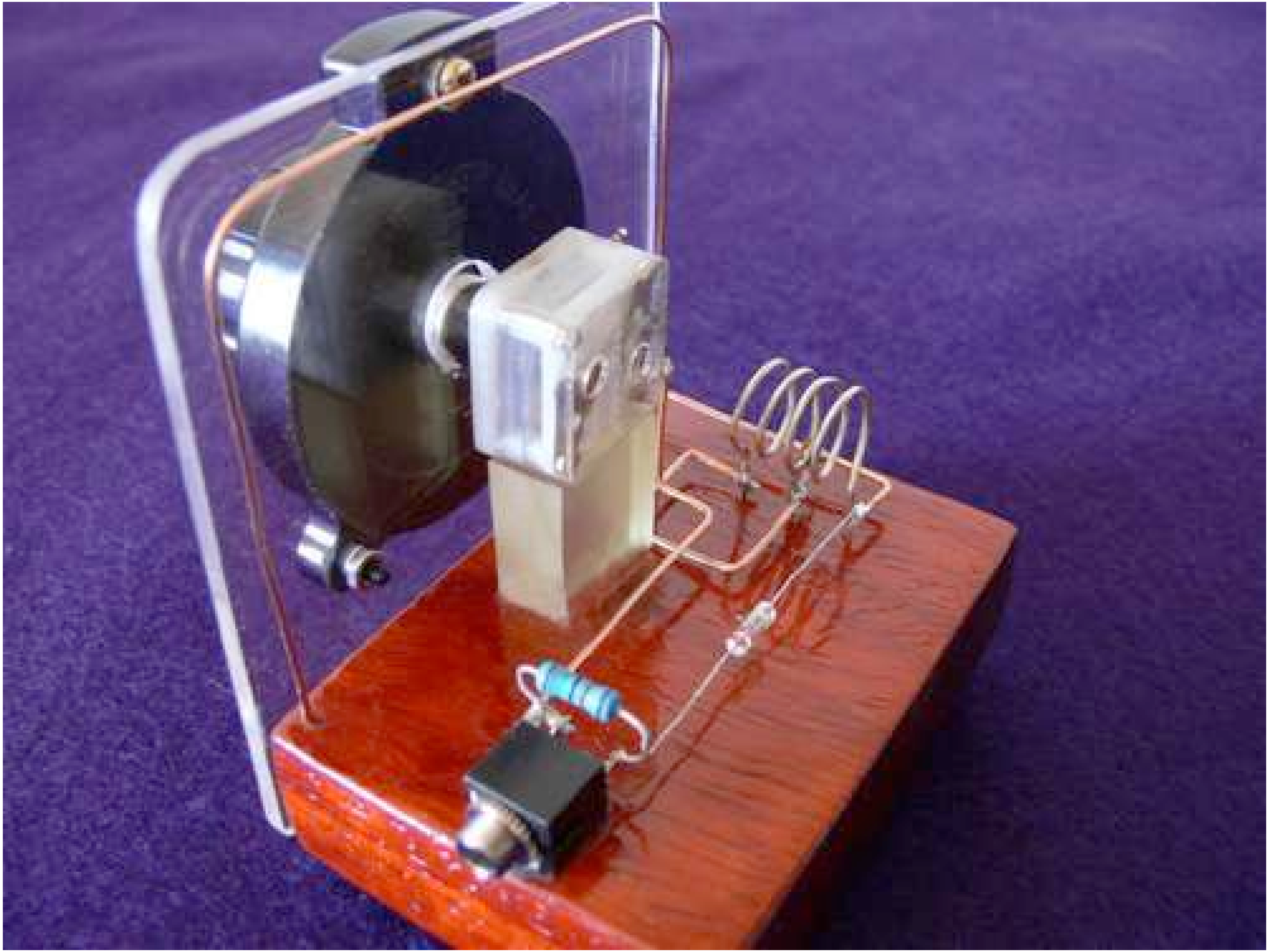
L - 4 turns #18 copper or silver wire, 12mm inside diameter, tapped at 2.5 turns
Ant - 7 inches of #18 bare copper wire
C1 - 18 pf ceramic capacitor
C2 - 50 pf air variable capacitor
D - 1N34 diode or rock crystal
R - 150K resistor

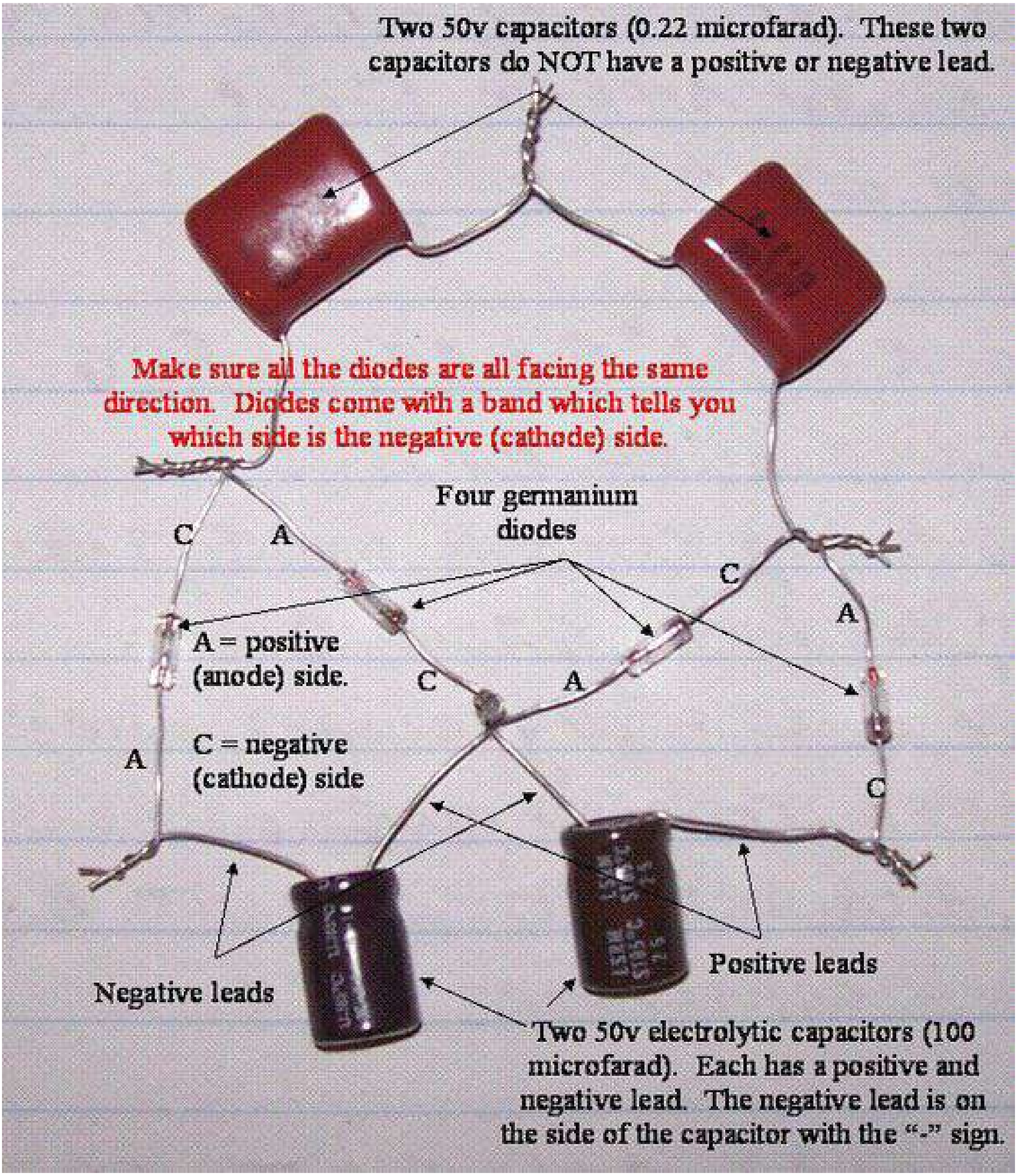
All passive components










Two 50v capacitors (0.22 microfarad). These two capacitors do NOT have a positive or negative lead.
Make sure all the diodes are all facing the same direction. Diodes come with a band which tells you which side is the negative (cathode) side.
Four germanium diodes
C
A
C
A
A = positive (anode) side.
C
A
A
C = negative (cathode) side
C
Negative leads
Positive leads
Two 50v electrolytic capacitors (100 microfarad). Each has a positive and negative lead. The negative lead is on the side of the capacitor with the "-" sign.

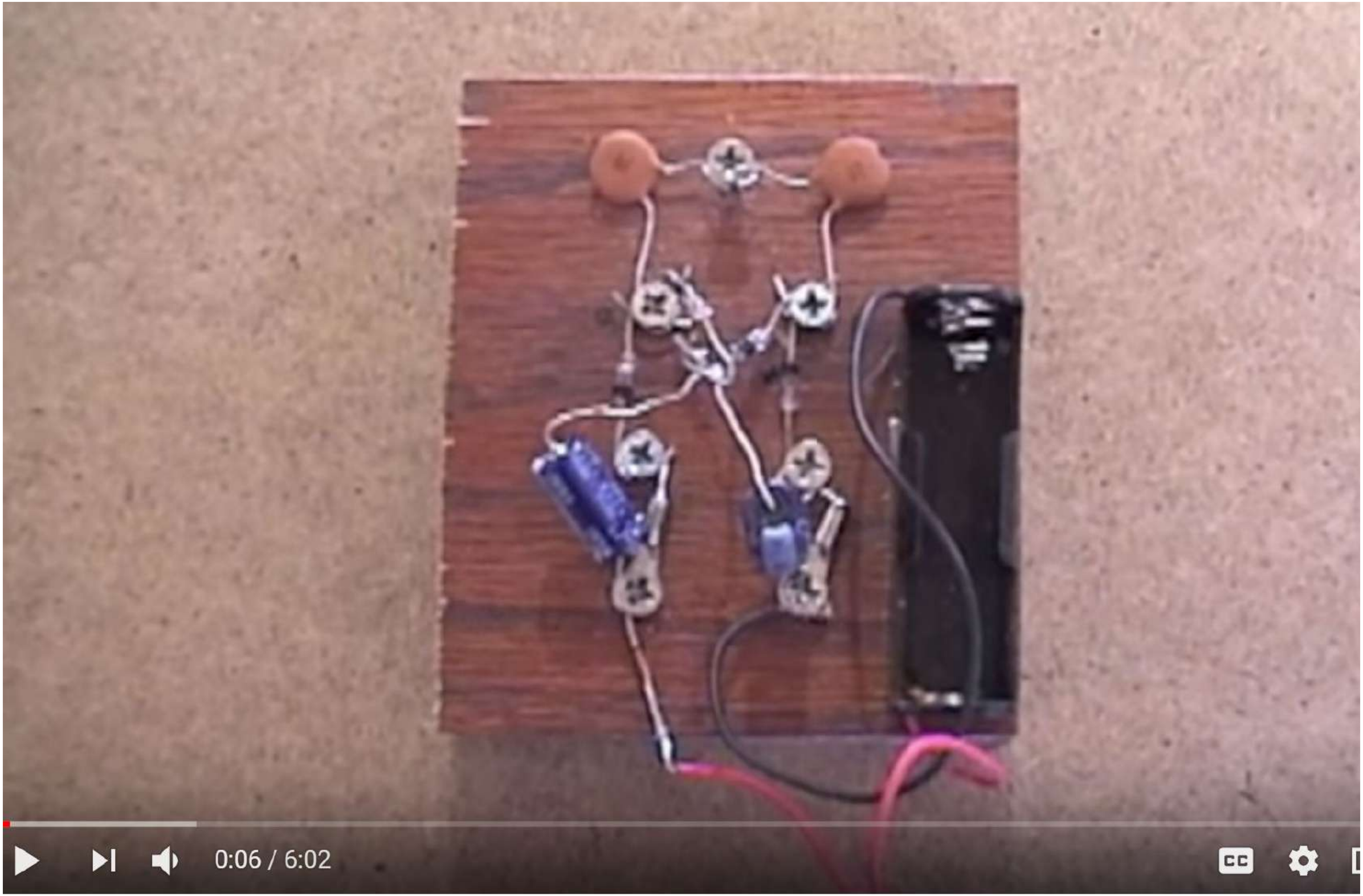
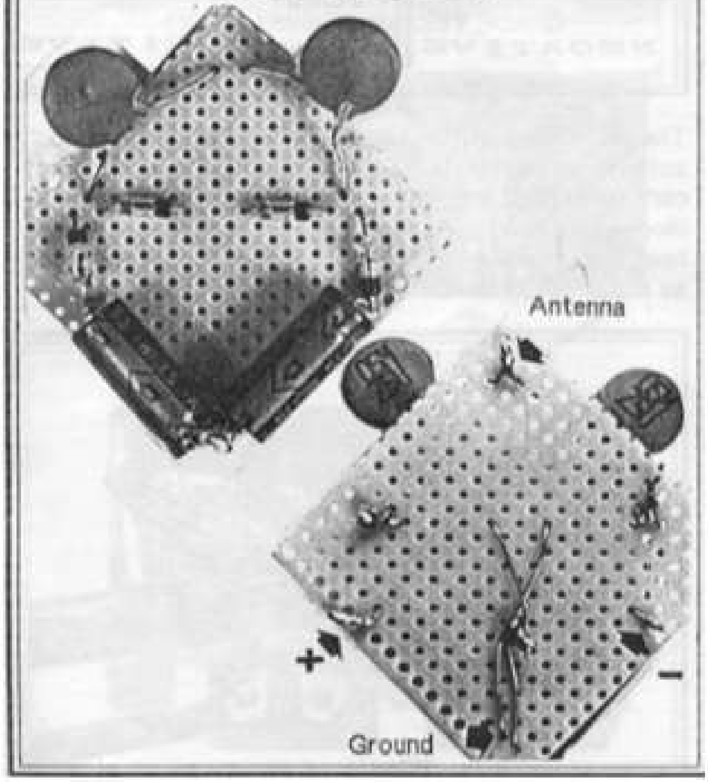
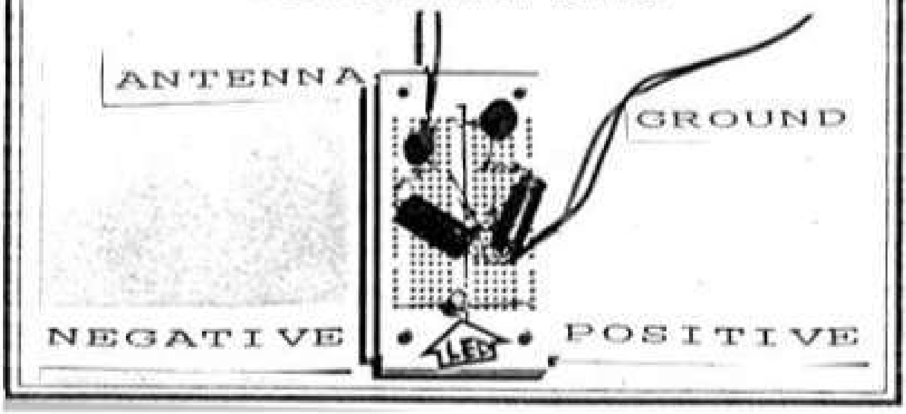

0:06 / 6:02

FIG. 10 BREADBOARD



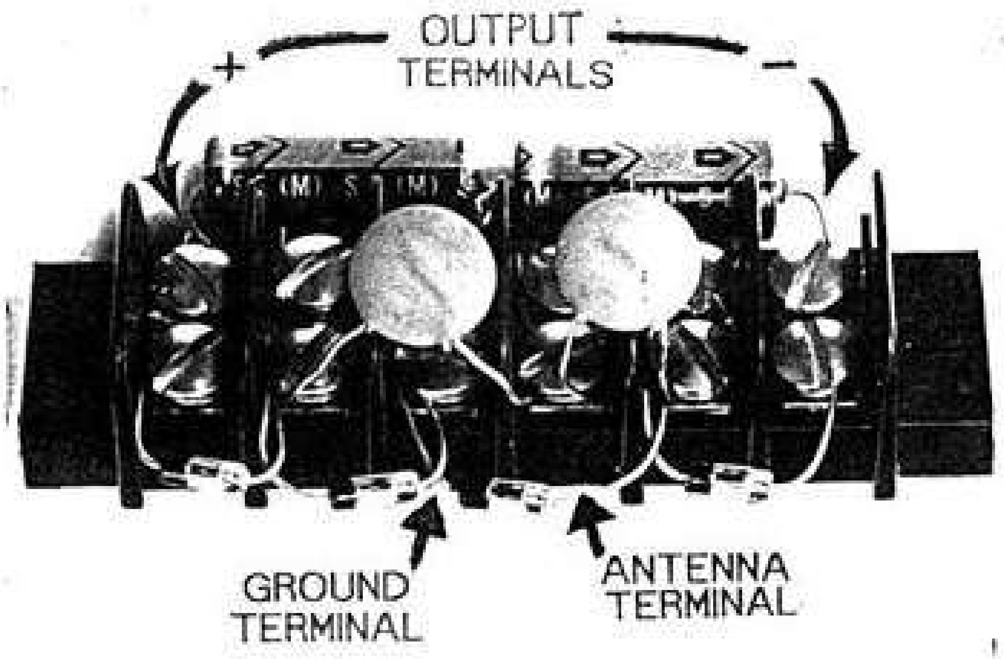
the board as shown in Figure 11. This unit is powering a small red LED indicated by the arrow.

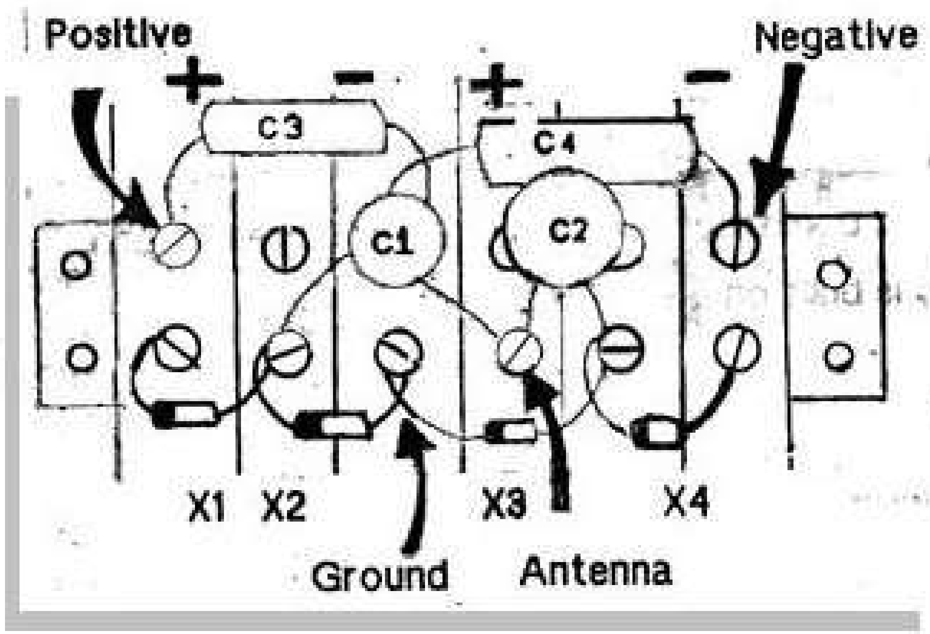
FIG. 11 EXPERIMENT BOARD



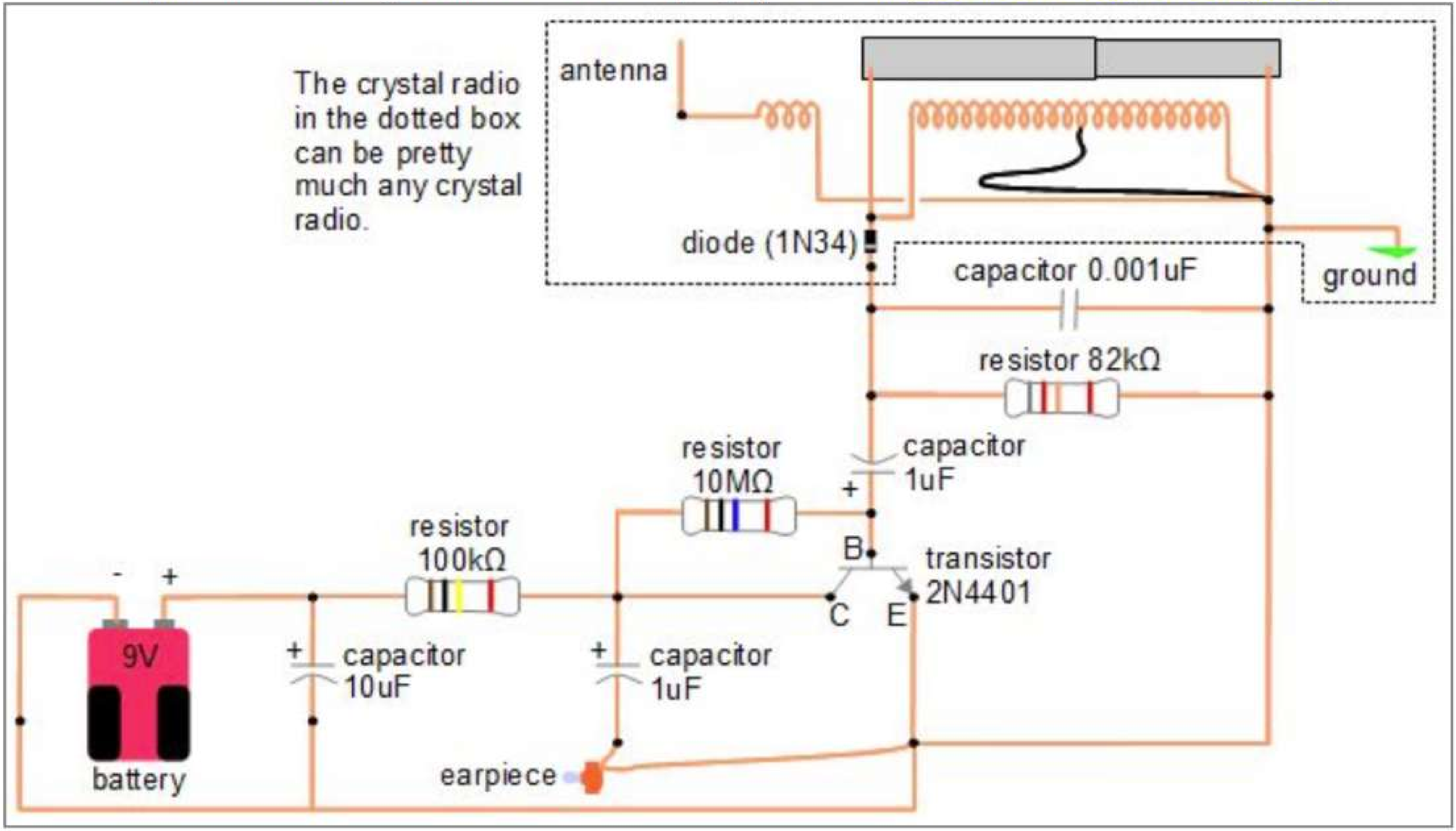
ıade to the twisted ends of the ceramic capacitors. When soldering the leads of the 1N34 diodes, care must be taken t

FIG. 9 TERMINAL STRIP



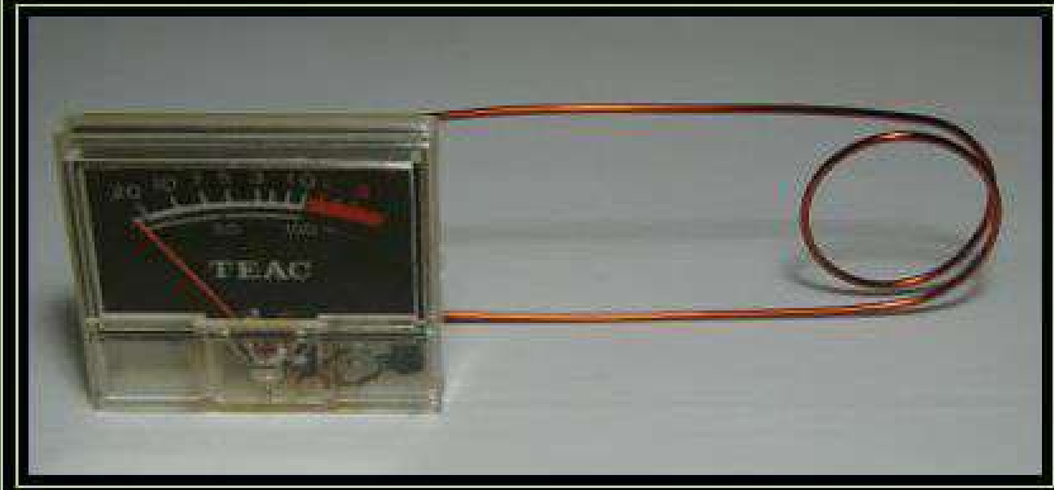


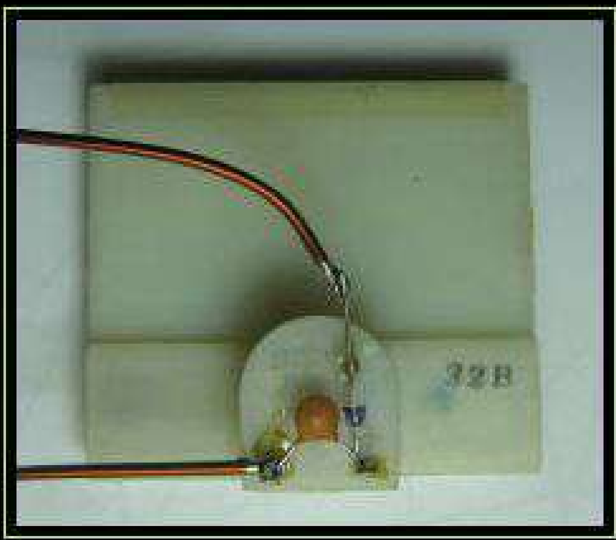
Amplifier circuit. The crystal radio used for example purposes is the crystal radio made from scraps here.

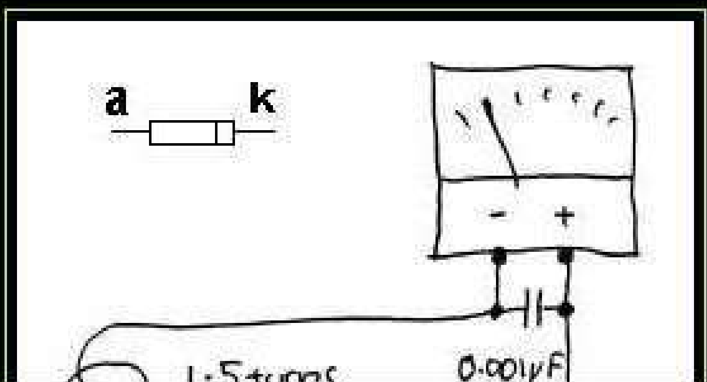


SATURDAY, NOVEMBER 13, 2010

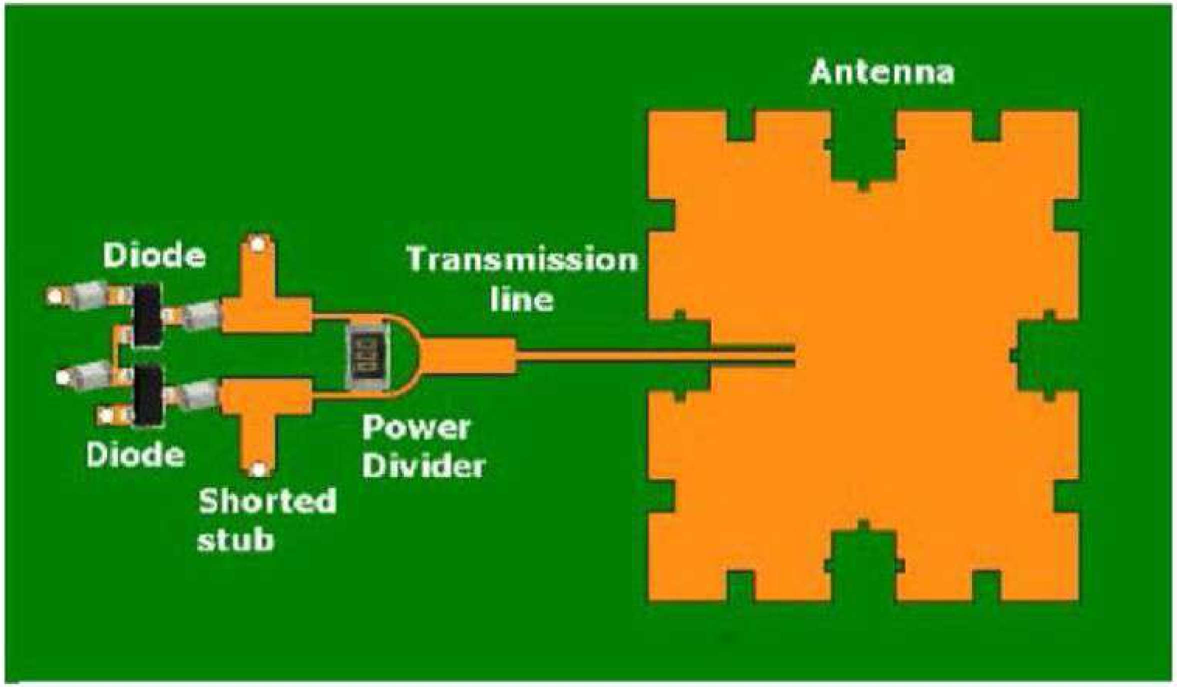
SIMPLE FIELD STRENGTH METER

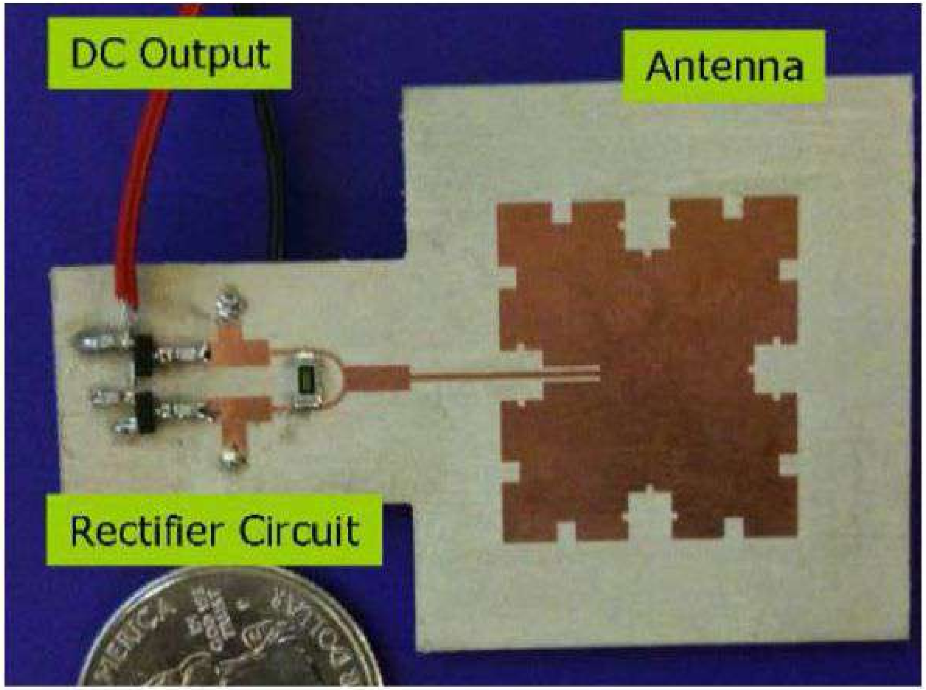






MY


Antenna
Diode
Transmission line
Diode
Power Divider
Shorted stub


DC Output
Antenna
Rectifier Circuit

4. Results and Analysis

The simulated and measured results at the output voltage of voltage multiplier circuit are shown graphically in **Figure 8**. From the graph analysis, the simulated and the measured results agree considerably with each other. The measured results are shown to be better than the simulation results. The reason behind this may be due to the uncertainty in series resistance value of the diode obtained from SPICE parameters in modeling as explained in Equation (5). This resistance vale of diodes in practical circuit may be lower than in the model, which provides fast discharge path, in turn rise in voltage as passes through the stages and reaches to final output. In this work, the DC output voltages obtained through simulation and measurement at 0 dBm re 2.12 V and 5.0 V respectively. These results are comparatively much better than in ref. [9], where in at 0 dBm, 900 MHz they achieved 0.5 V and 0.8 V through simulation and measurement increasing to 1.4 V, 1.67 V, 1.87 V and 2.12 V for 4, 5, 6 and 7 stages respectively compared to 2 mS as shown in [10]. **Figure 12** shows that the conversion ratio of 22 is achieved at 0 dBm input power and drops to 2.5 at –40 dBm. The highest value at 0 dBm is due to the innate characteristics of the zero bias Schottky diodes which conduct fairly well at higher input voltages.

5. Conclusion

From the experimental results, it is found that the pro-

Table 2. Component used in 7 stage voltage multiplier.

Name of component	Label	Value
Stage capacitors	C_1 - C_{14}	3.3 nF
Stage diodes	D_1 - D_{14}	HSMS 2850
Filter capacitor	C_L	100 nF
Load resister	R_L	100 kΩ

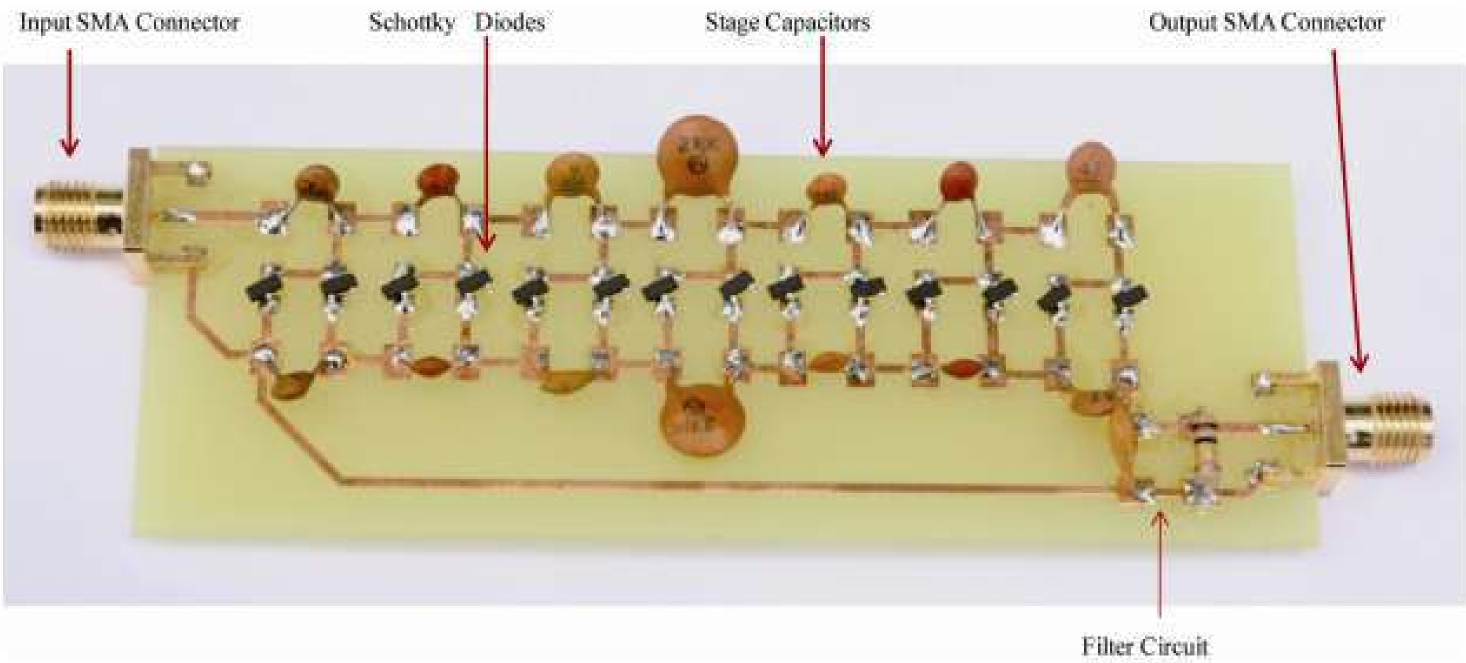


Figure 7. Photograph of assembled circuit board.

sign in this paper uses a capacitor across the load to store and provide DC leveling of the output voltage and its value only affects the speed of the transient response. Without a capacitor across the load, the output is not a good DC signal, but more of an offset AC signal.

In addition to the above, an equivalent load resistor is connected at the final node. The output voltage across the load decreases during the negative half cycle of the AC input signal. The voltage decreases is inversely proportional to the product of resistance and capacitance across the first stage was 3.3 nF, the second stage was 1.65 nF, third stage was 825 pF, fourth stage was 415 pF and so on. But keeping in view of testing, the capacitance values were chosen to have a close match with the standard available values in the market.

Simulation was carried out through 4 to 9 voltage doubler stages. Based on results obtained a 7 stage doubler is best to implemented for this application.

The design of the printed circuit board (PCB) was carried out using DipTrace software. The material used to

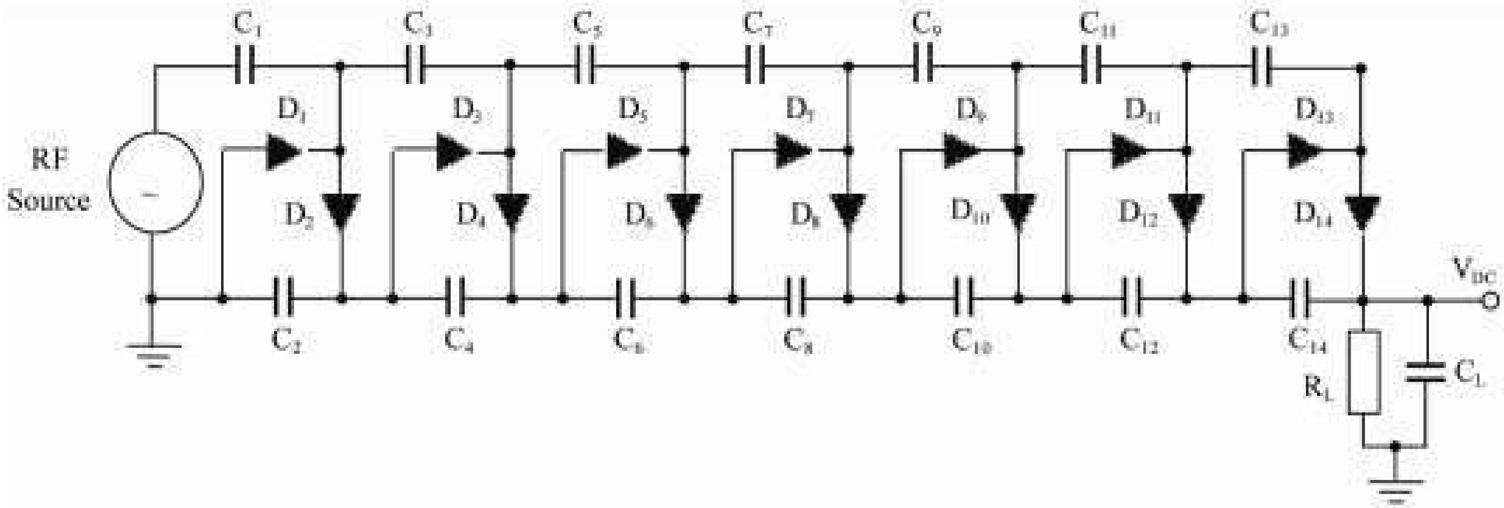


Figure 6. Schematic of 7 stage voltage multiplier.

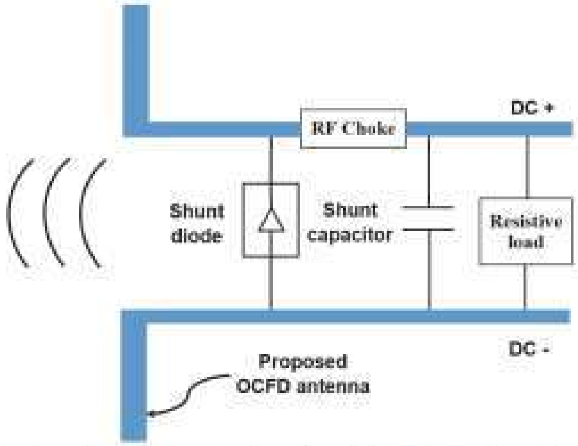


Fig. 9. Configuration of a single shunt diode (Class F) rectifier with a dipole antenna.

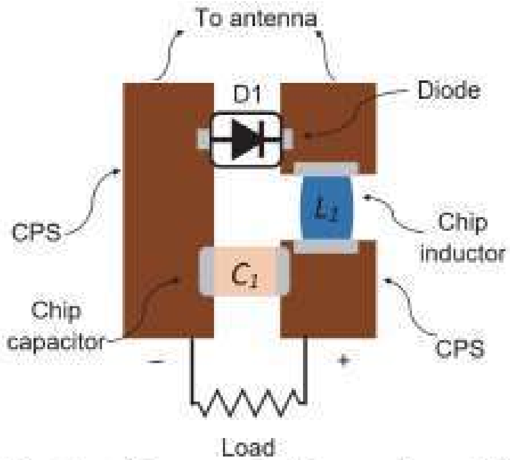


Fig. 10. Configuration of the proposed rectifier on coplanar striplines (CPS).

TABLE III
CIRCUIT COMPONENTS USED IN THE DESIGN

Component name	Nominal Value	Part number and supplier
D1	Schottky diode	SMS7630-079LF, Skyworks
L1	47 nH chip inductor	0603HP47N, Coilcraft
C1	100 nF chip capacitor	GRM188R71H104JA93D, Murata

antenna have a radius of 50 mm and a circumference angle of

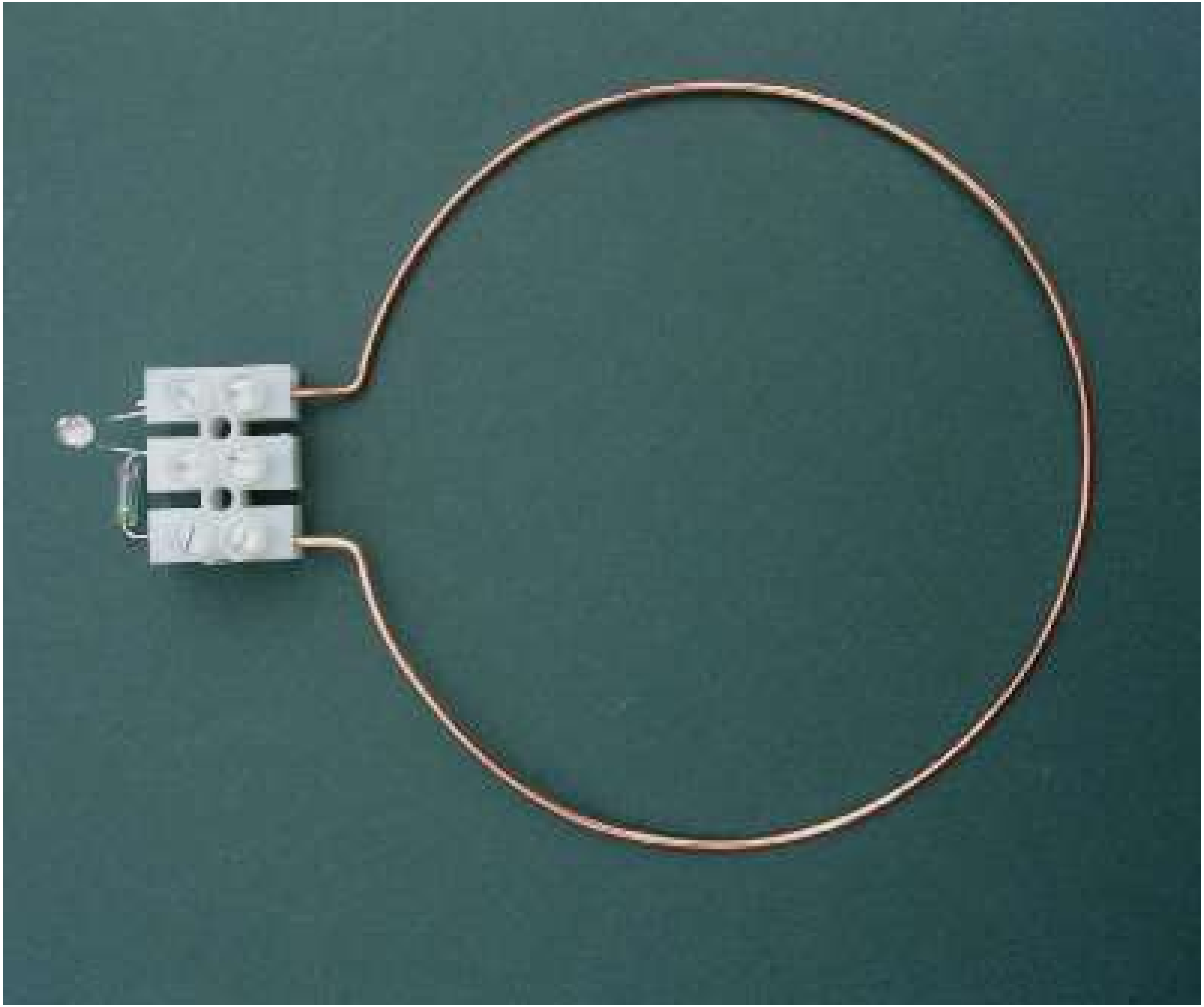
respectively. While the imaginary part of the proposed OCFD is around 0 Ω at resonant frequencies 0.6 GHz, 1.2 GHz and 2.4 GHz, which are f_0, $2f_0$, and $4f_0$ respectively. These results have demonstrated that the simulated results agree with the OCFD theory as discussed in Section III–A. Furthermore, the imaginary part of the impedance of the antenna over the resonant frequency band from 1.4 to 2 GHz turns from negative values (for the reference antenna) to positive values (for the proposed antenna). As shown in Fig. 7(b), the value of the imaginary part of the proposed antenna impedance varies between 0 and 300 Ω over the desired frequency band. This feature could help the proposed antenna to produce a better conjugate matching with the rectifier, since the imaginary part of the impedance of the rectifier normally varies between -700 and 0 Ω as we discussed earlier. The simulated 3D radiation patterns of the proposed antenna at the frequencies of interest are depicted in Fig. 8. The 2D polar plots of antenna patterns in *E-plane* and *H-plane* are shown as well. Here we have only showed the directivity (maximum gain) of the antenna (without taking the mismatch loss into account). From Fig. 8, it can be seen that the antenna has symmetrical patterns about YOZ plane with a maximum directivity of 1.8 dBi at 0.9 GHz, 3.5 dBi at 1.8 GHz and 3.3 dBi at 2.4 GHz. The antenna is more directive towards the long arm direction at 1.8 GHz and 2.4 GHz with the half-power beam-widths (HPBW) of around 174° and 185° respectively. The HPBW is about 96° at 0.9 GHz.

Therefore, the proposed broadband OCFD antenna has obtained high impedance over a wide frequency range. The proposed design is just an example to illustrate the proposed new method. The details of the dipole could be modified according to the frequency of interest.

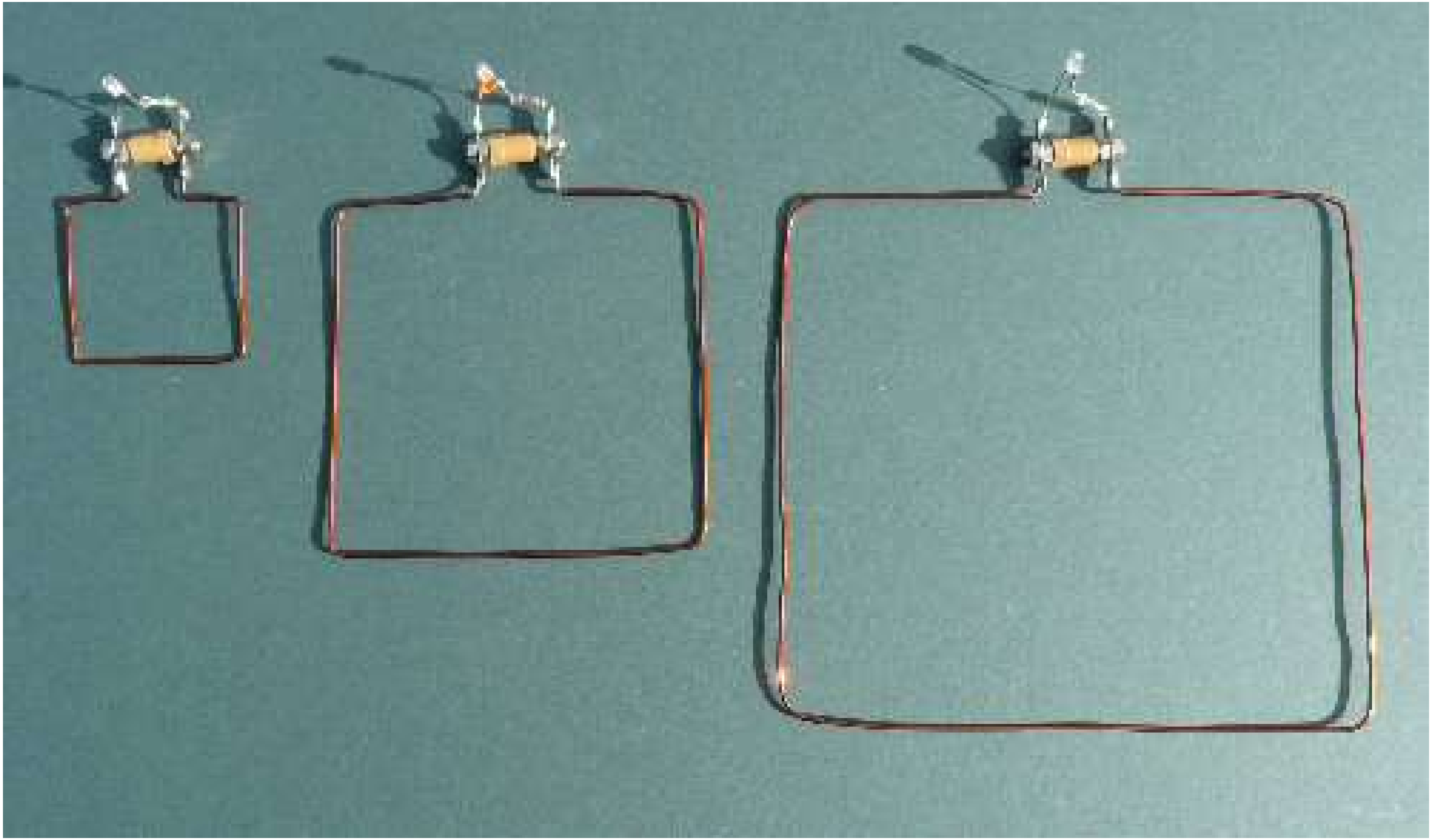
IV. RECTENNA INTEGRATION

A. Rectifier Configuration

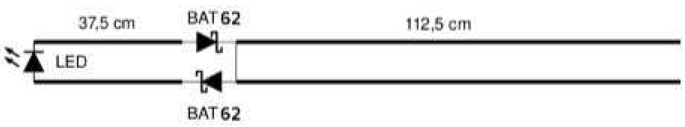
The proposed high impedance OCFD antenna may directly conjugate match with the input impedance of a rectifier over a wide frequency band. The rectifier should only consist of few circuit components for rectification, DC storage and output. A single shunt diode rectifier is selected due to its very simple structure and high conversion efficiency [33]. The configuration of the single shunt diode rectifier with a dipole




Sony Ericsson



ake and it can be sent in an envelope. I made tens of them and sent them to politicians, newspapers, universities... I gave some to local people, together with a user
 later version, that can be rolled up in an envelope that fits the conditions to be sent with only one stamp.

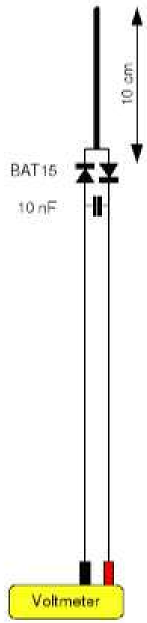


BAT62 detection diodes are no more produced. **BAT15** diodes work fine but they wear out; after a few months they stop functioning. **SMS7630** diodes are great but very little and mechanically fragile. **MMSD701T1G** diodes are sturdy and powerful; an excellent choice for a beginner. Such SMD diodes do also work for cell phone frequencies, which allows to test out a snake with a calling cell phone pushed against it. But any detection diodes that can manage 100 MHz will do.

The LED I'm currently using is the **L-7113SEC-H** . It lights up with a low tension and a very low current (the bluer a LED, the more tension it needs). Its color is red yet close to orange hence it is easily seen by the human eye (the eye is most sensitive to green, yellow and orange). The beam is quite narrow so when the LED is directed towards somebody's eyes it will appear quite bright.

For the lengths of 37.5 and 112.5 centimeters, any electric wire with two copper conductors will do. Audio signal wire is a practical solution. Use the shielding as one of the two conductors. The lengths of the two segments must not be precise. What matters is that the total length of the snake be 1.5 meters. Do not hesitate to try out if a little longer or shorter snake gives better results.

A schematic of my current probes, that I connect to a standard multimeter, measuring Volts DC. The measure displayed by the multimeter must be multiplied by 10. When using a 200.0 mV scale, just read while forgetting the dot:



Lead Free Status	Lead Free
RoHS Status	RoHS Compliant

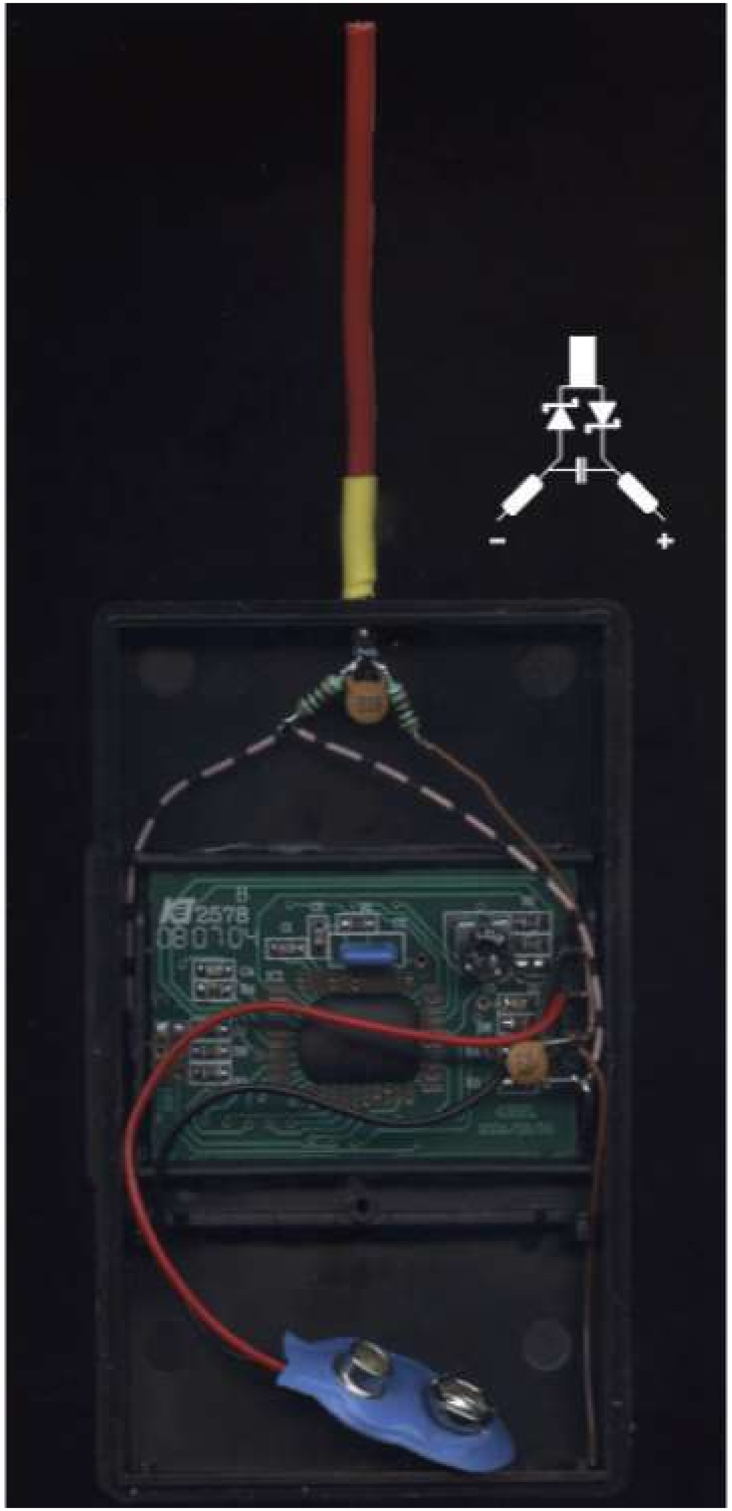
Features, Applications

The MMSD301T1, and MMSD701T1 devices are spin-offs of our popular MMBD301LT1, and MMBD701LT1 SOT-23 devices. They are designed for high-efficiency UHF and VHF detector applications. Readily available to many other fast switching RF and digital applications.

Extremely Low Minority Carrier Lifetime Very Low Capacitance Low Reverse Leakage AEC Qualified and PPAP Capable S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant*

XXX G = Specific Device Code SMMSD701T1G = Date Code = Pb-Free Package
Rating Reverse Voltage MMSD701T1G, SMMSD701T1G Forward Current (DC) Continous Forward Power Dissipation = 25C Junction Temperature Storage Temperature Range Symbol VR Value to +150 Unit Vdc M G

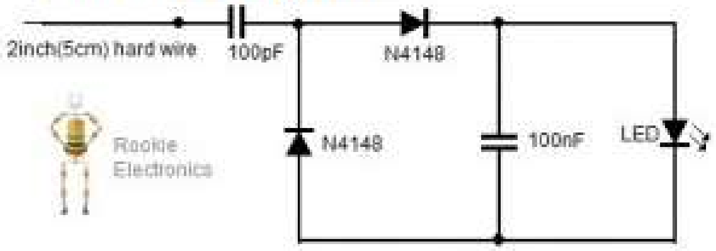

152


2578

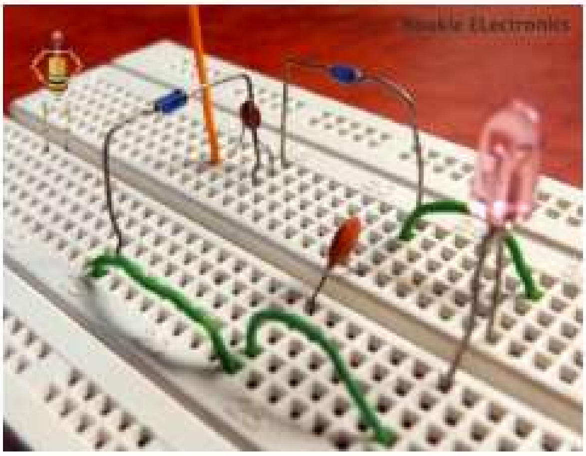
Parts Required:

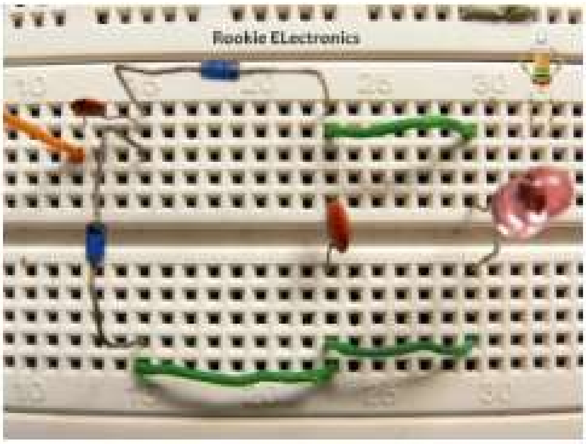
1. 100nF & 100pF
2. n4148 Diode x(2)
3. A bright good quality LED

Circuit Diagram:

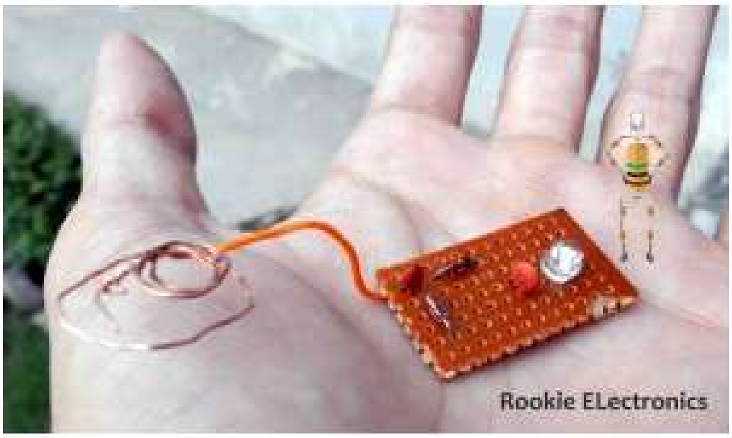


Bread board Arrangement:

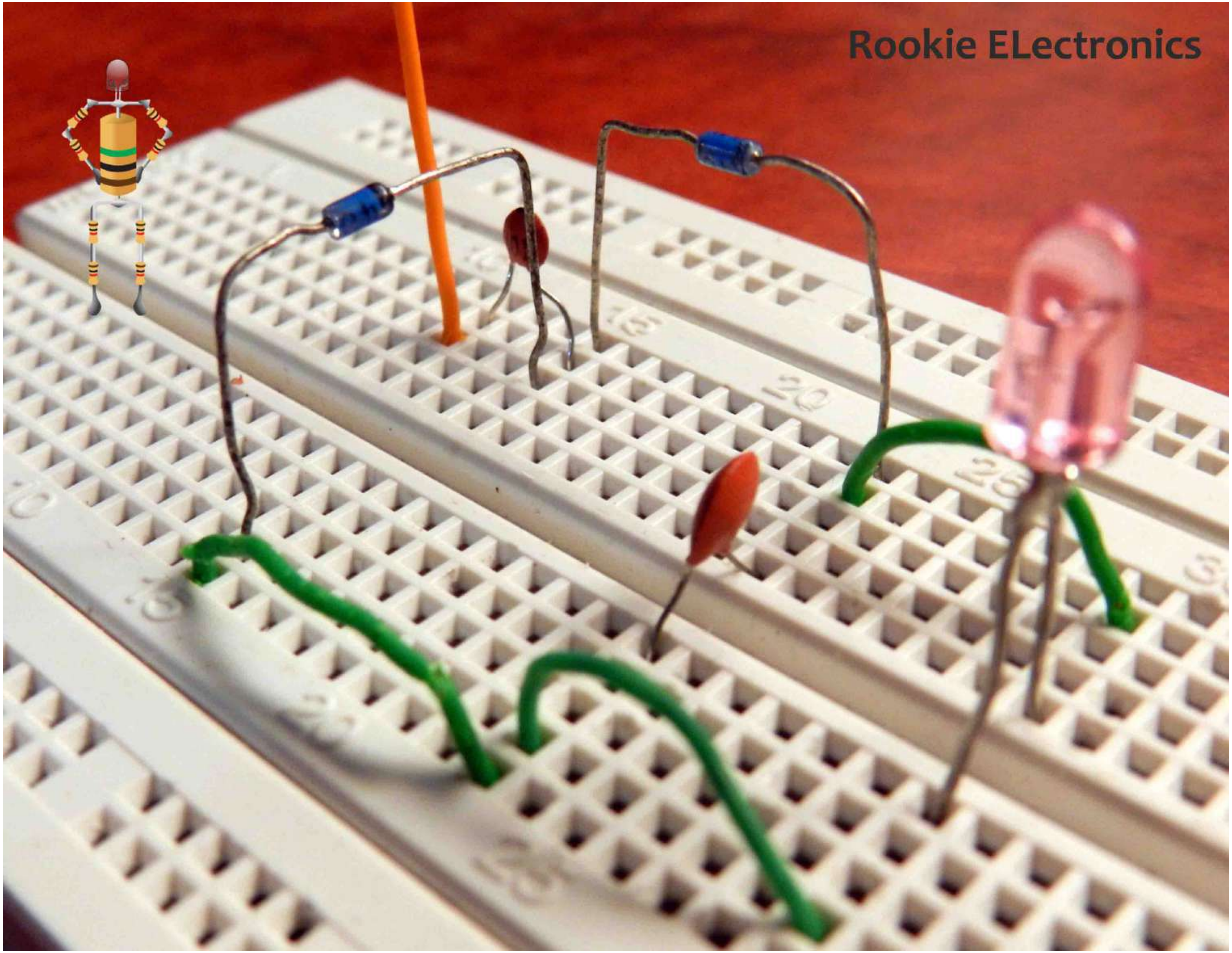


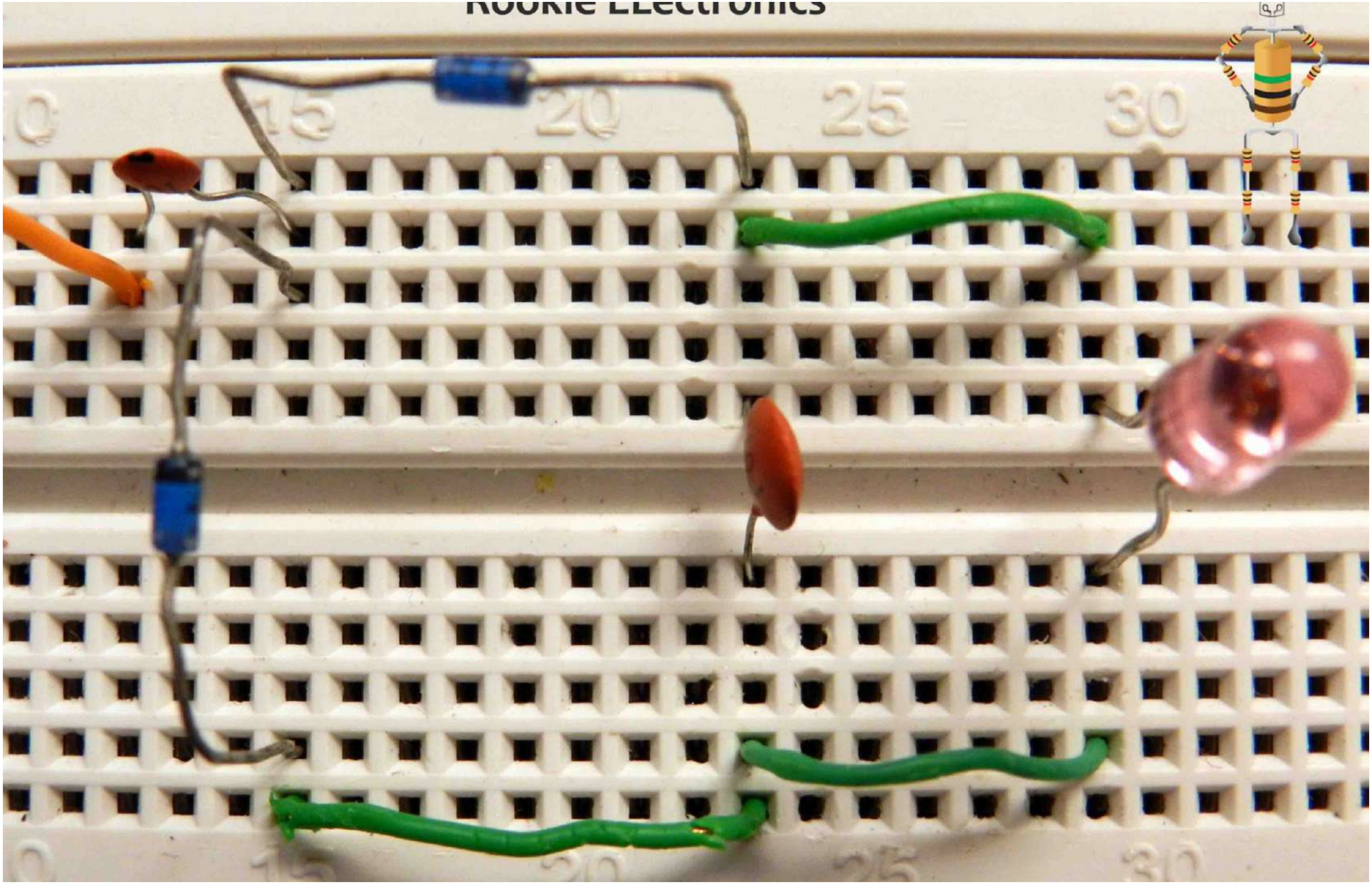


Strip Board:



Rookie ELectronics

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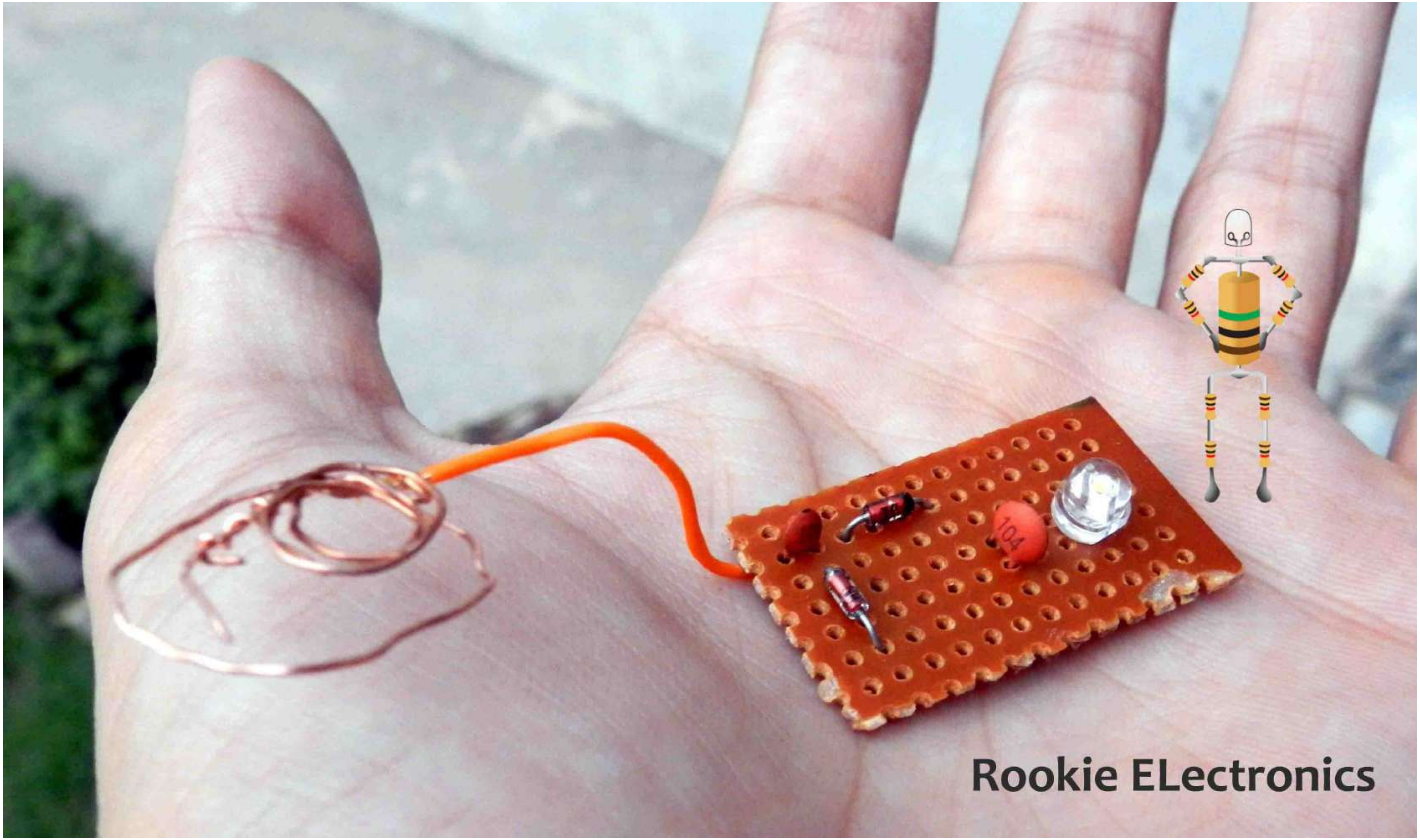
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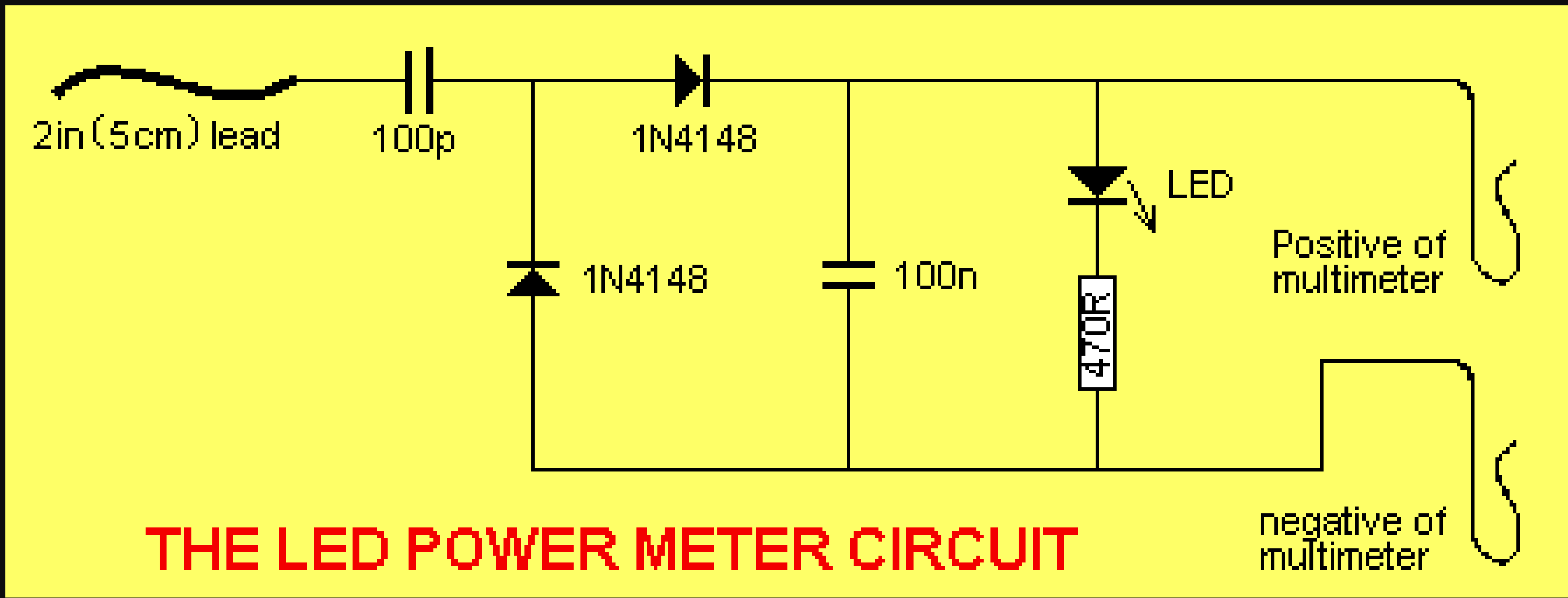
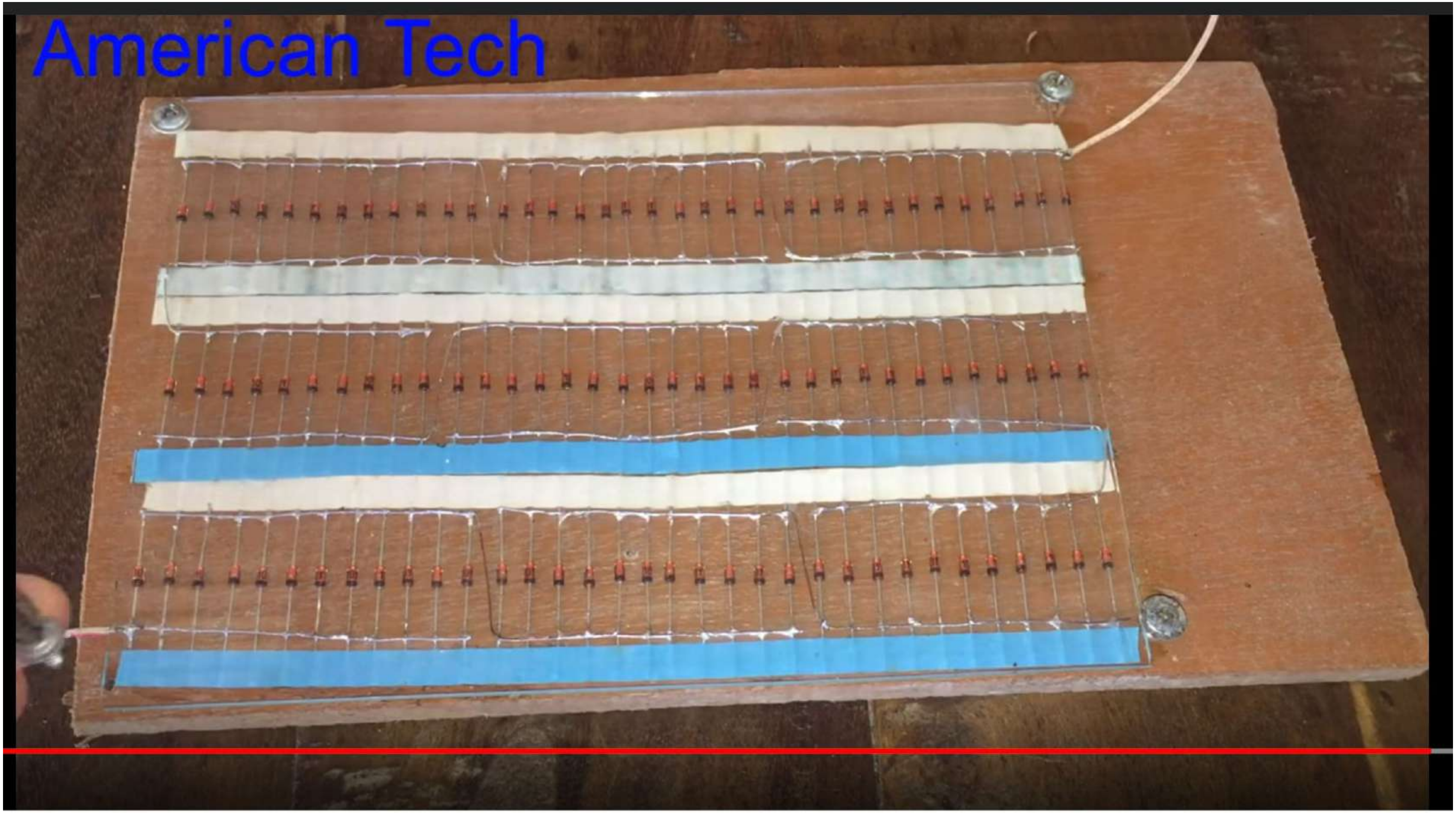
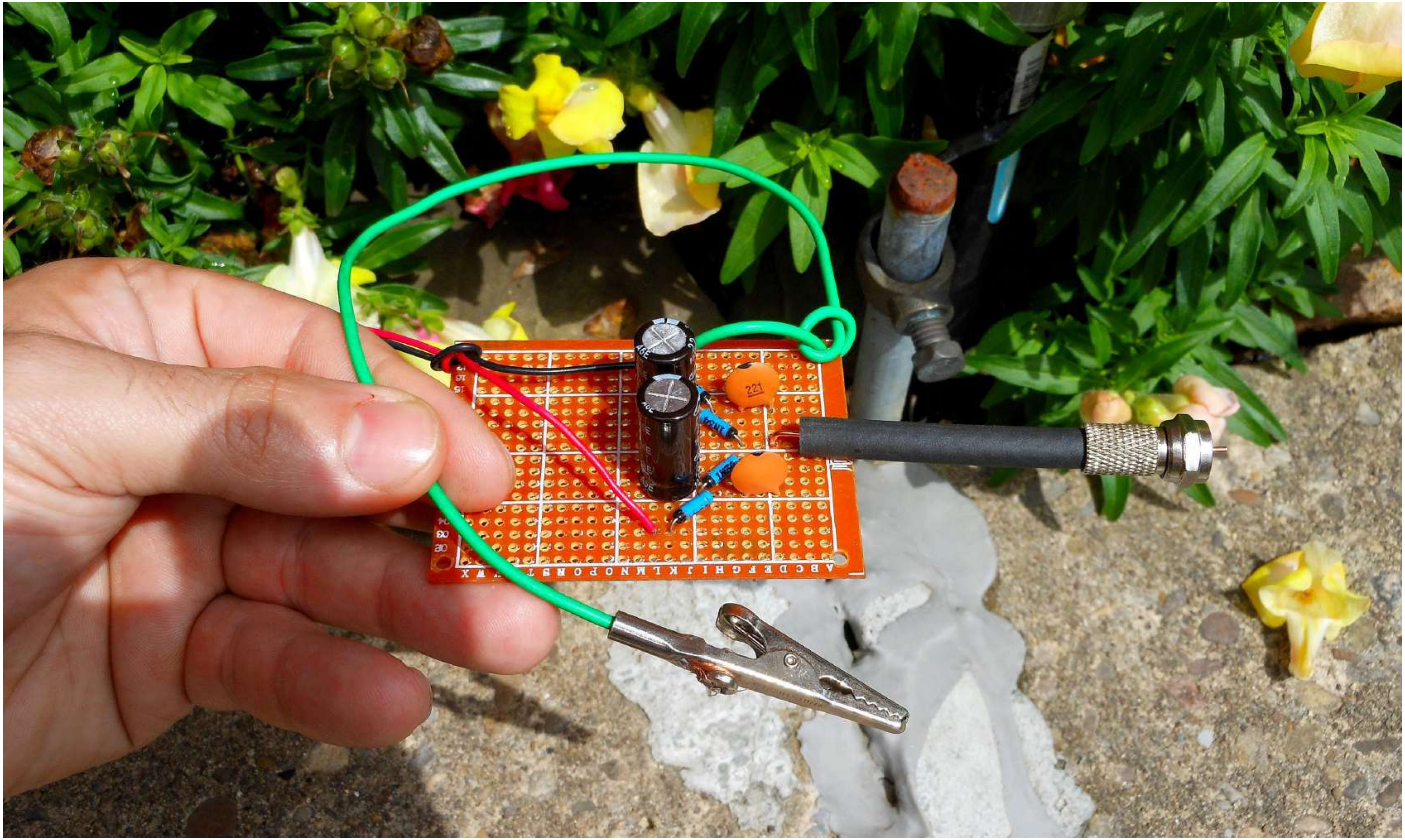
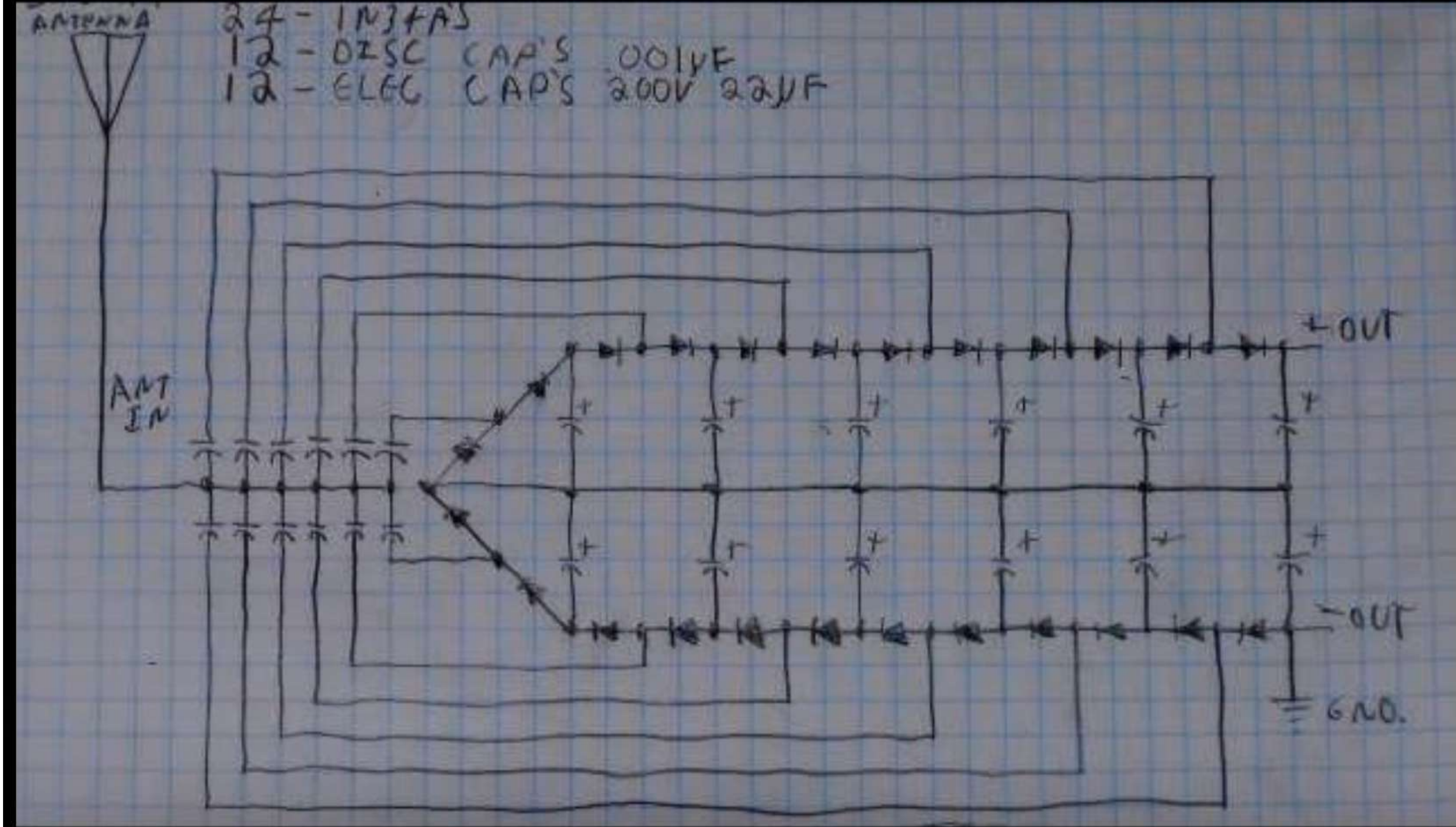
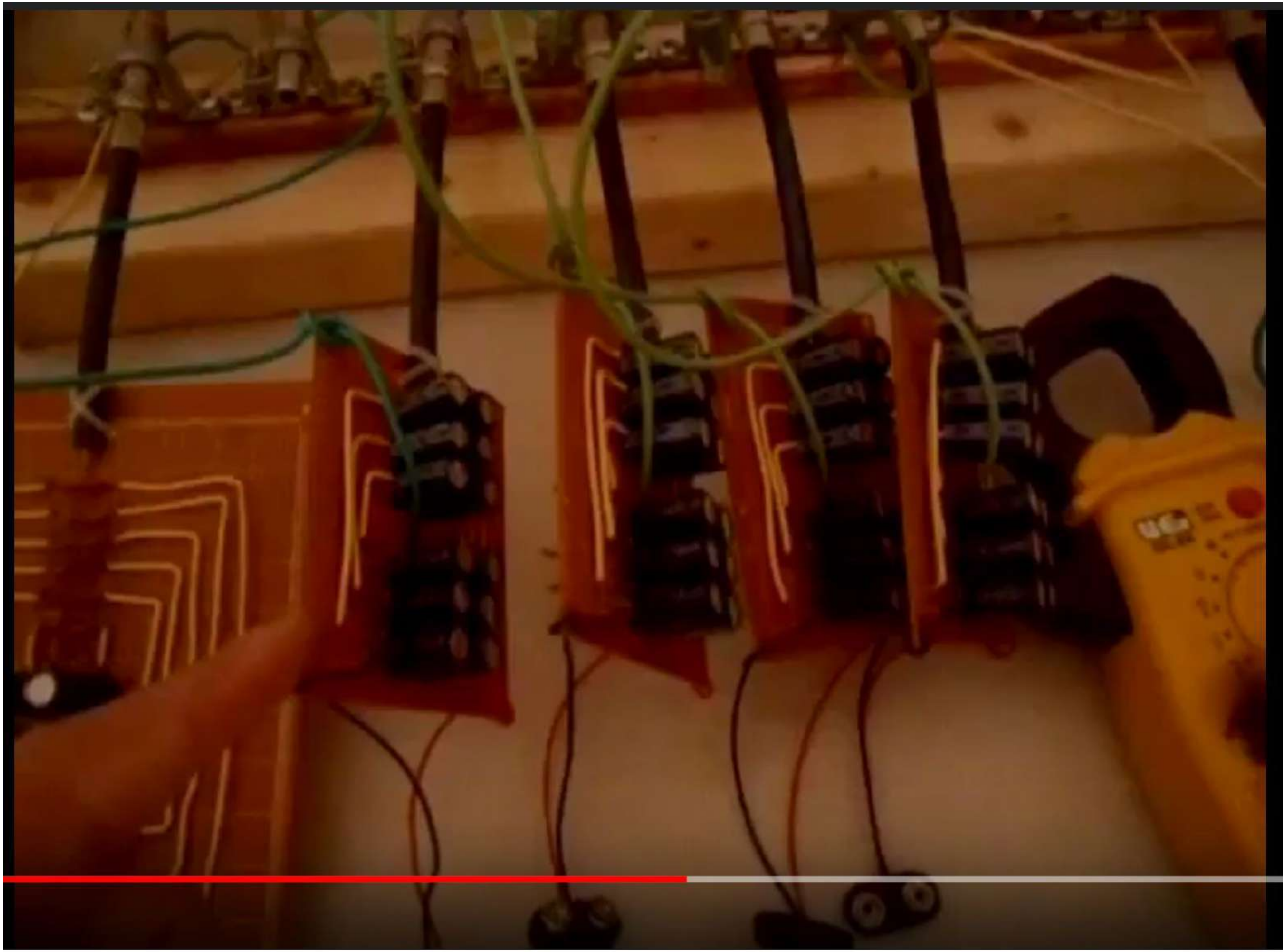
Rookie ELectronics

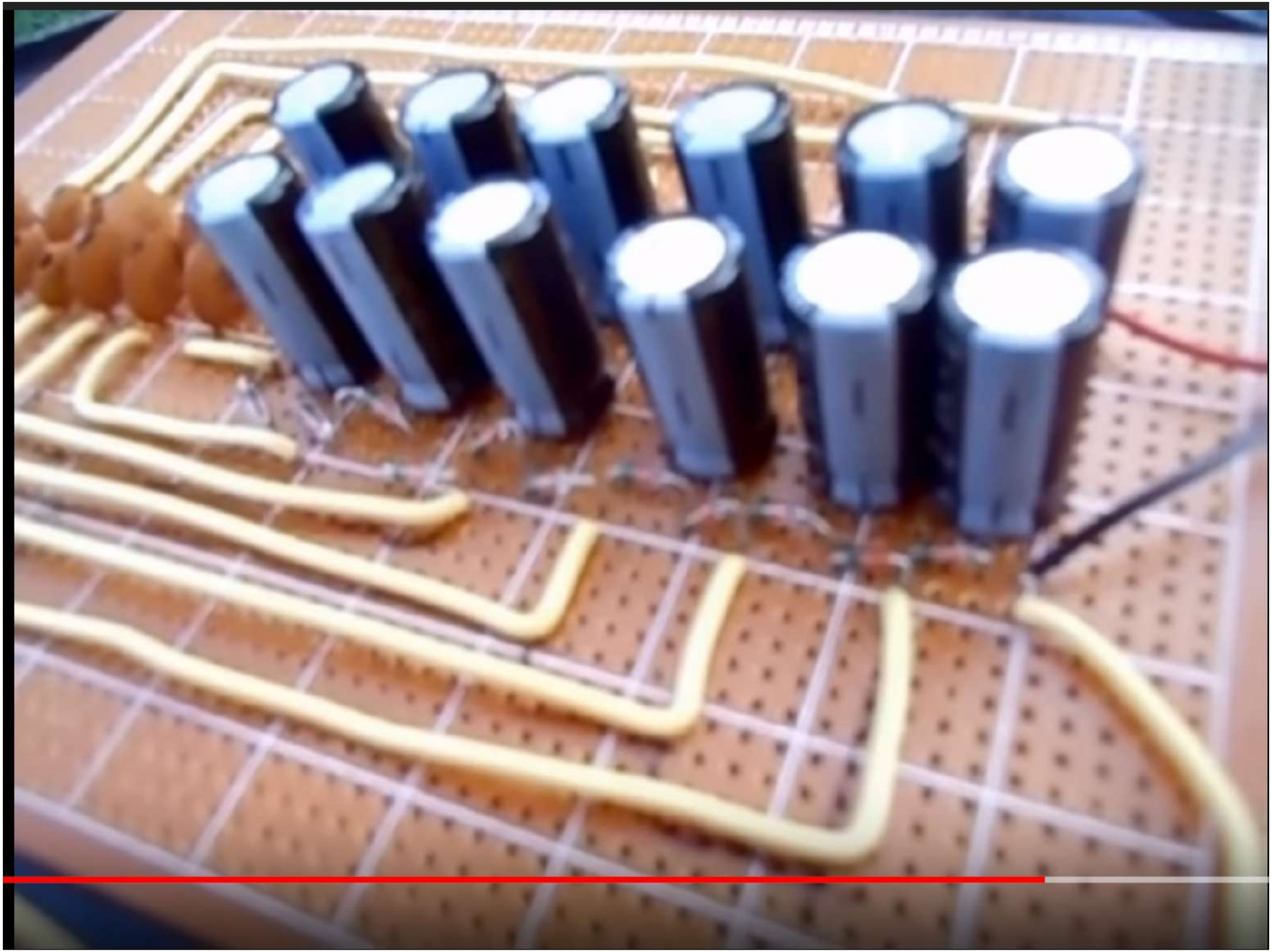

2in (5cm) lead
100p
1N4148
1N4148
100n
LED
470R
Positive of multimeter
negative of multimeter
THE LED POWER METER CIRCUIT

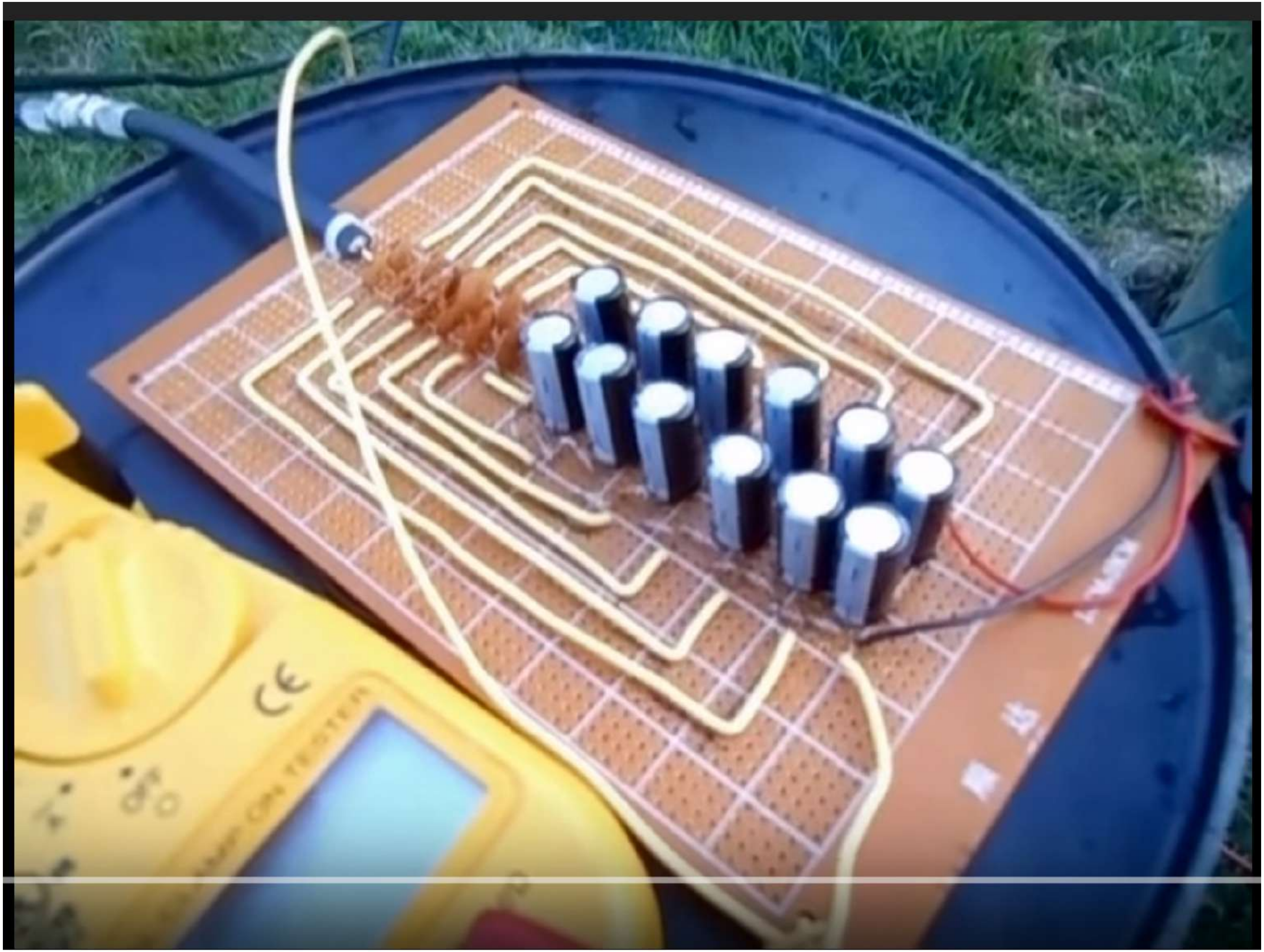

American Tech

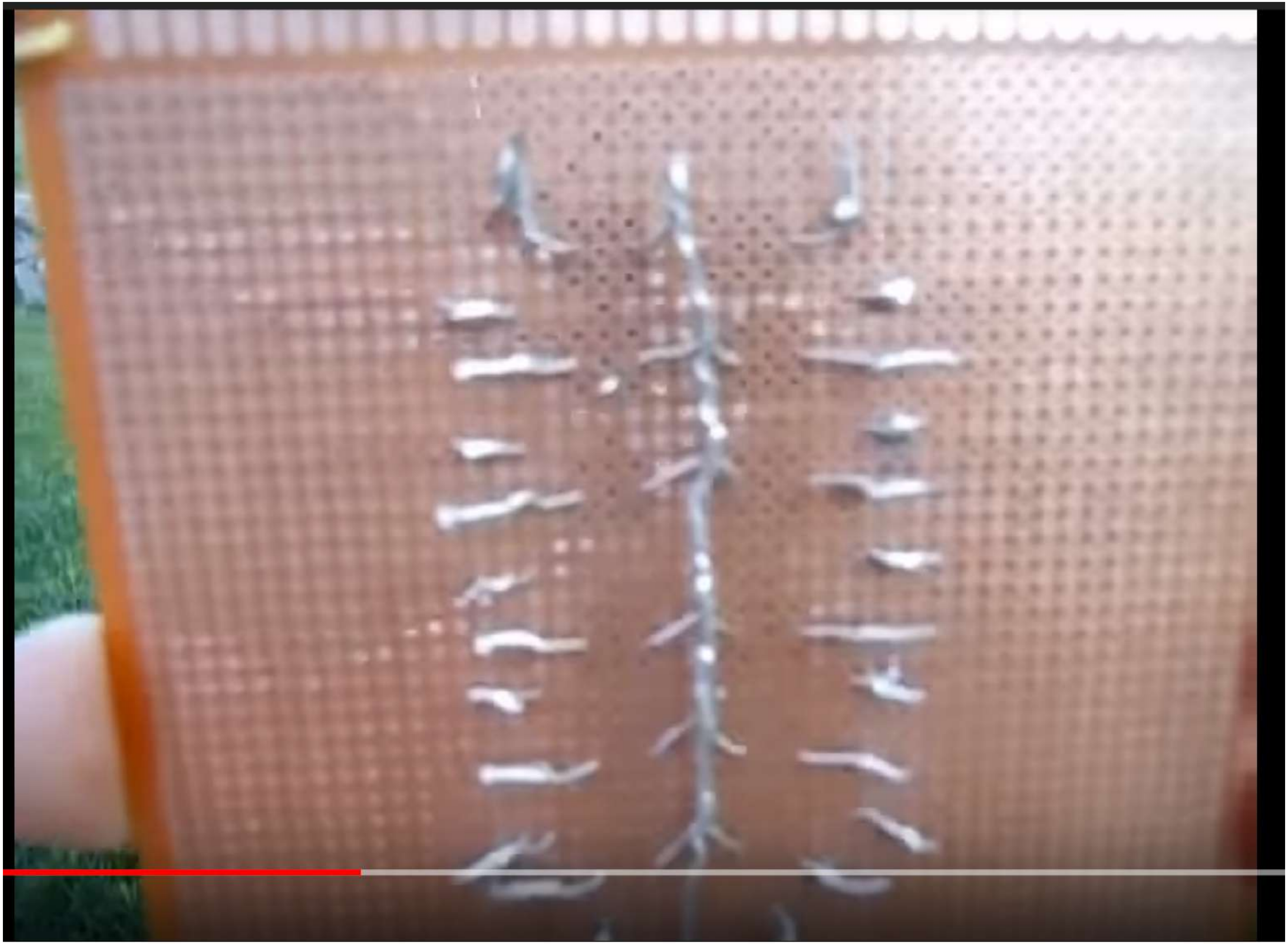

221

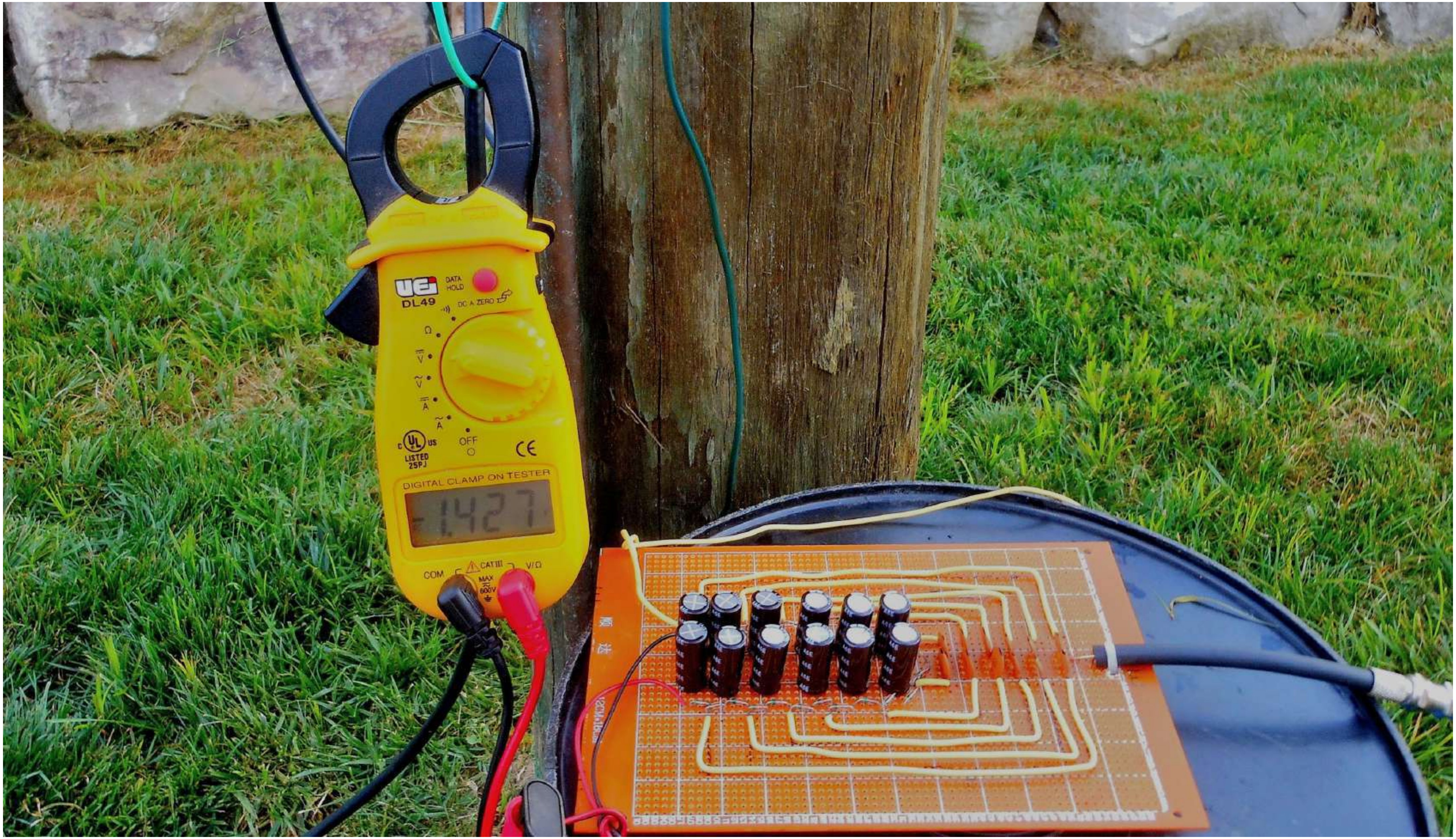

ANTENNA
24 - 1N34A'S
12 - DISC CAP'S .001µF
12 - ELEC CAP'S 200V 22µF
ANT IN
+OUT
-OUT
GND.

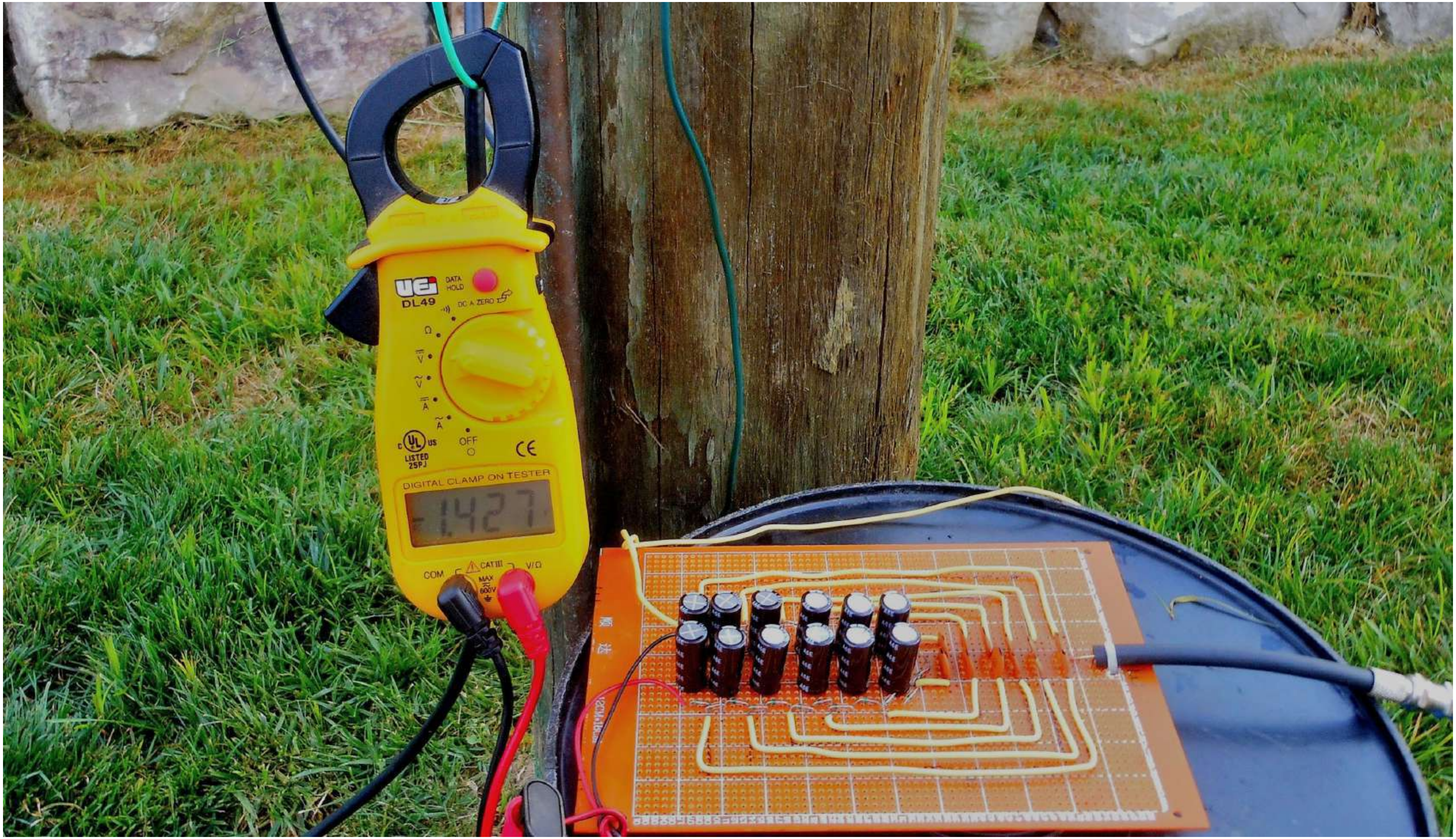




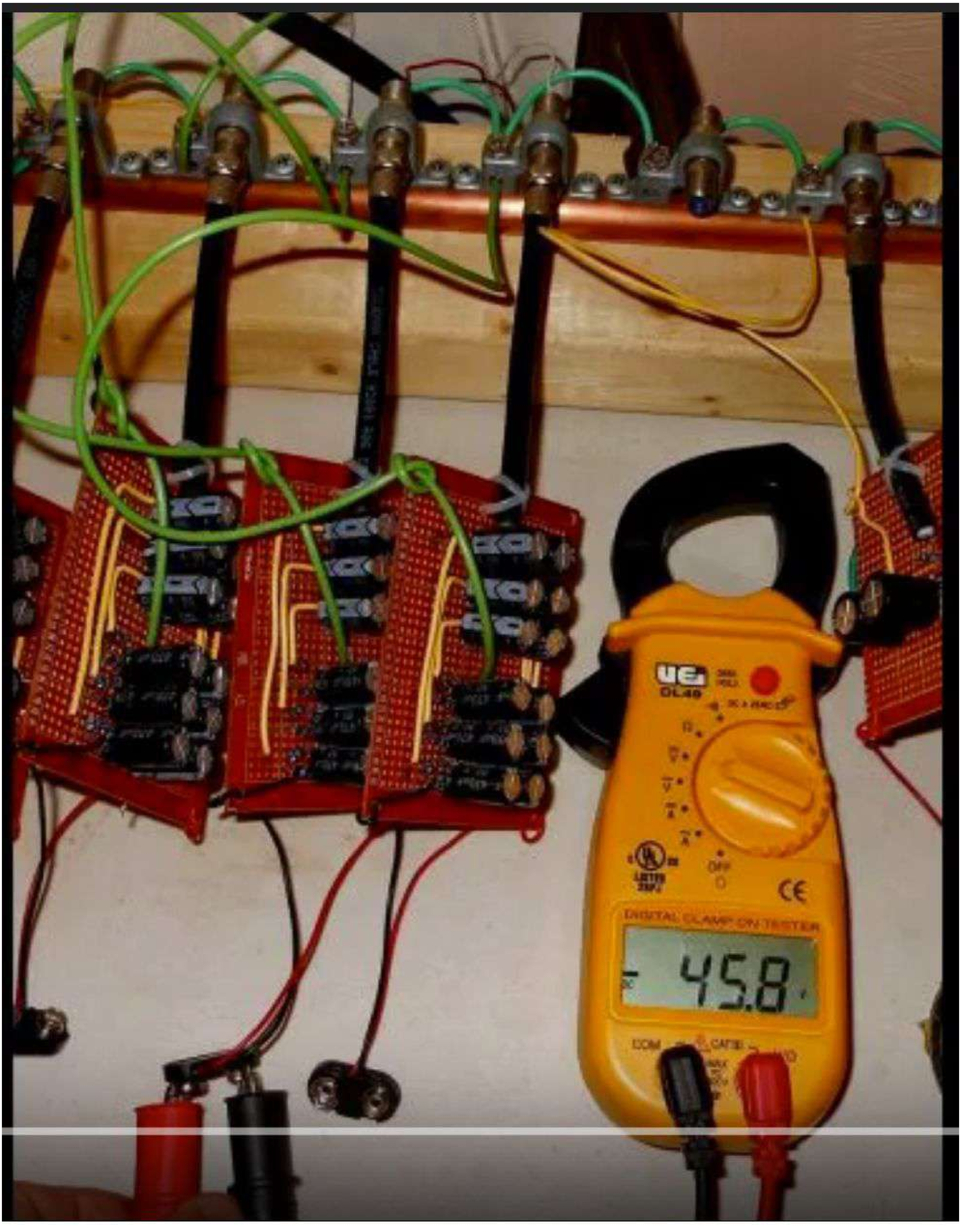





UEi
DL49
DATA HOLD
DC A ZERO
OFF
DIGITAL CLAMP ON TESTER
-1.427
COM
CAT III
MAX 600V
V/Ω



UEi
DL49
DATA HOLD
DC A ZERO
OFF
DIGITAL CLAMP ON TESTER
-1.427
COM
CAT III
MAX 600V
V/Ω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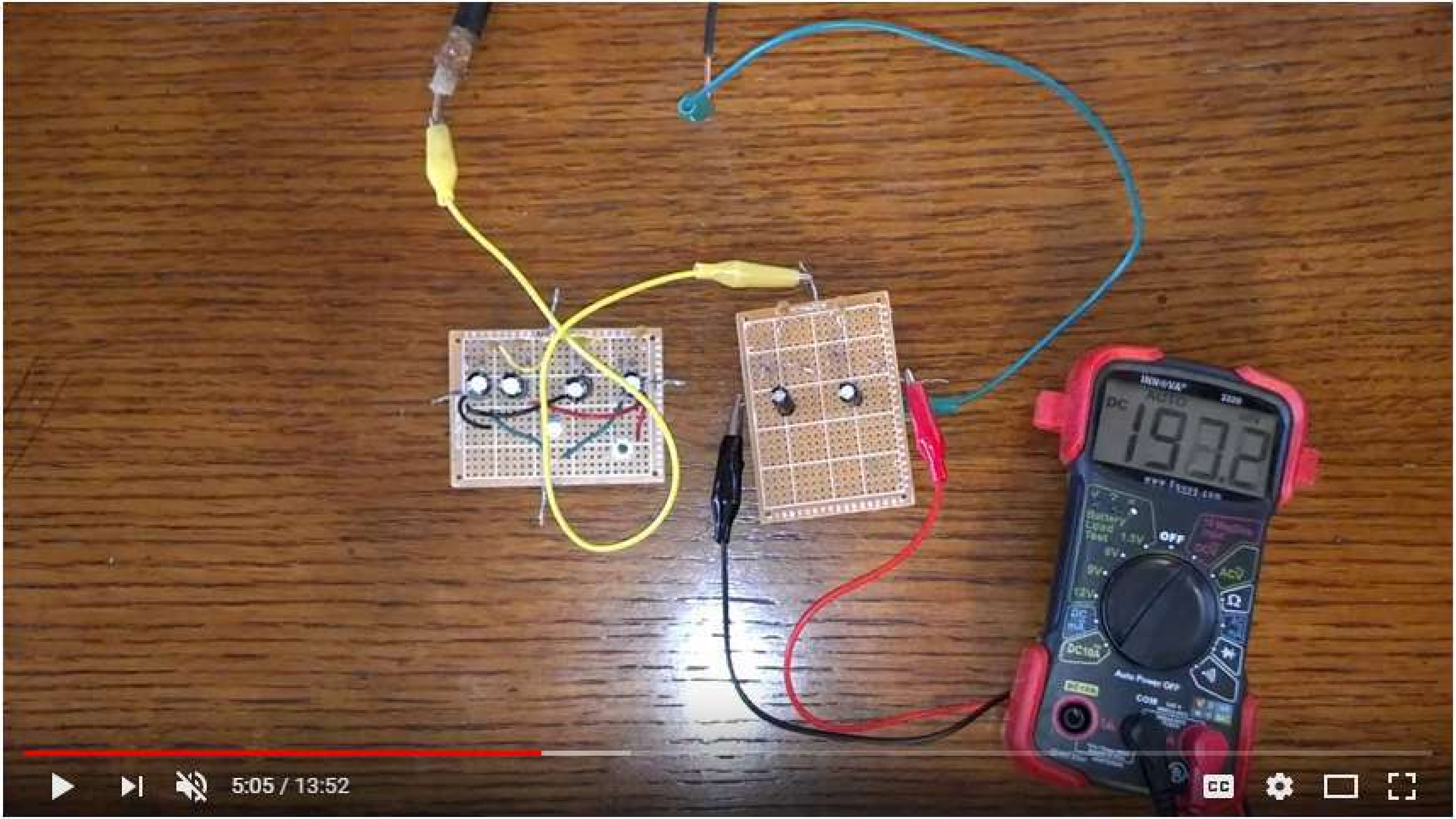
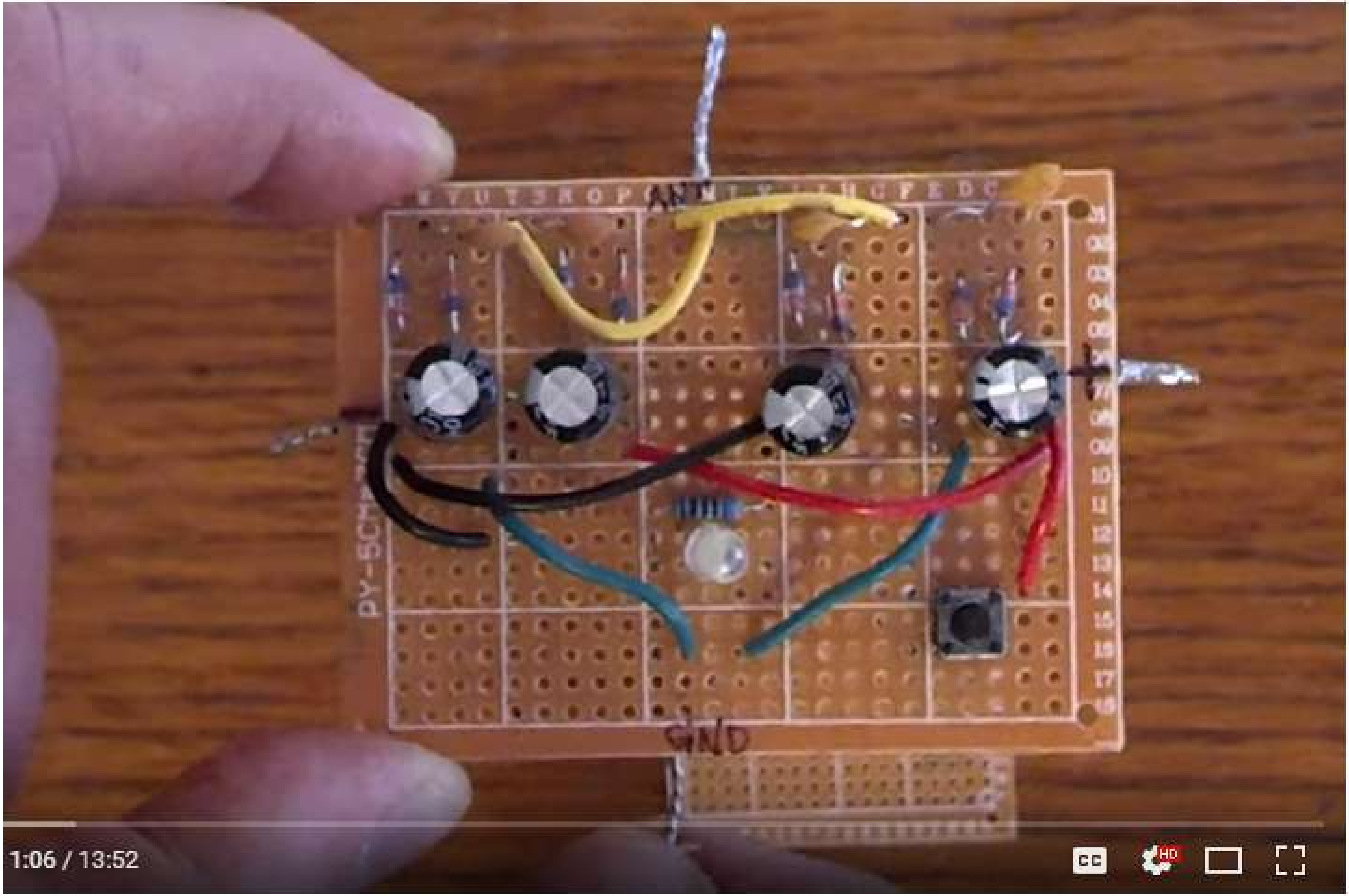
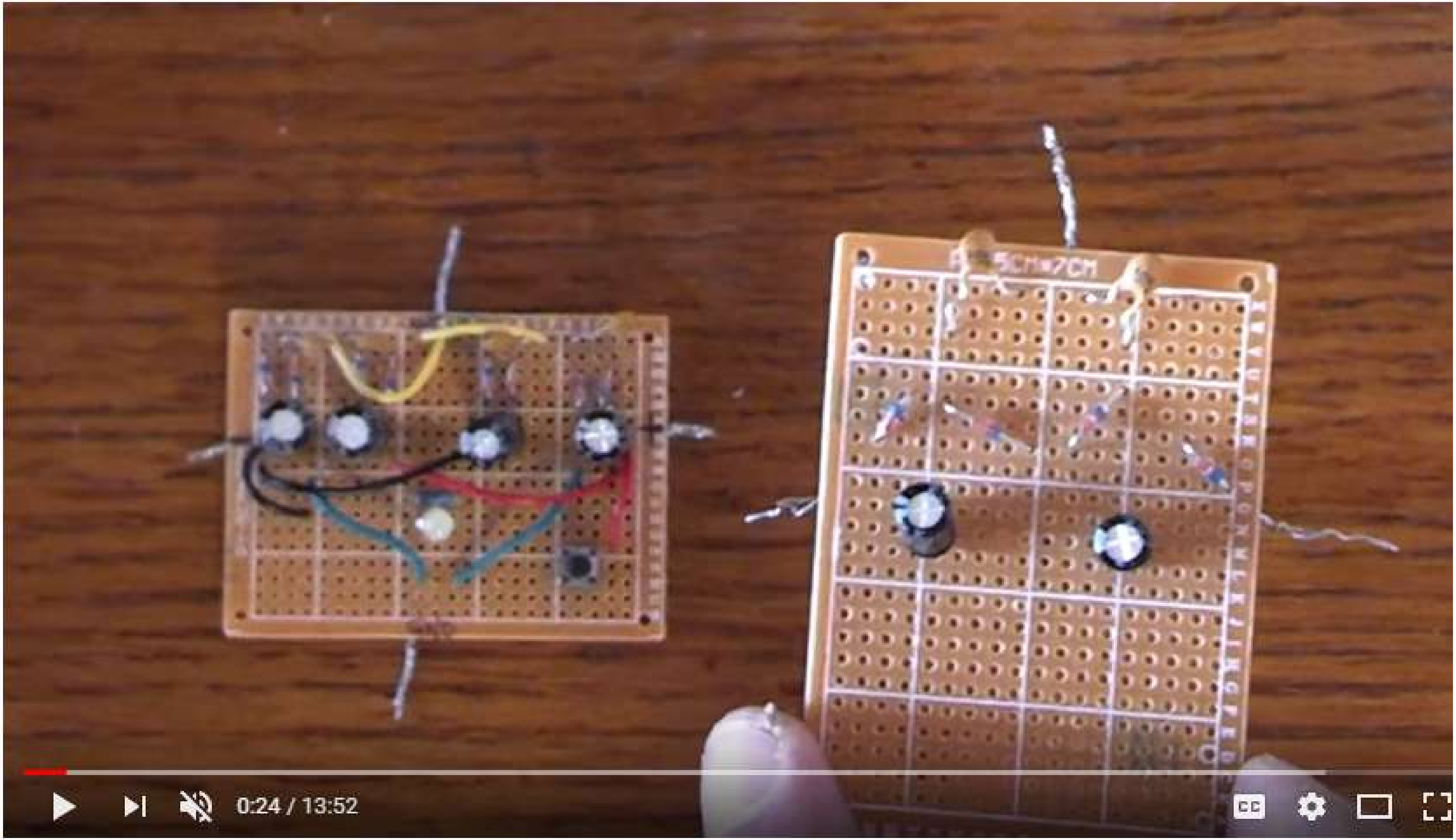
DL49
OFF
CE
DIGITAL CLAMP ON TESTER
45.8
COM

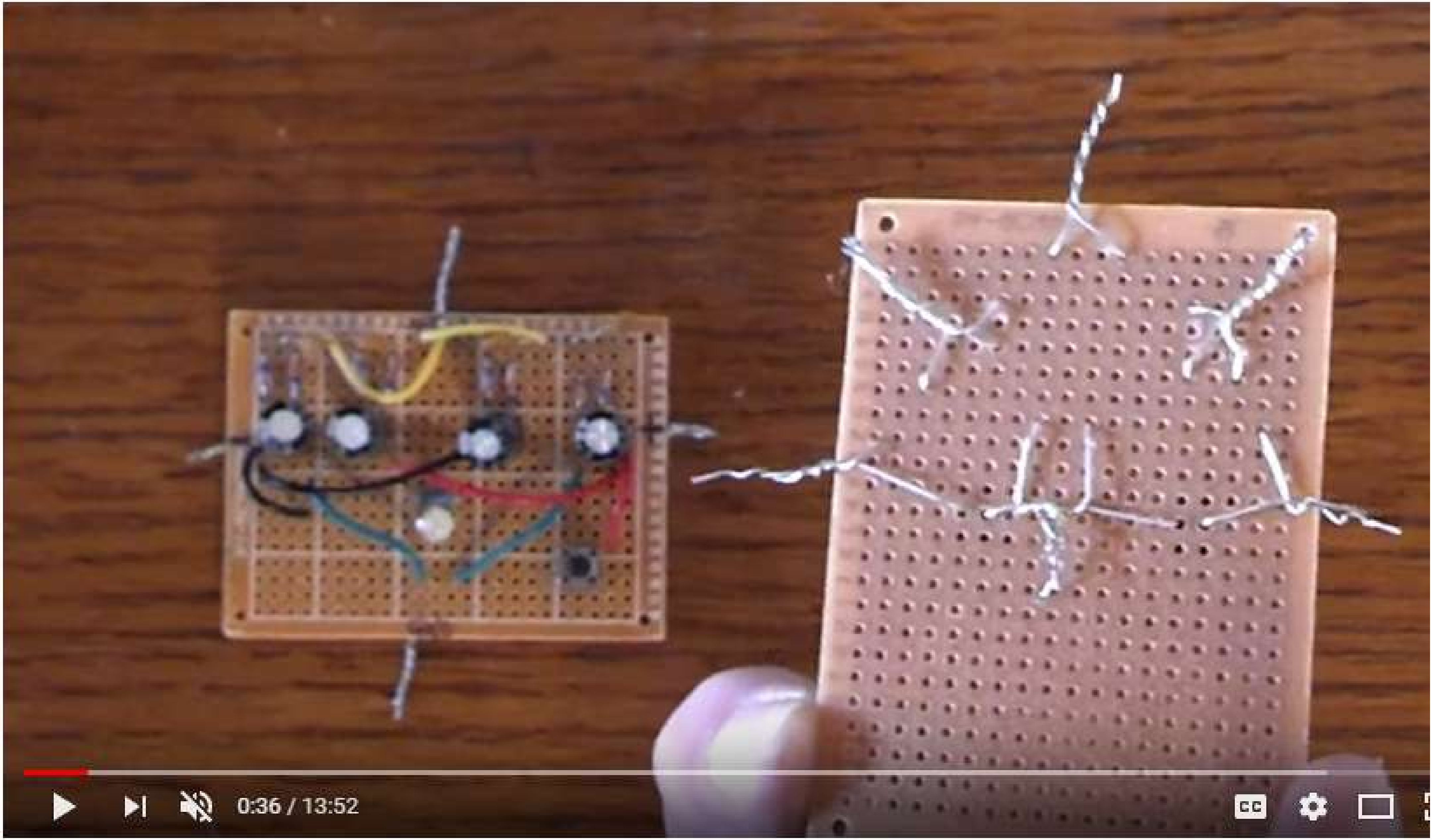


Tesla Free Energy Air Circuit

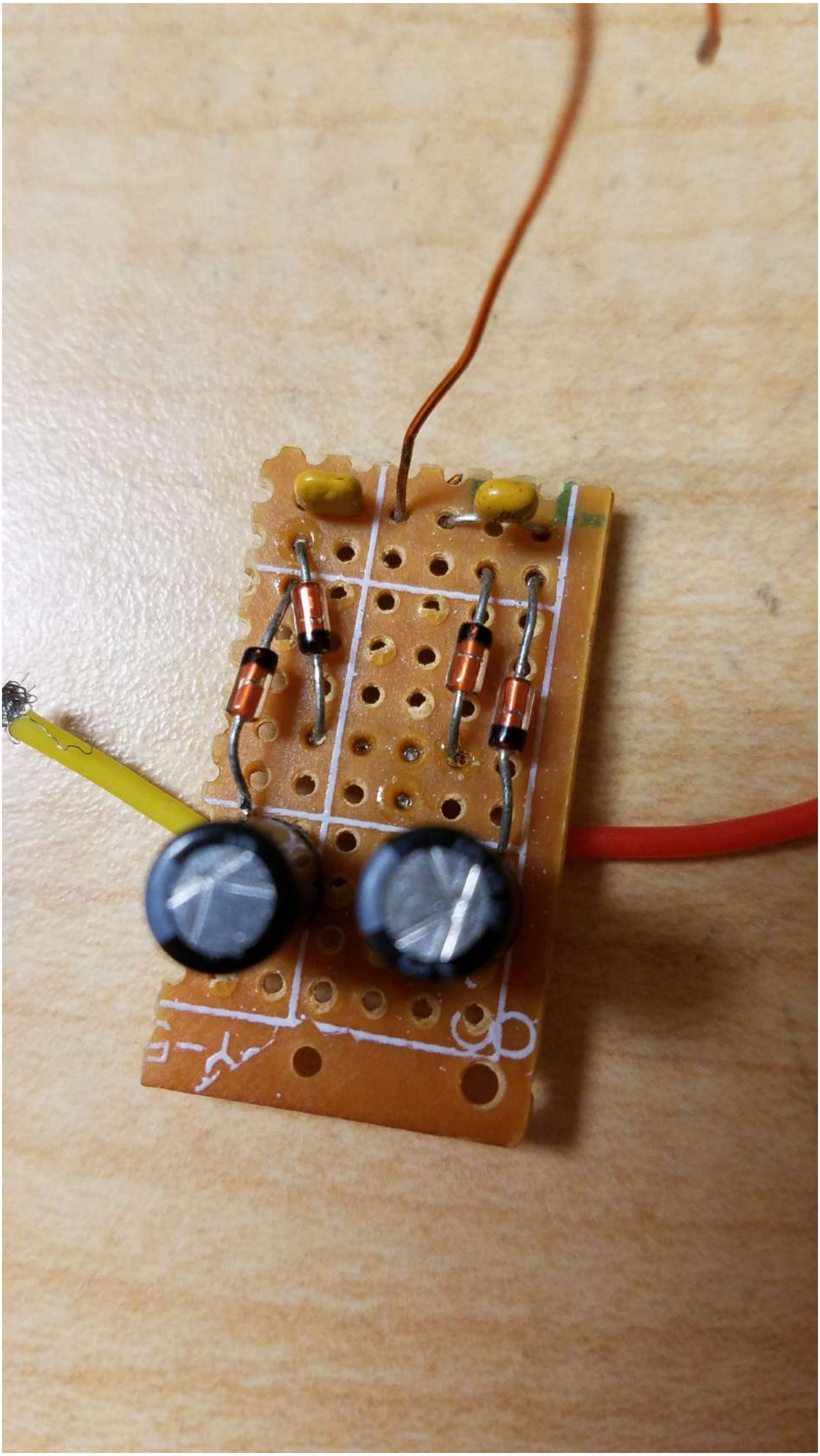

ANT
GND
1:06 / 13:52

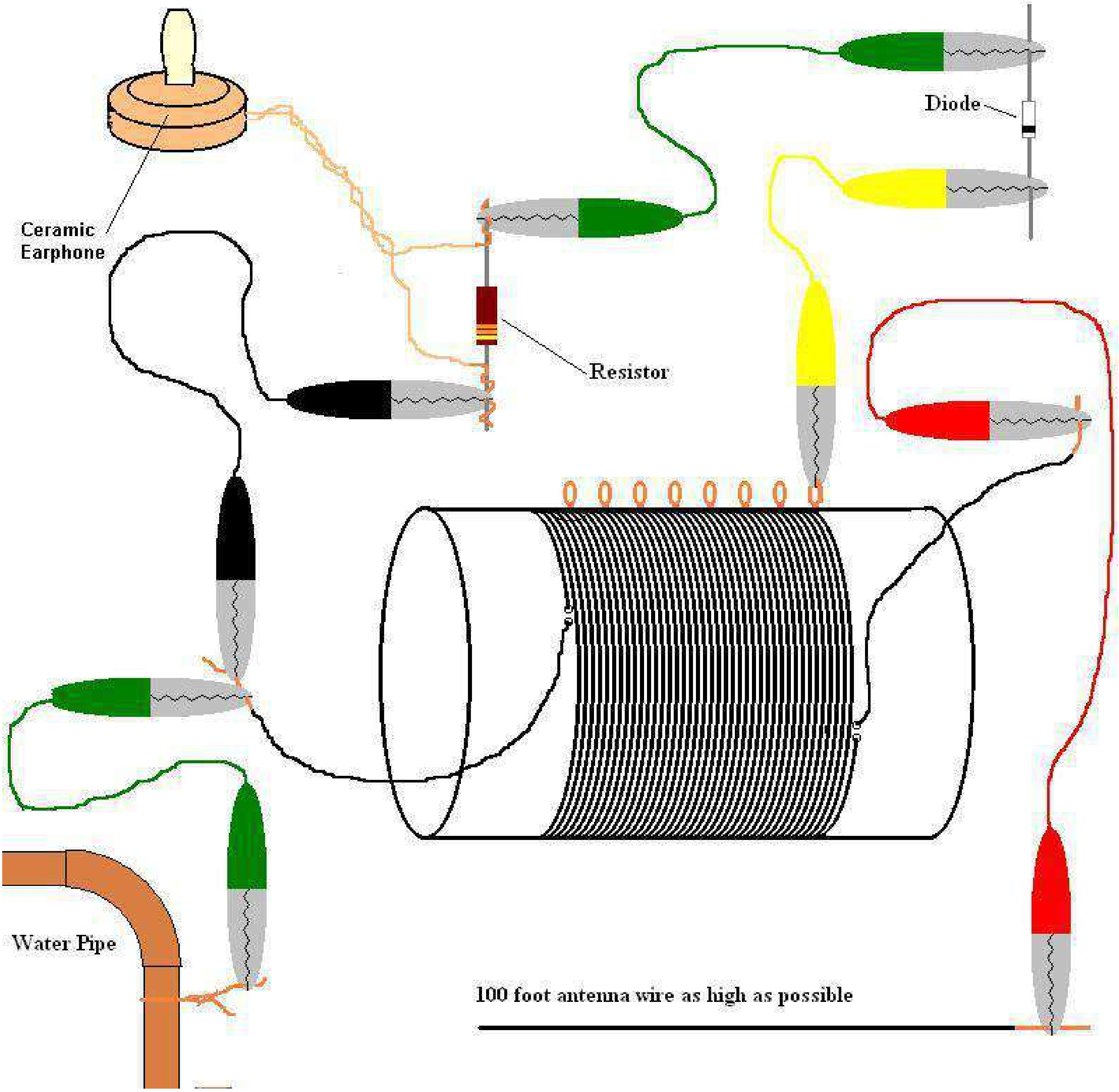


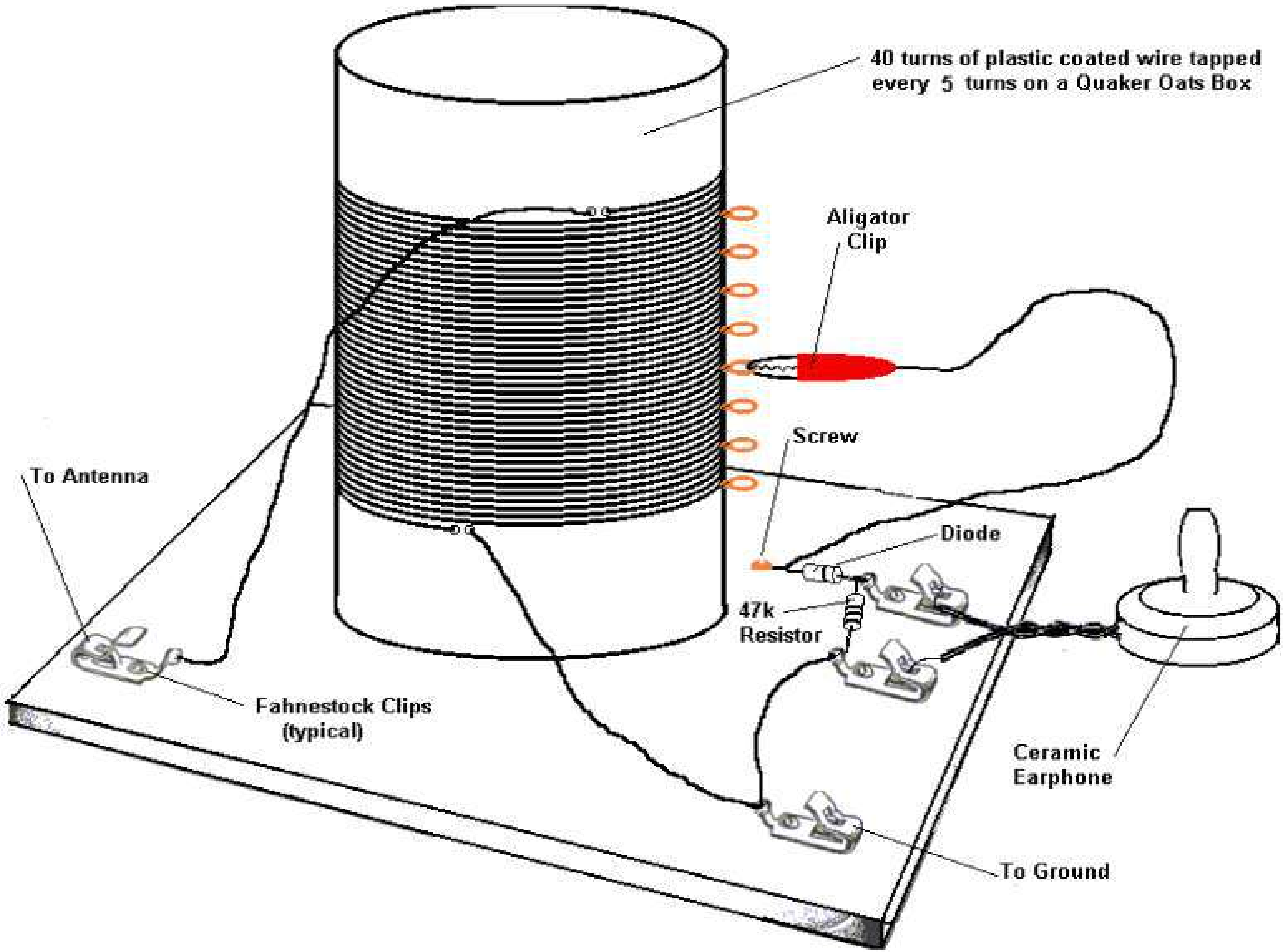
Tesla Free Energy Air Circuit



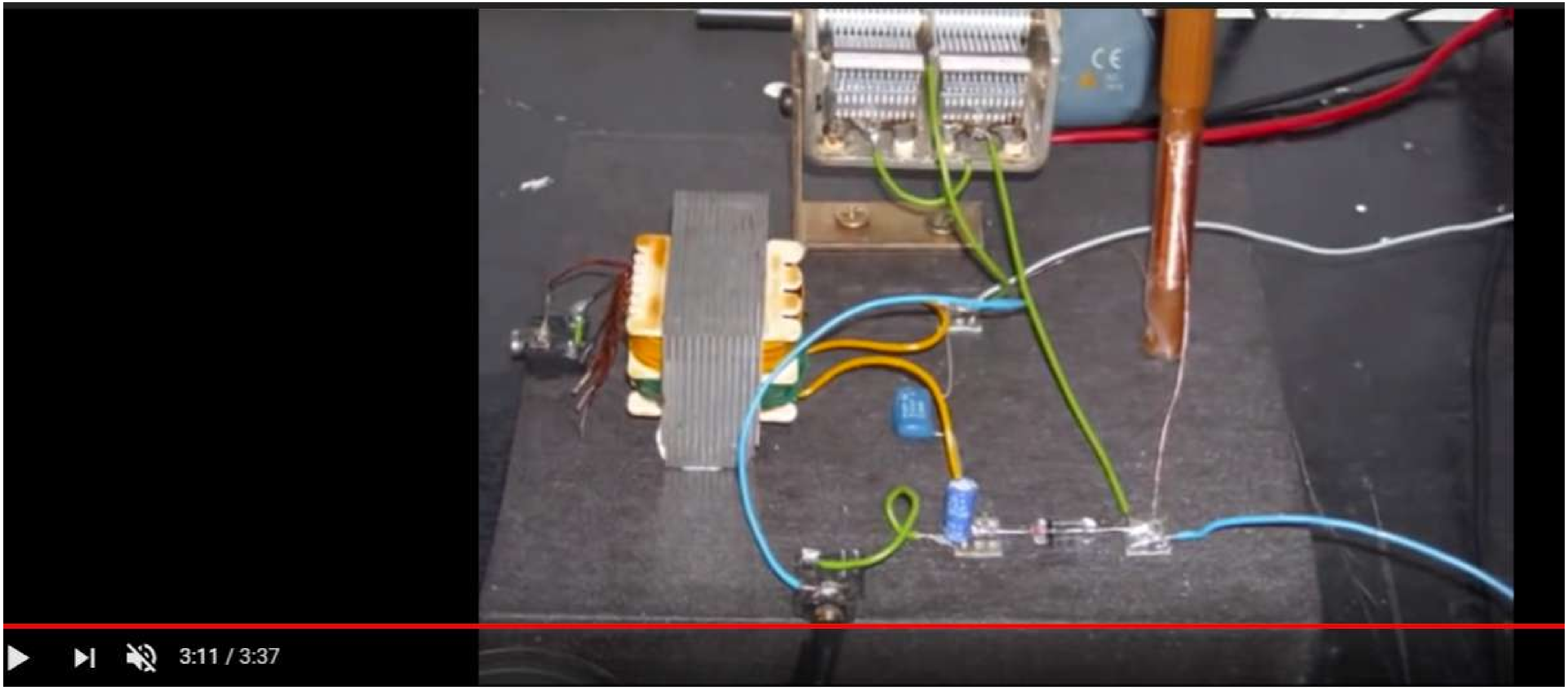
Tesla Free Energy Air Circuit




Ceramic Earphone
Diode
Resistor
Water Pipe
100 foot antenna wire as high as possible

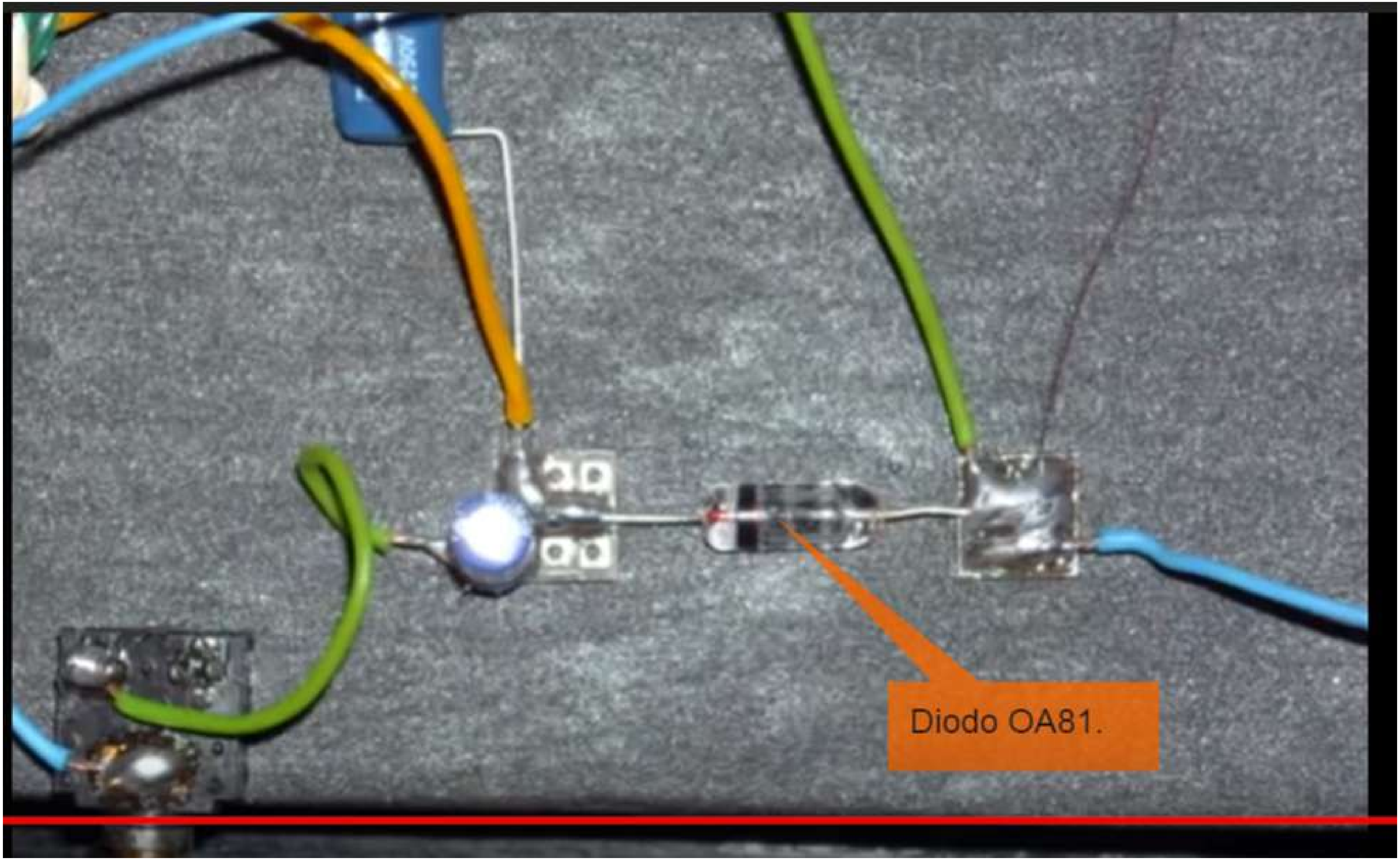


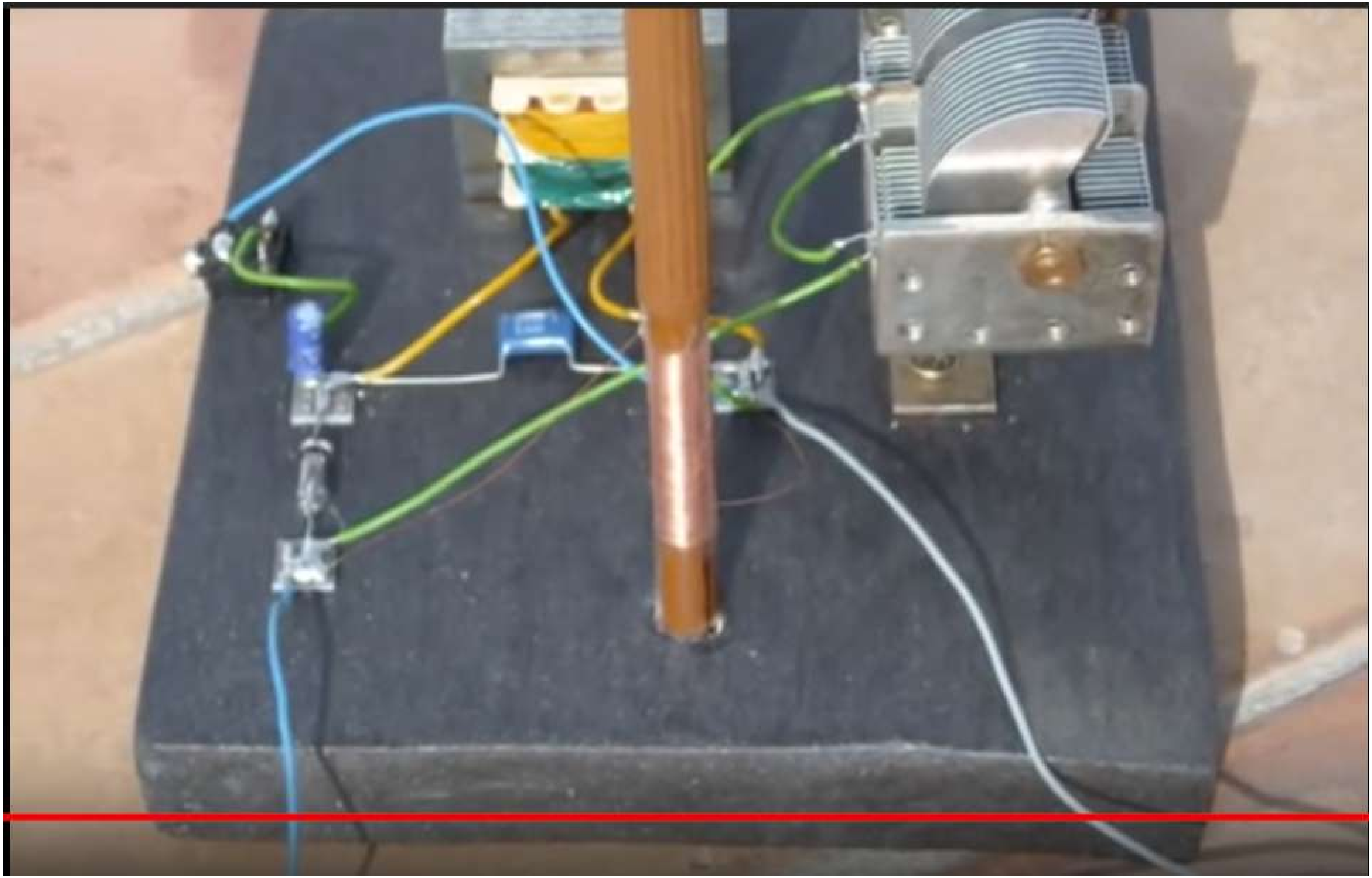
40 turns of plastic coated wire tapped every 5 turns on a Quaker Oats Box
Aligator Clip
Screw
Diode
47k Resistor
To Antenna
Fahnestock Clips (typical)
Ceramic Earphone
To Ground

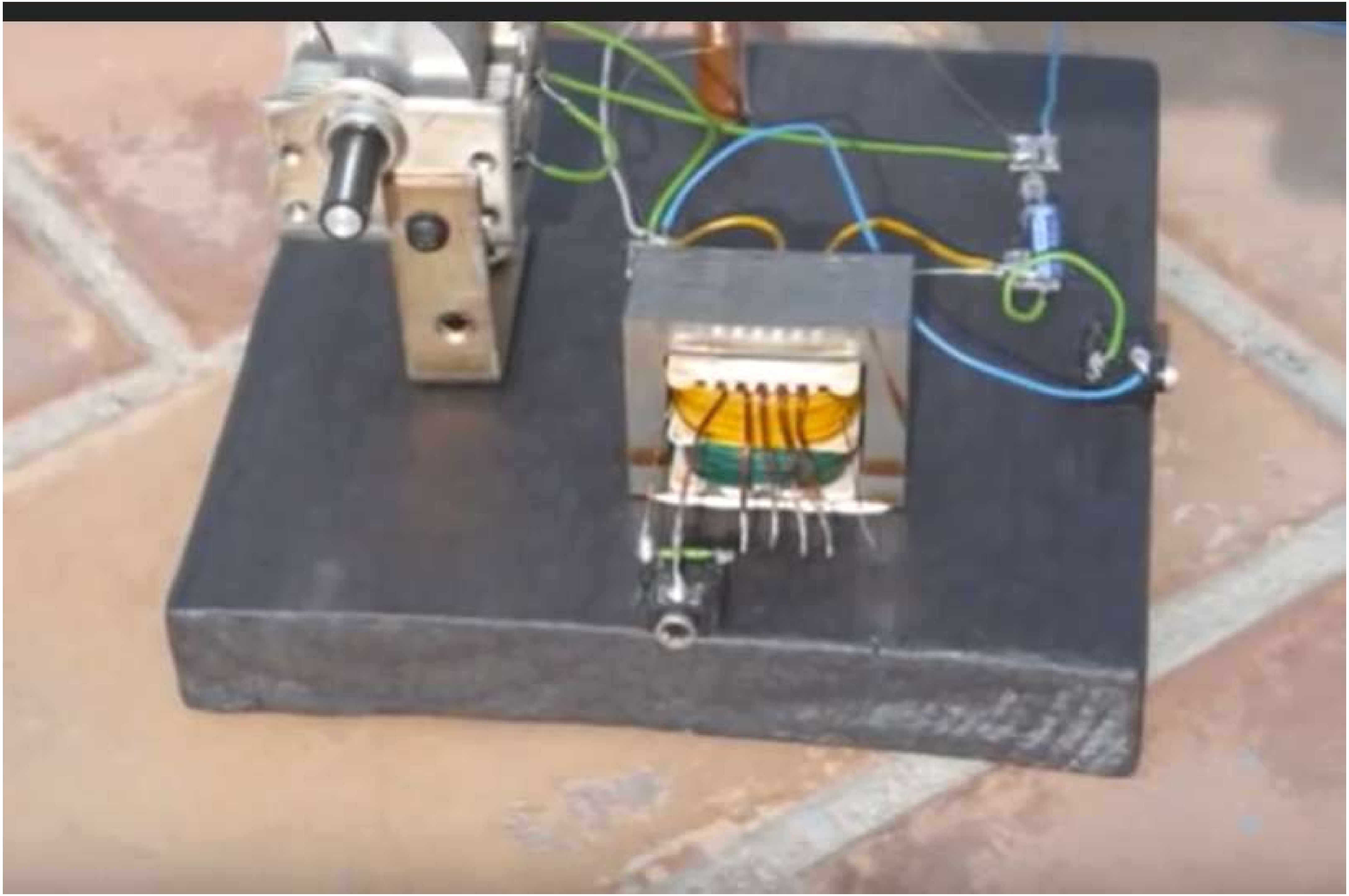


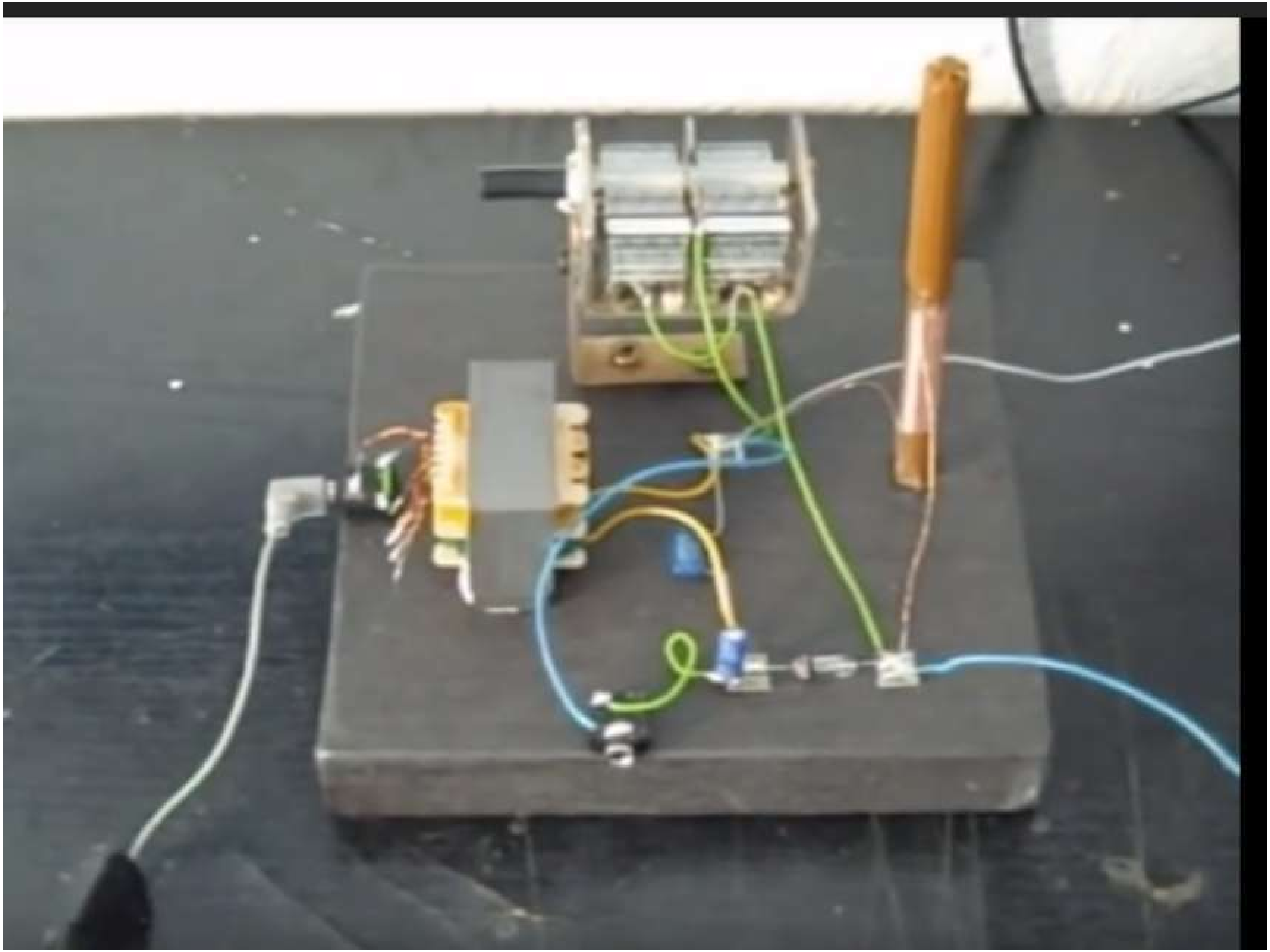
Up next

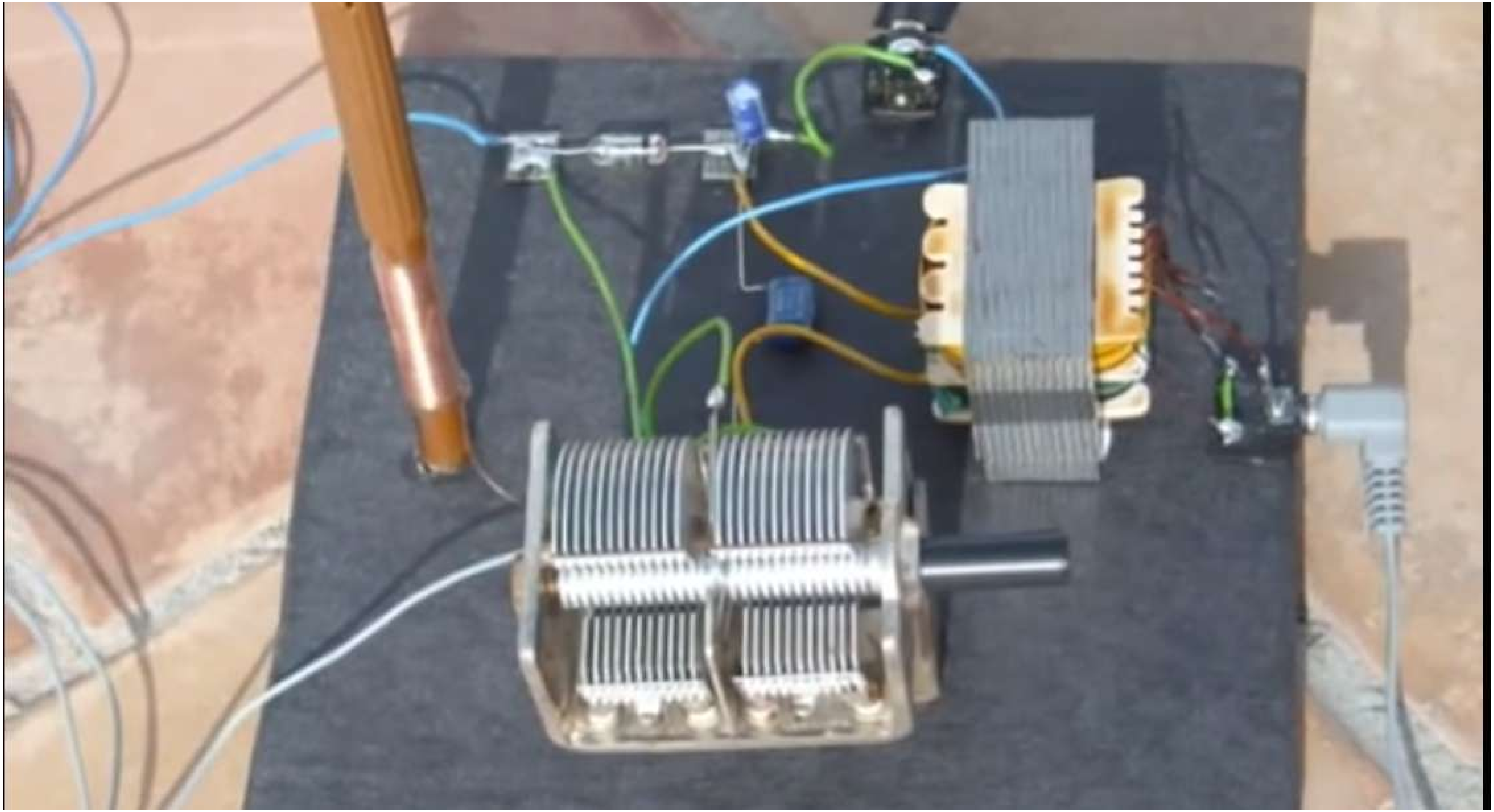
Radio Galena

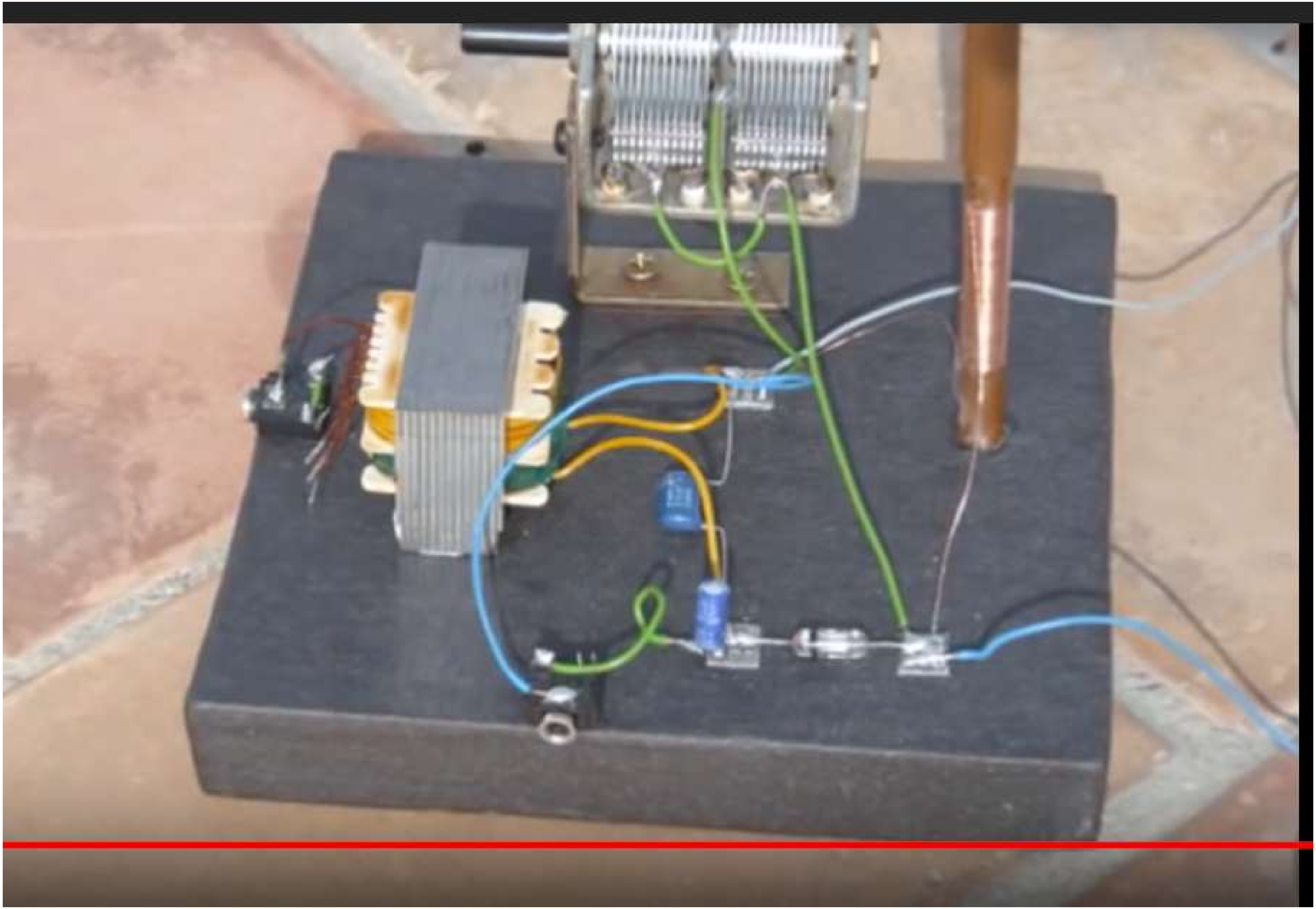

Diodo OA81.



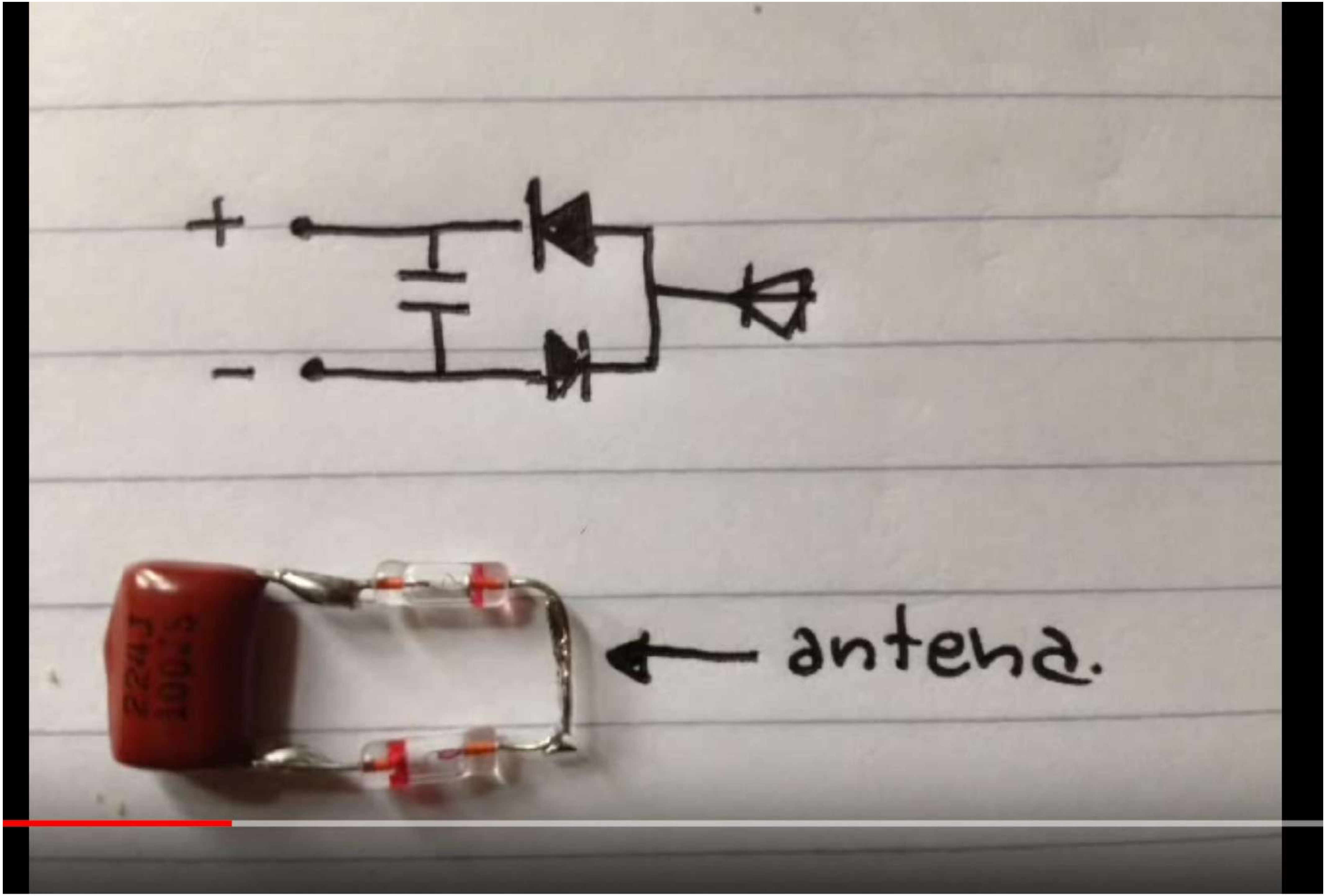


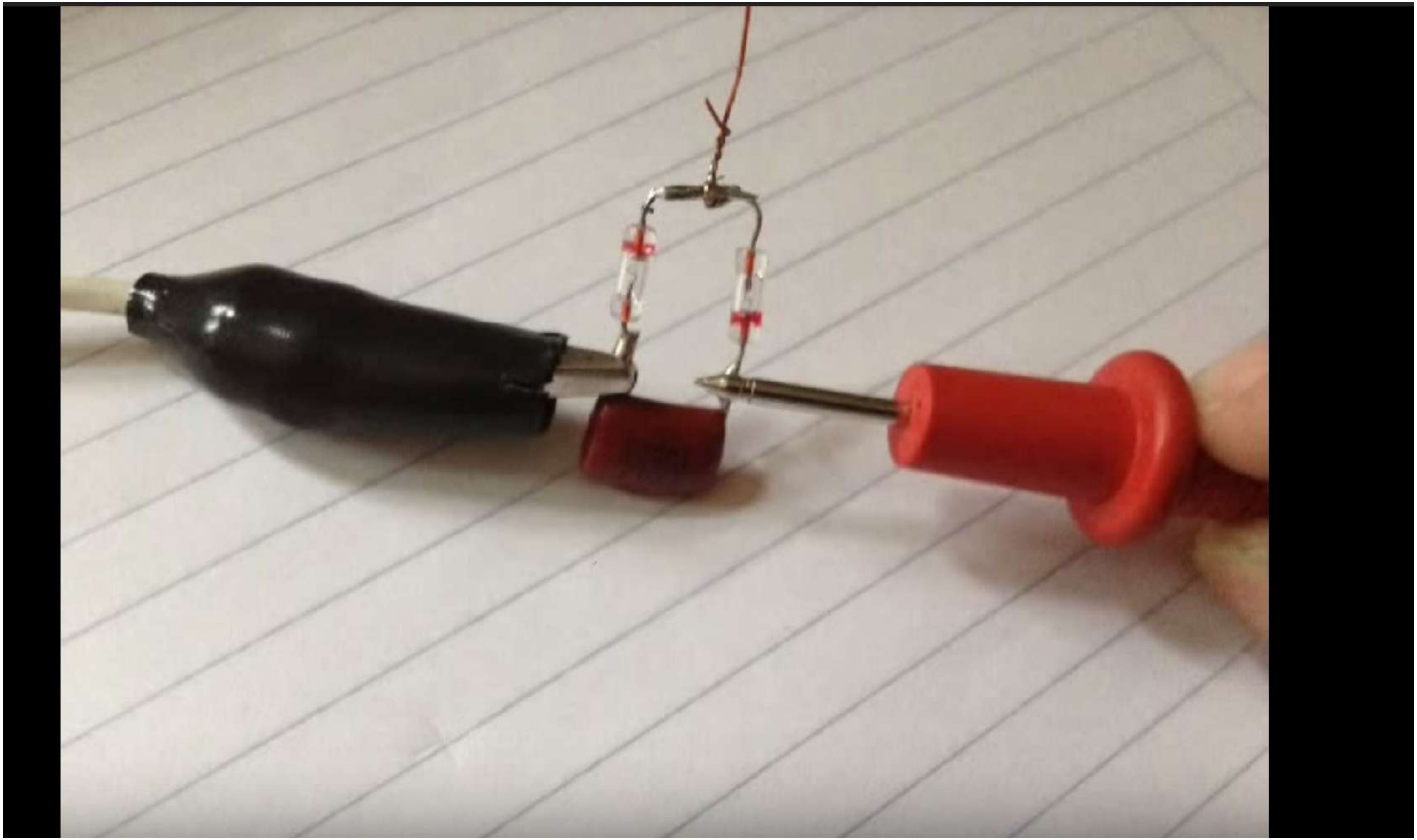






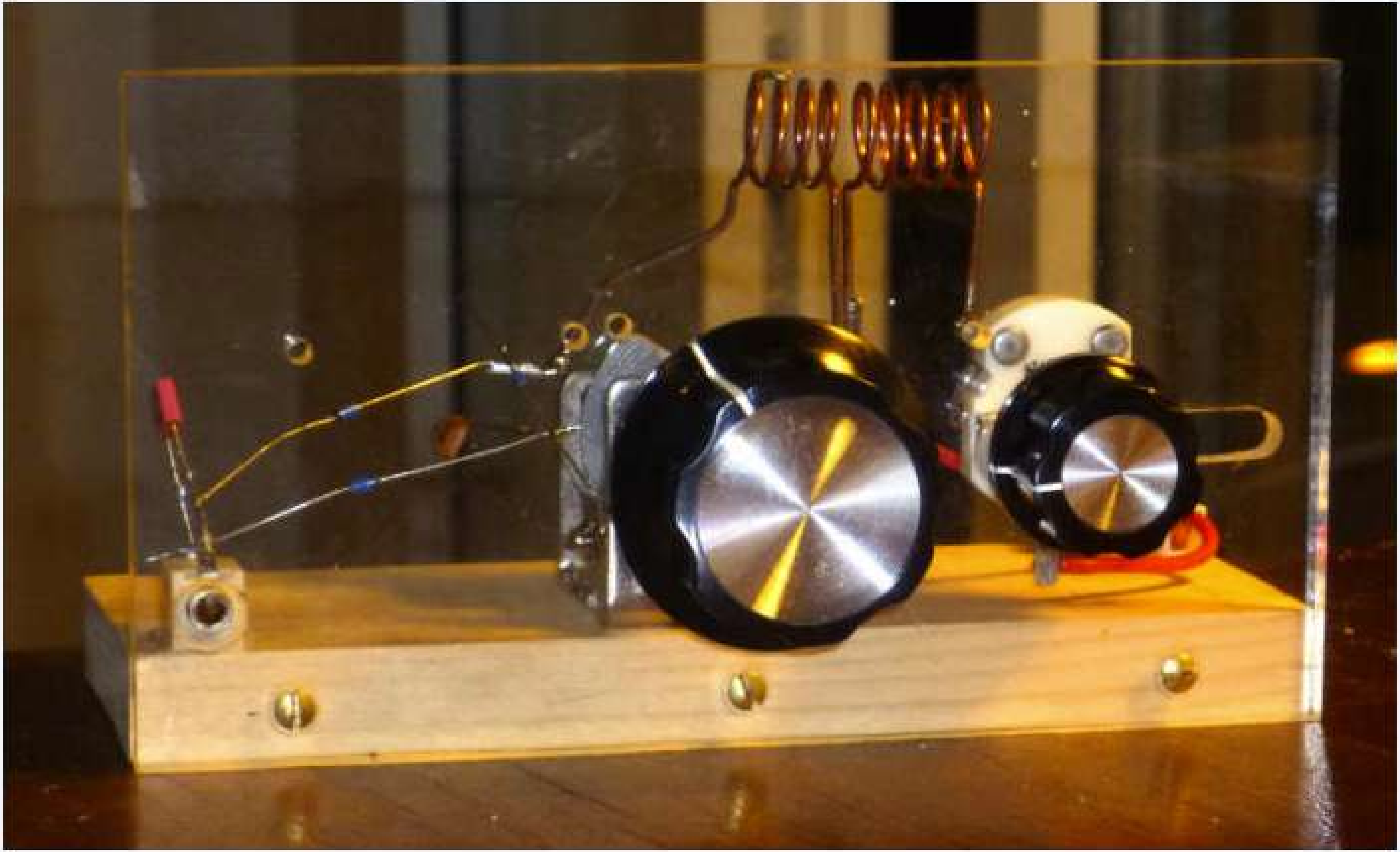

Sin las medidas correctas
↓
menor eficiencia.


+
-
antena.

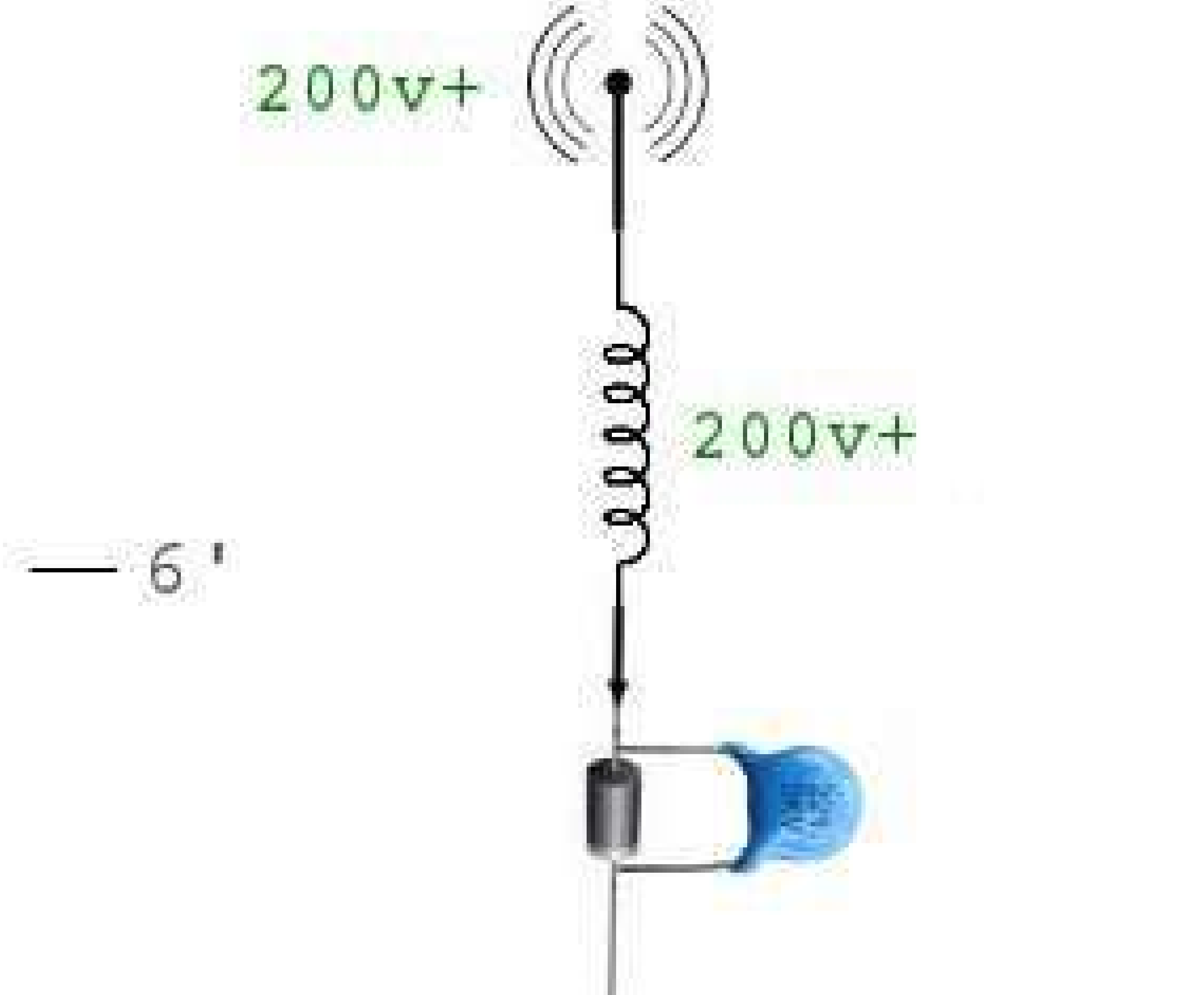


Ricevitore a cristallo per FM

Un progetto di Giacomo Cavuoti



Seguendo l'invito di Leonardo ho realizzato questo semplice ricevitore a cristallo per FM (fare clic sullo schema qua sotto per vederlo ingrandito).


200v+
200v+
6'

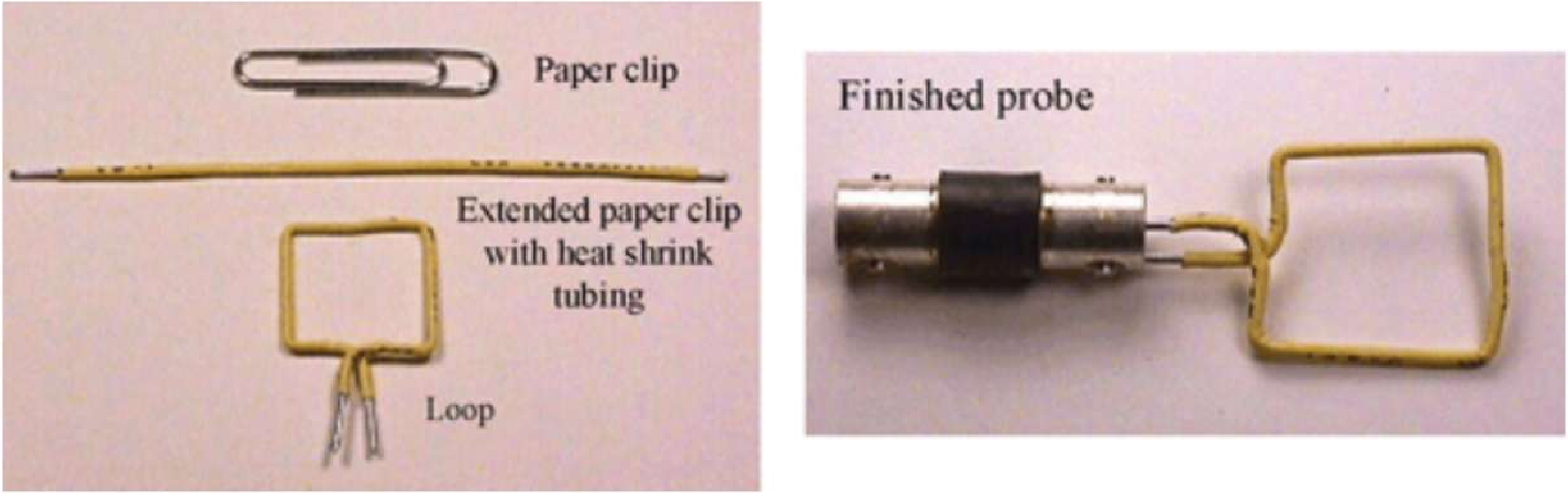
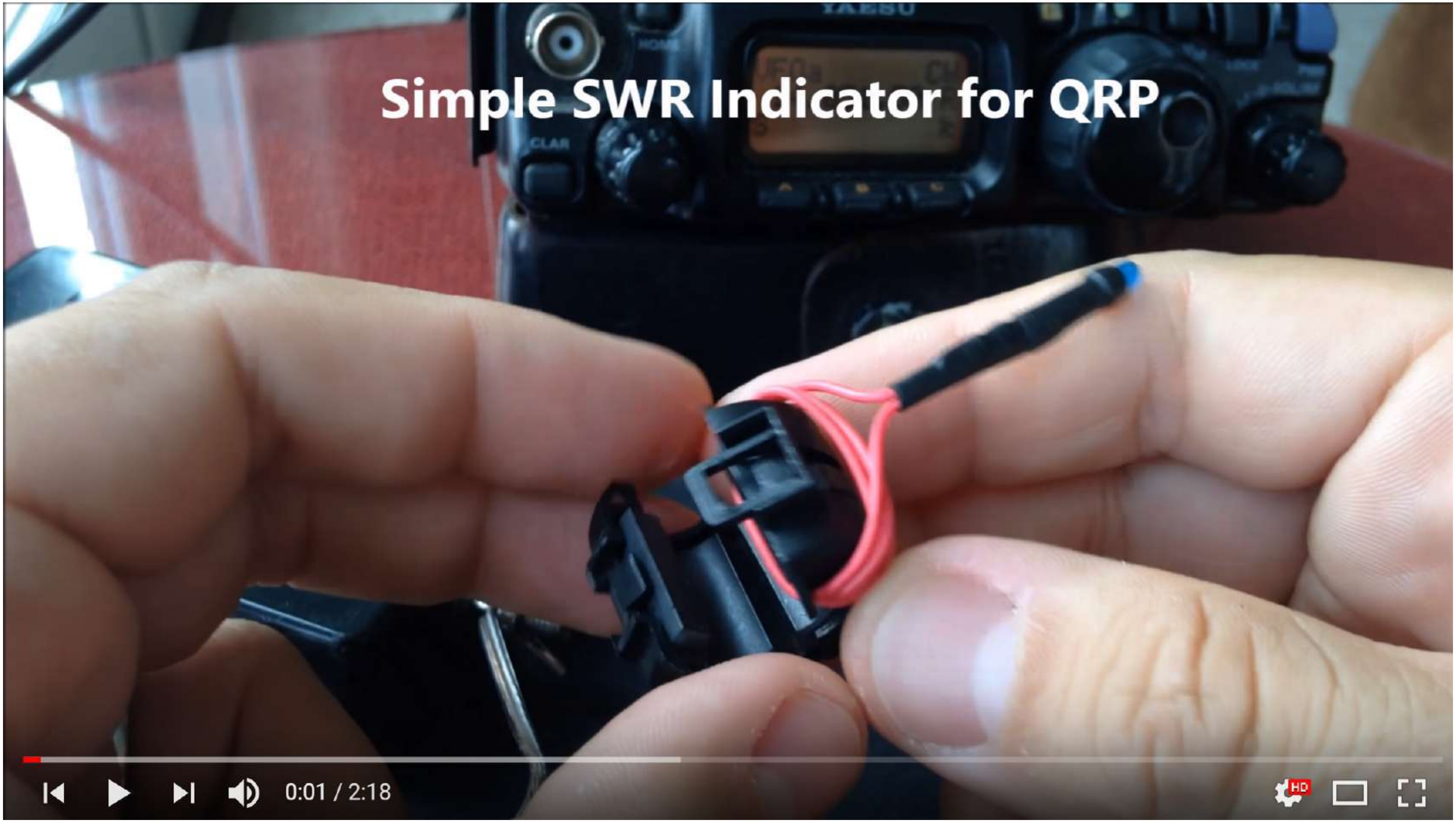
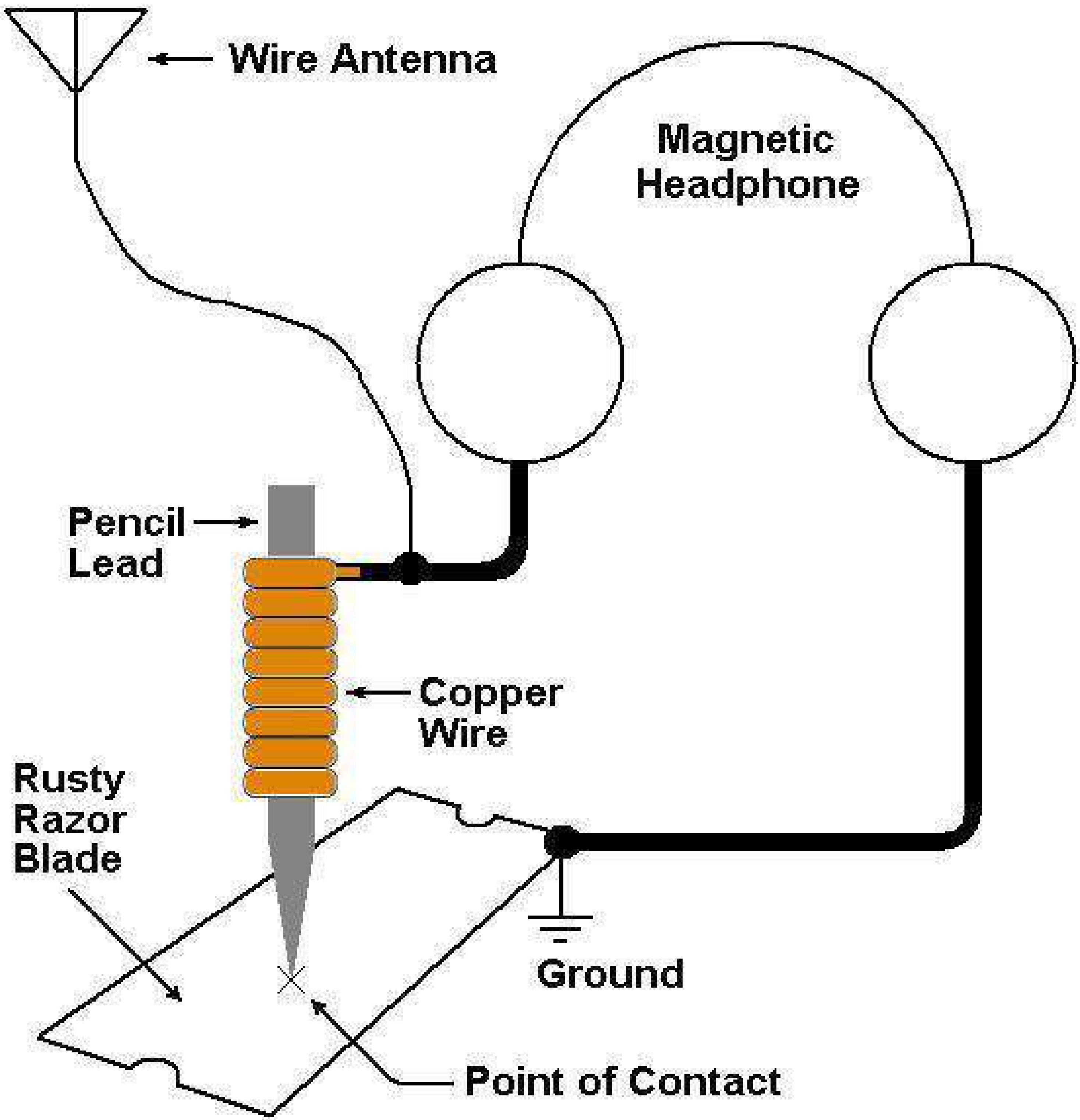
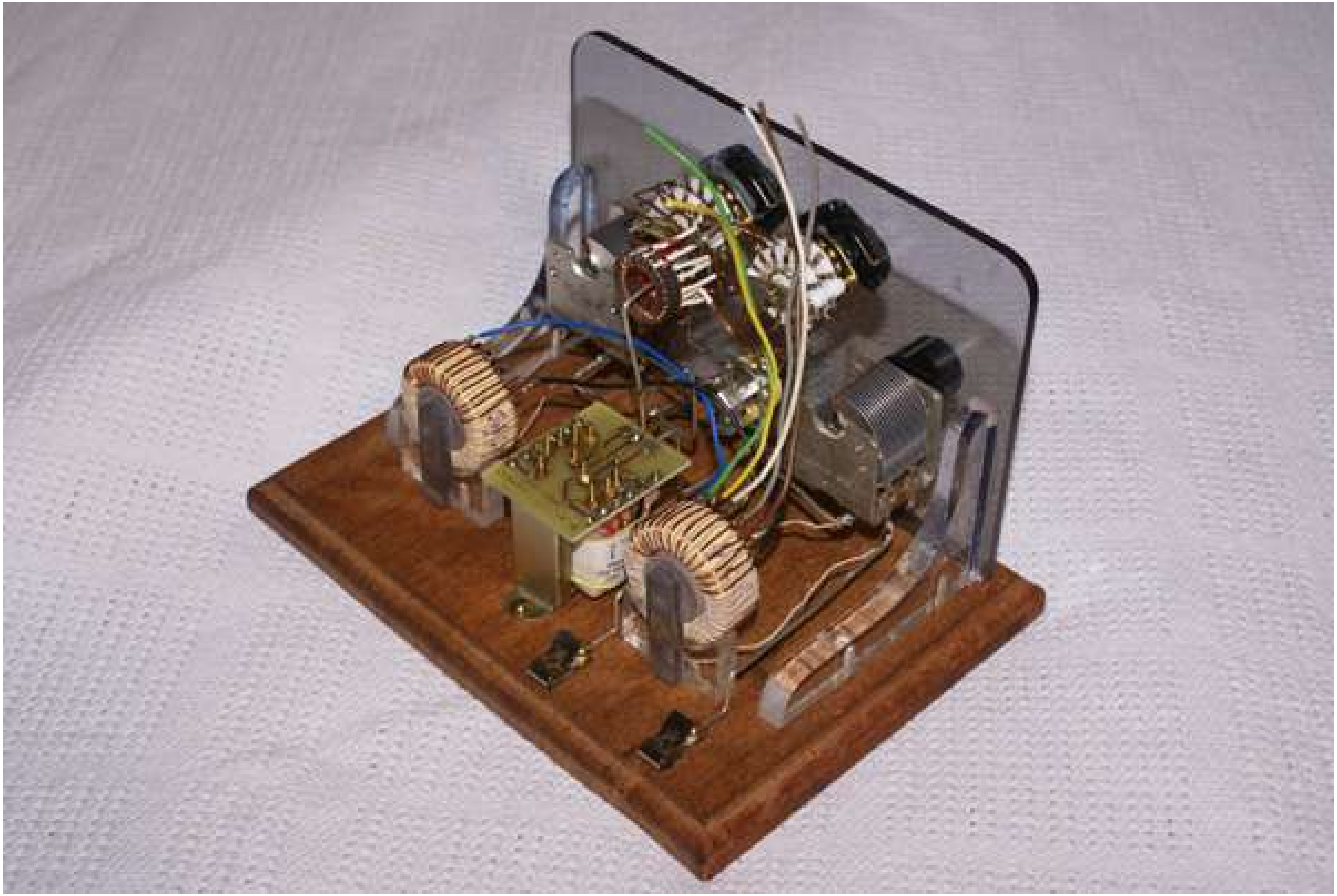


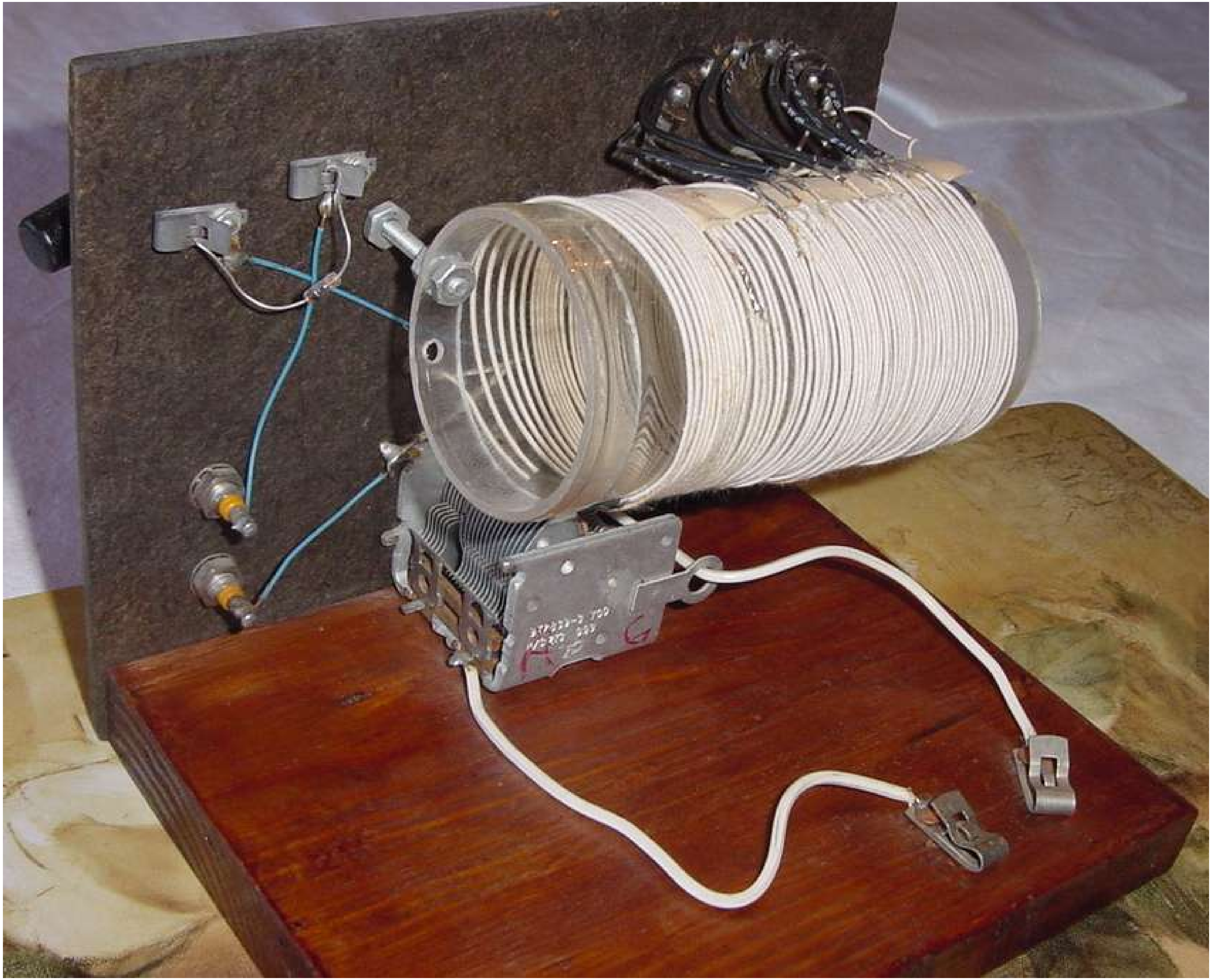
Figure 1: Magnetic field probe build from a paper clip.


YAESU
HOME
SEL
CLAR
VFOa CW
14.054.00 R
SW
A
B
C
V/M
LOCK
PWR
AF SQL/RF
ANT
C-POISE
1:54 / 2:18
HD

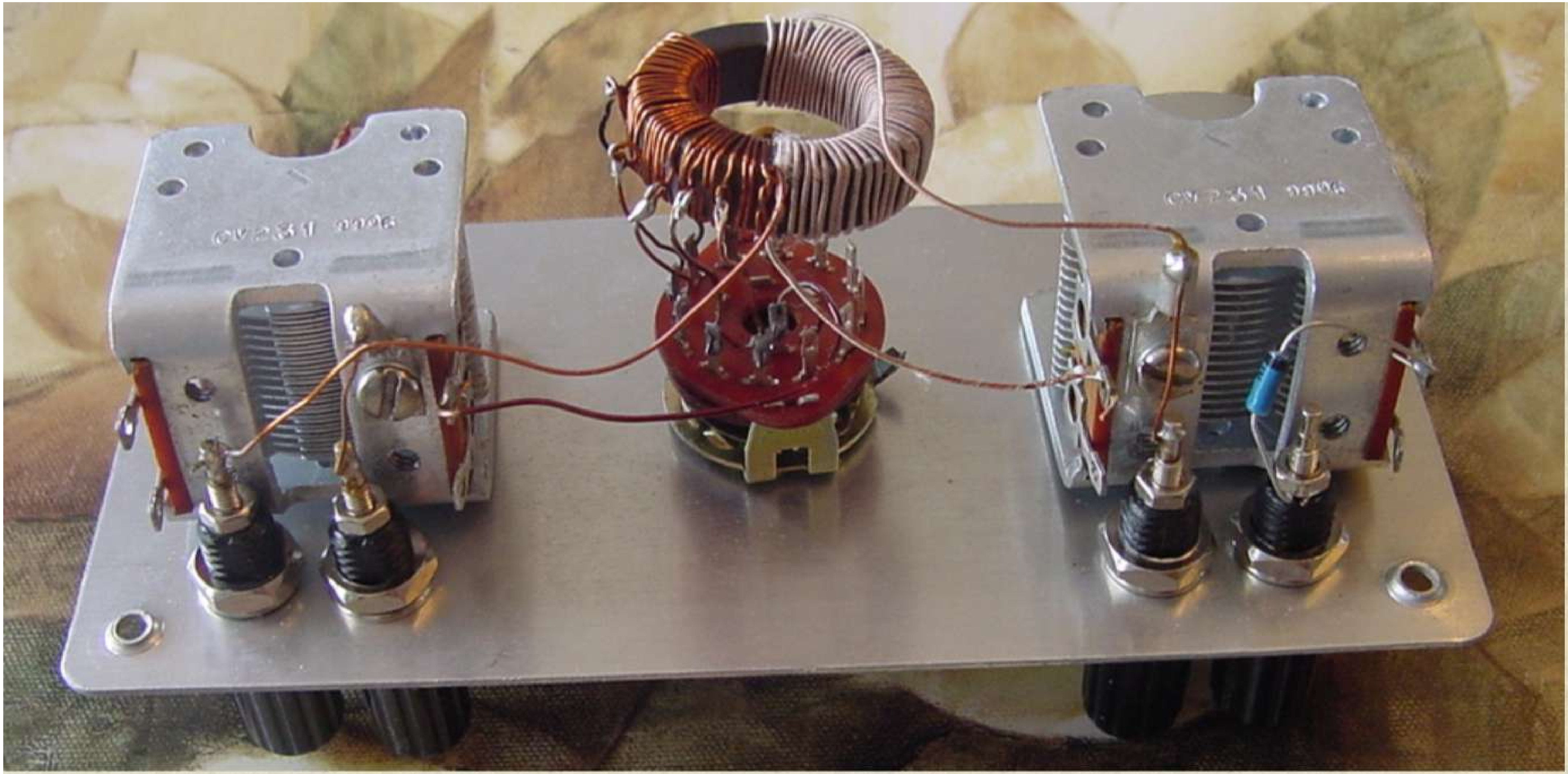

Simple SWR Indicator for QRP
YAESU
CLAR
0:01 / 2:18
HD


Wire Antenna
Magnetic Headphone
Pencil Lead
Copper Wire
Rusty Razor Blade
Ground
Point of Contact

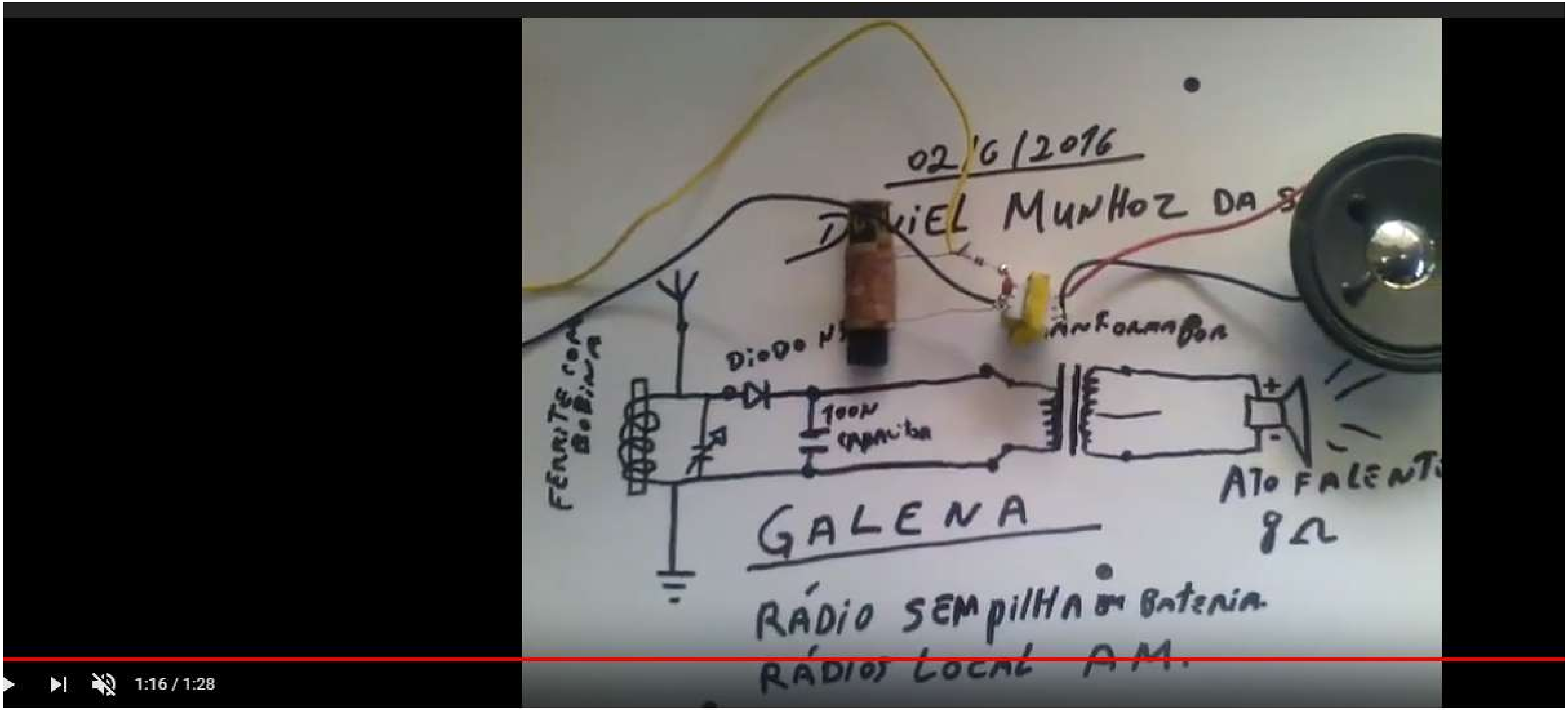




Another Prototype similar to the Heathkit using toroid coil

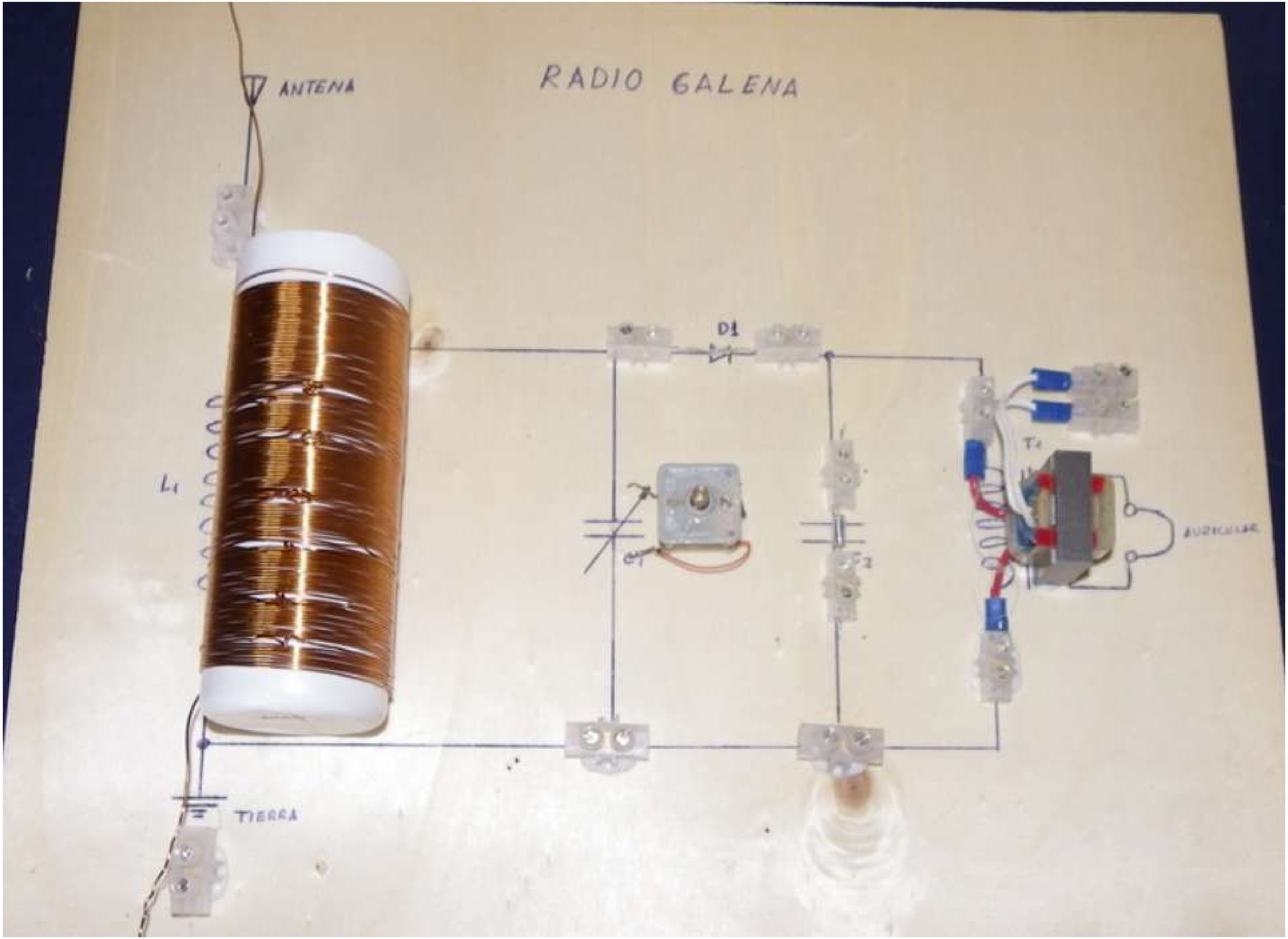


This is a dual tuned crystal set made in a box like the CR-1, just a fun prototype I made a few years back. It pulls in AM stations loud and clear.

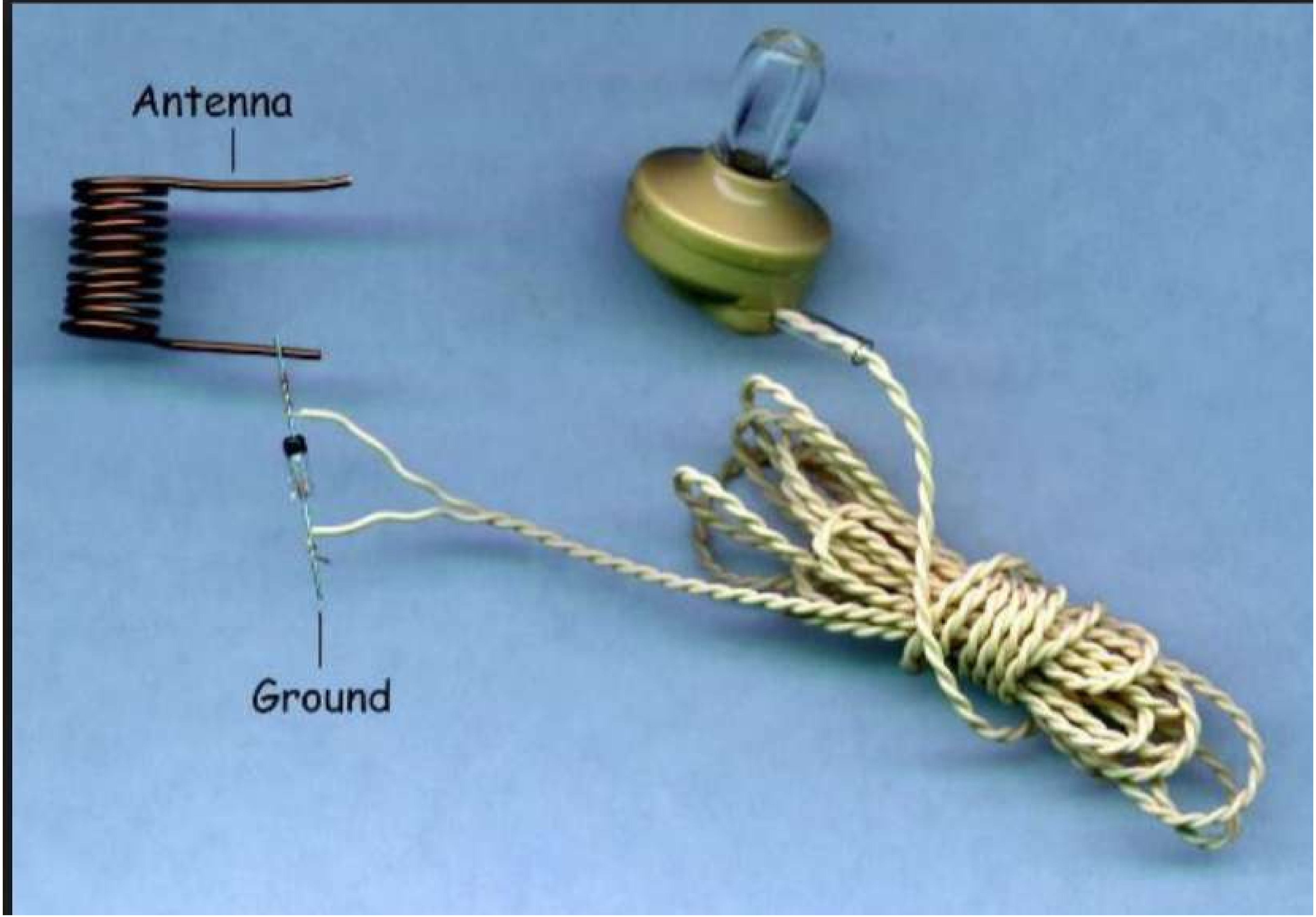


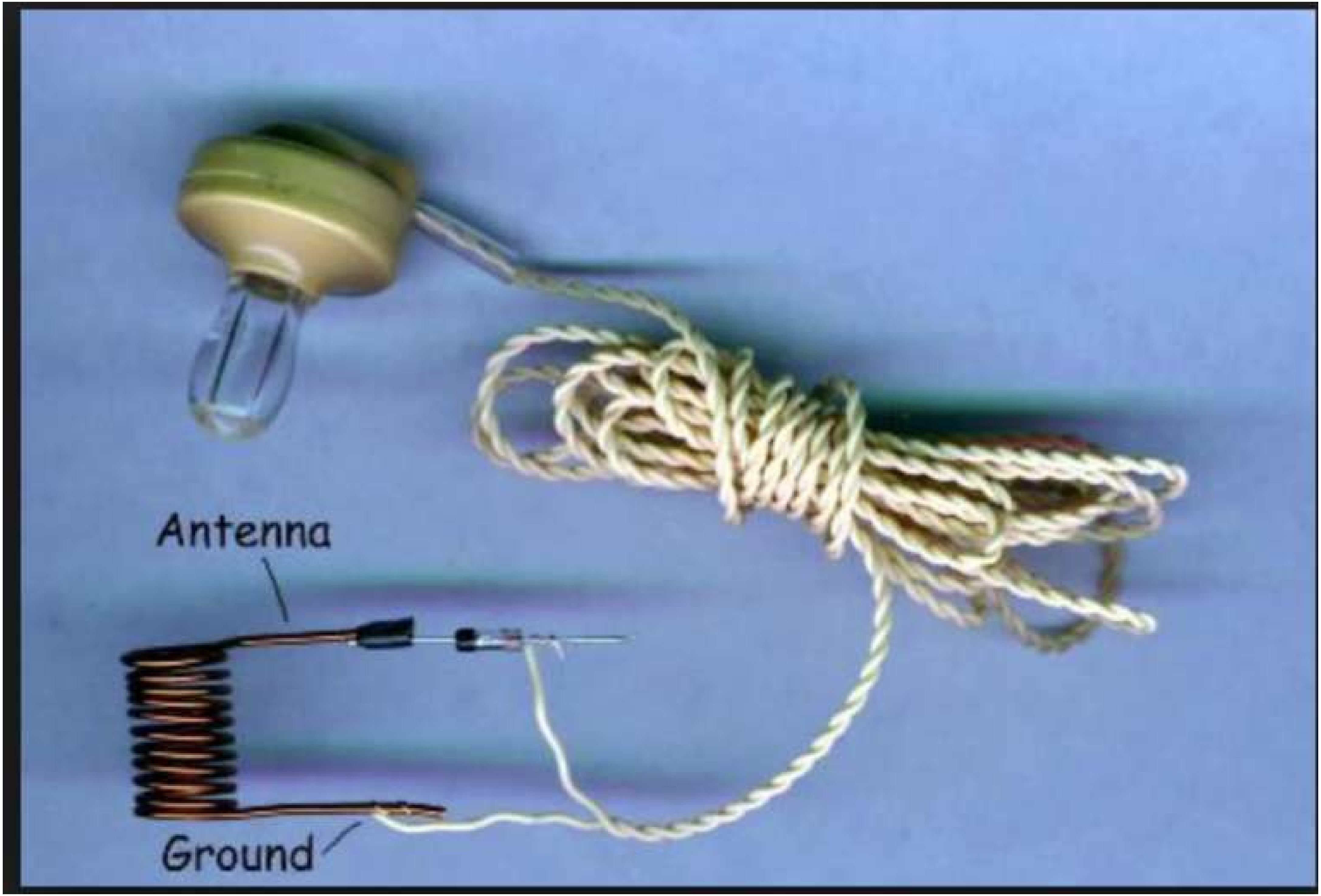
Up next

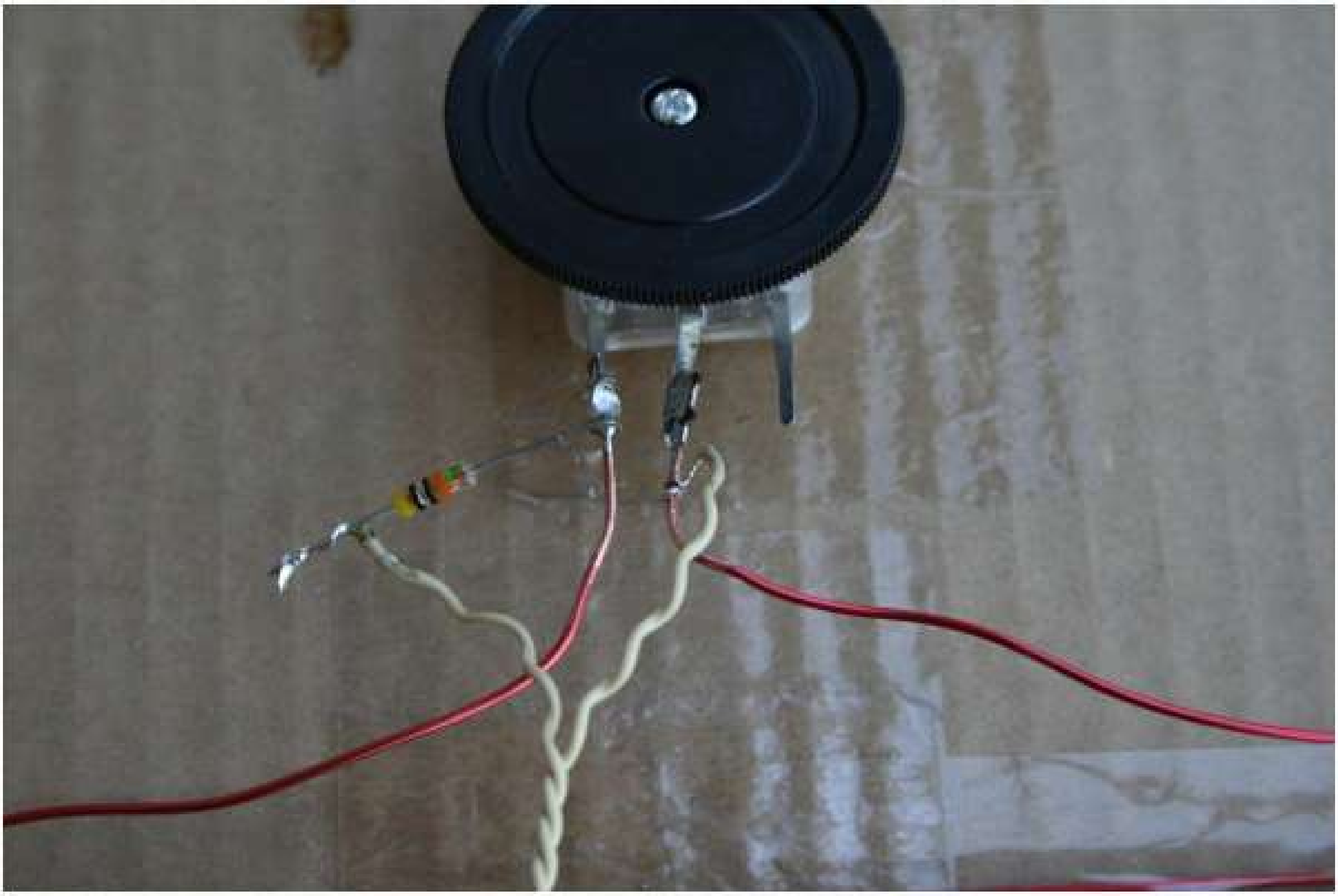
GALENA , Rádio AM ,sem pilha.



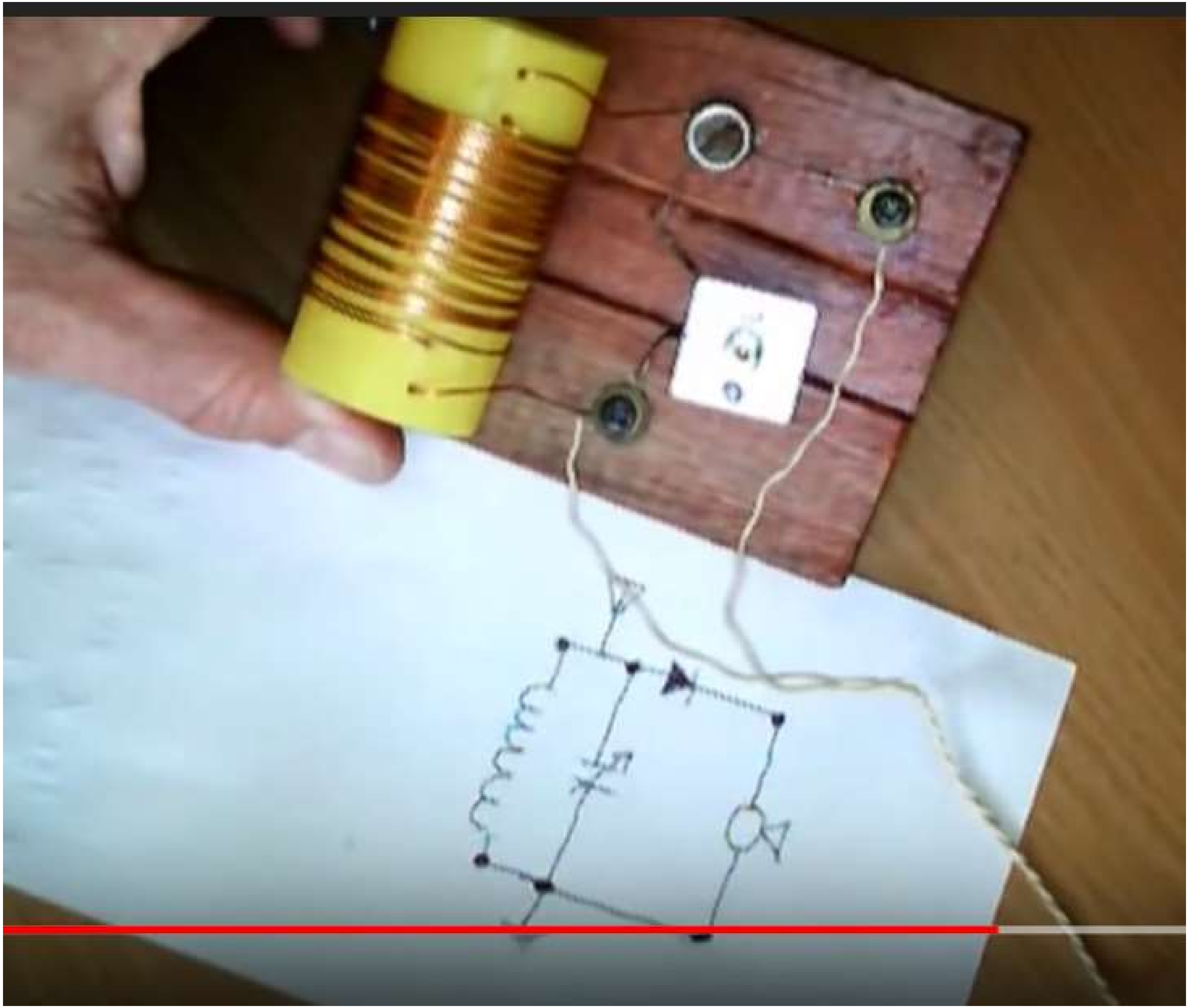
RADIO GALENA
ANTENA
D1
L1
C1
T1
AURICULAR
TIERRA

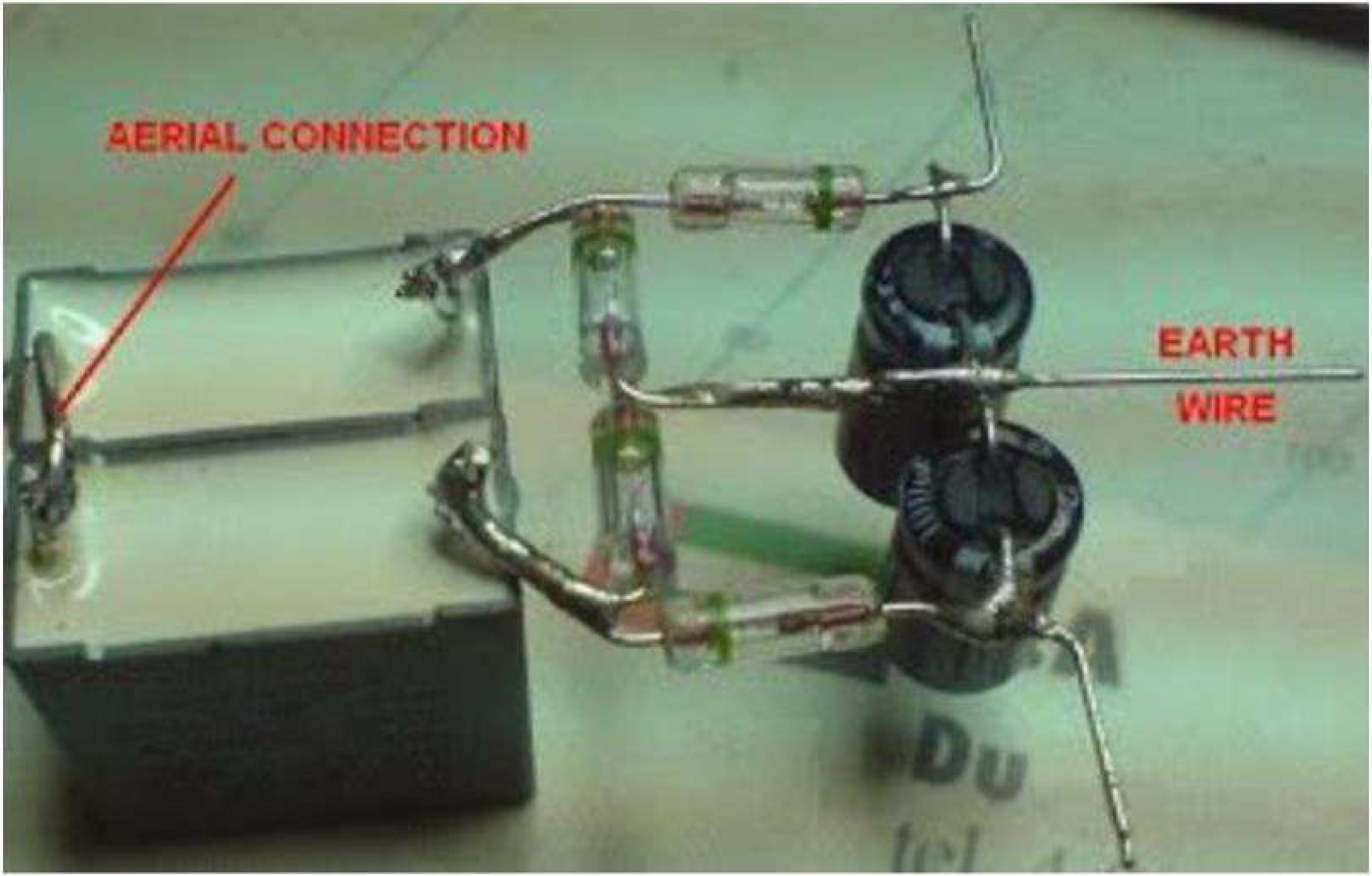

Antenna
Ground

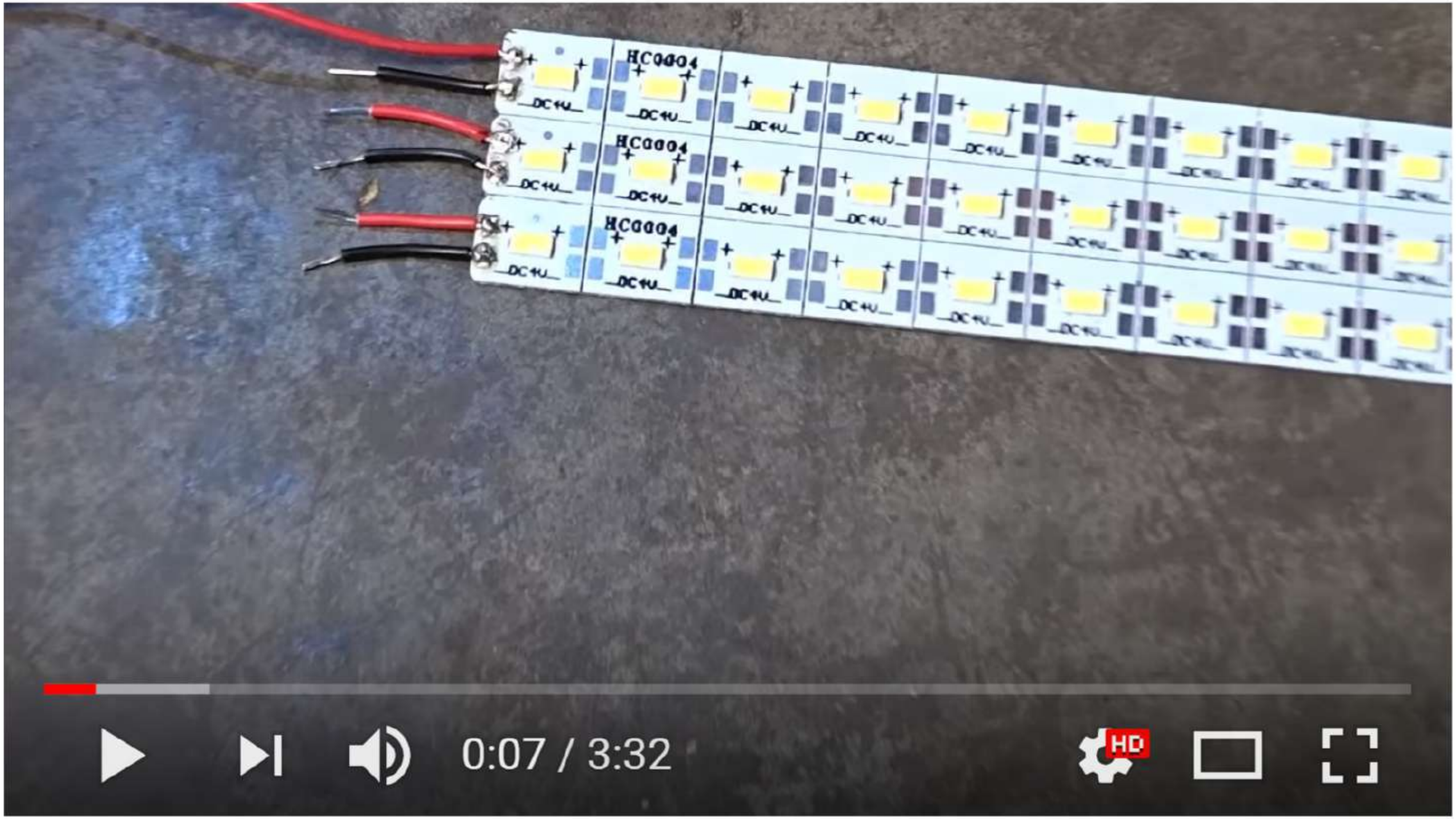

Antenna
Ground



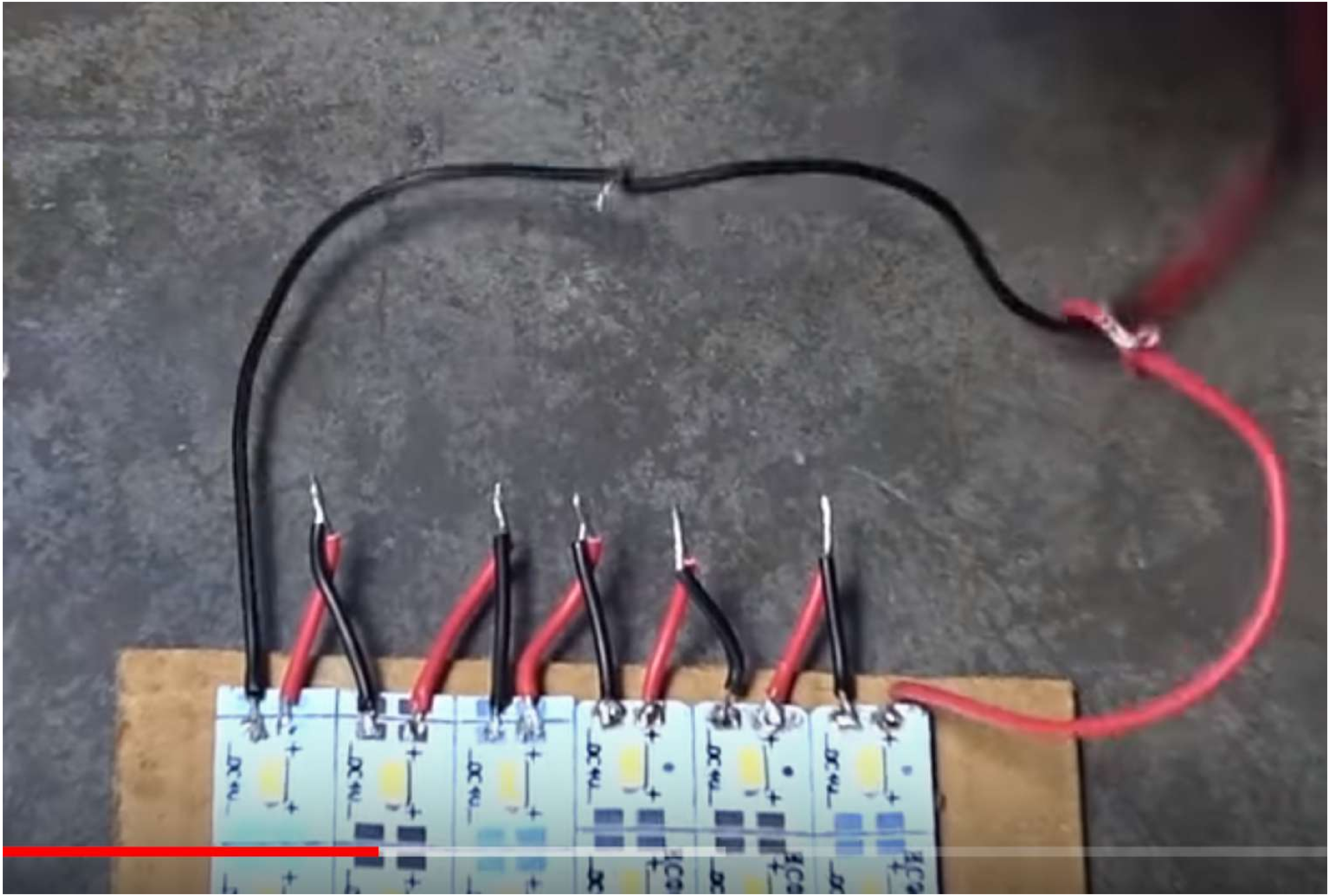
Click on photo for a larger picture

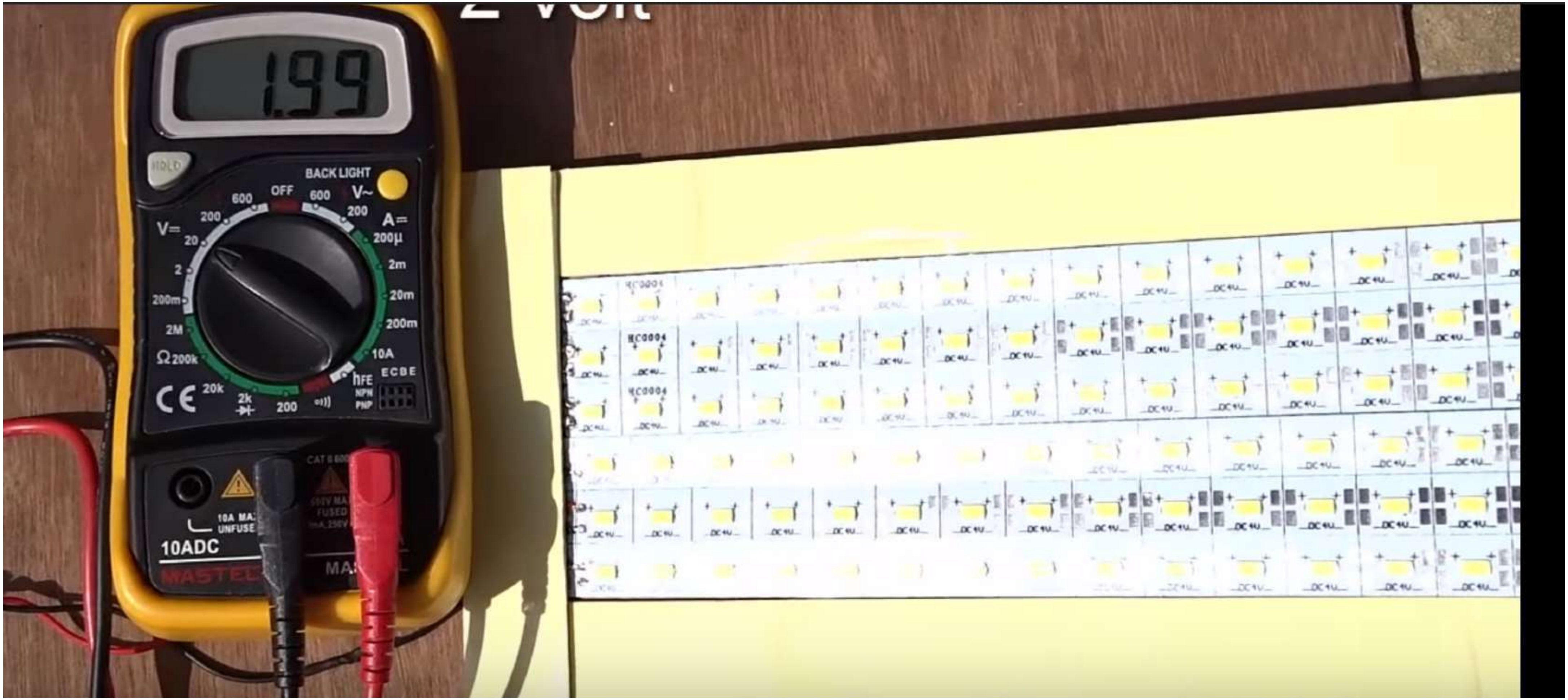



AERIAL CONNECTION
EARTH
WIRE

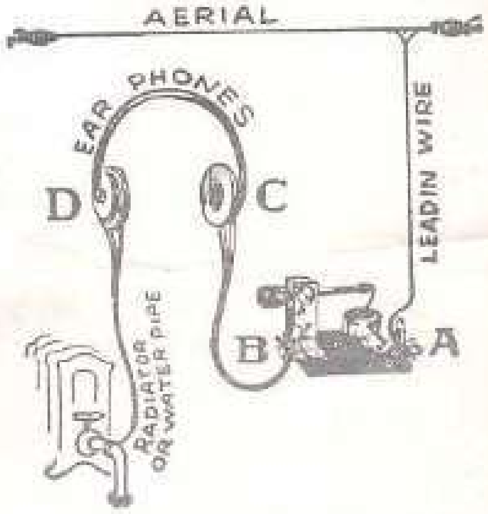


New idea - You can make Solar Cell from LED (Free Energy)




1.99
HOLD
BACK LIGHT
OFF
V~
A=
V=
10A
ECBE
10ADC

Instructions for using
Philmore Crystal Radio Detector



This Detector is a radio in itself, as it is possible to get reception with it alone, provided you are within 25 miles of a broadcasting station. Under very favorable conditions reception is sometimes possible at much greater distances.

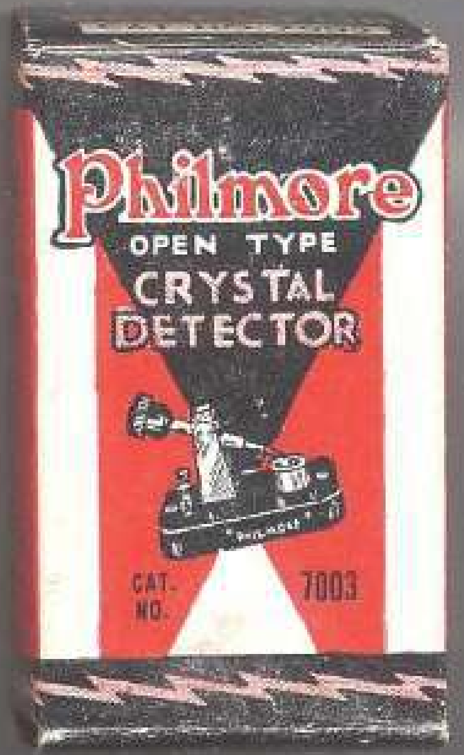
In order to get reception, you need an aerial kit and headphones. The AERIAL may consist of 100 to 125 feet of copper wire and two insulators. Attach insulators to each end of the wire. Stretch the wire allowing as little sag as possible. No part of this wire should touch any portion of the building or any other obstruction.

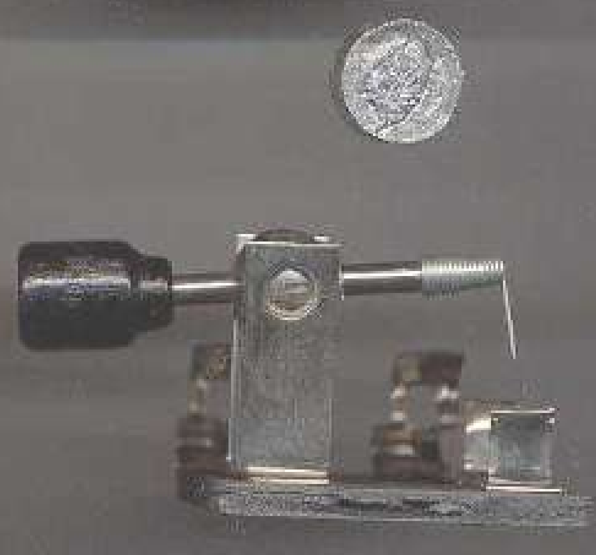
The LEAD-IN may consist of any desired length of covered wire which will reach from the aerial to the set. Scrape each end of the lead-in so that the wire is absolutely clean. Wind one end securely around the aerial wire. Place the other end in the clip marked "A".

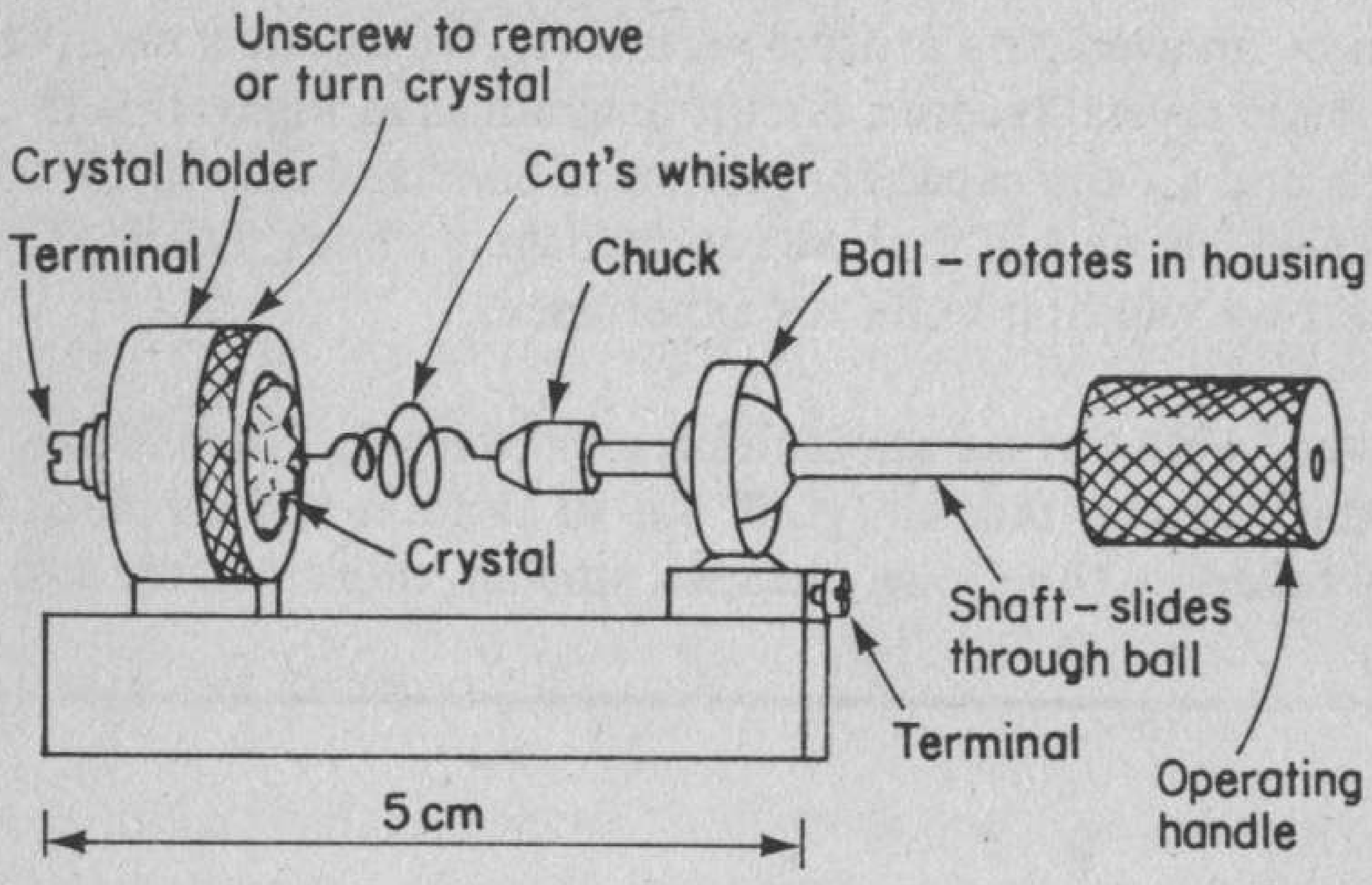
There are two cords leading from the headphones. Connect the cord "C" as illustrated, from the earphone to clip "B" or the clip under the detector arm. The other wire from the earphone marked "D" is to be connected to water pipe, radiator or any other suitable connection to be used for the ground.

You are now ready to receive broadcast. Find a sensitive spot on the crystal by means of the cats-whisker. You may find it necessary to "hunt" for live spots on the crystal as only some parts of a crystal are sensitive, and unless you find these sensitive spots you will not hear anything.

If you do not at first get results, do not blame the detector, as every set is tested before being shipped and will positively get results under the proper conditions. Do not write in and ask what the trouble is for a personal examination of your entire hook-up will be necessary. Go over your aerial, ground, various connections, etc., and if necessary get someone who thoroughly understands radios to help you.







Modern diode (7·5 X 2·5 mm)

Majoritatea componentelor active folosite în circuitele electronice moderne sînt dispozitivele bazate pe semiconductoare.

Cel mai simplu dispozitiv este *dioda* punctiformă cu germaniu. Ea are proprietatea de bază de a se comporta ca şi cum este conectată direct la o sursă electrică de curent continuu (plusul sursei la plusul diodei) şi ca un izolator, cînd este conectată invers la aceeaşi sursă (plusul sursei la minusul diodei), ca în figura 2.9.

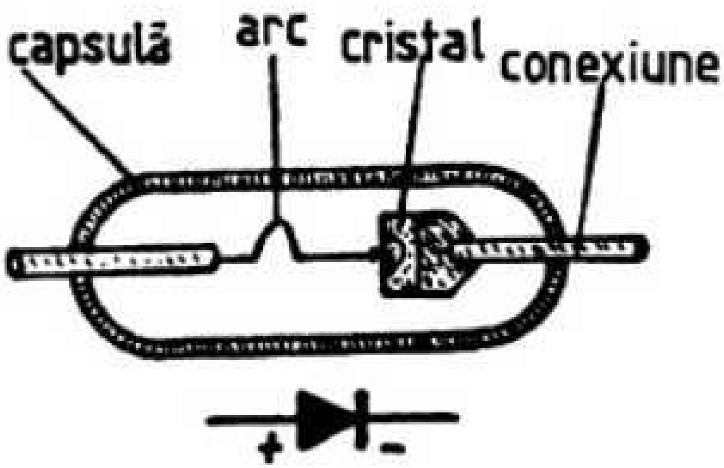


FIG. 2.9.

Dioda punctiformă cu germaniu

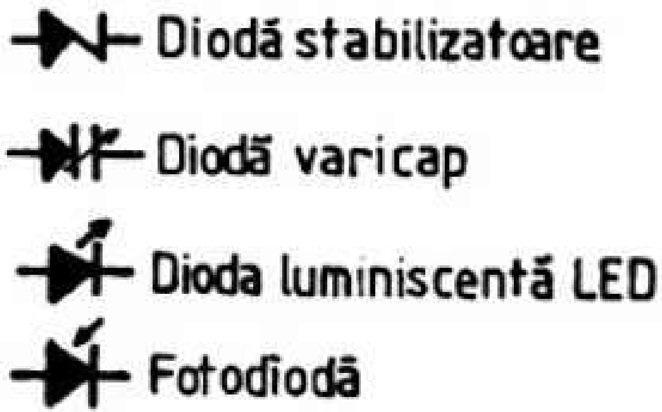


FIG. 2.10.

Tipuri de diode semiconductoare

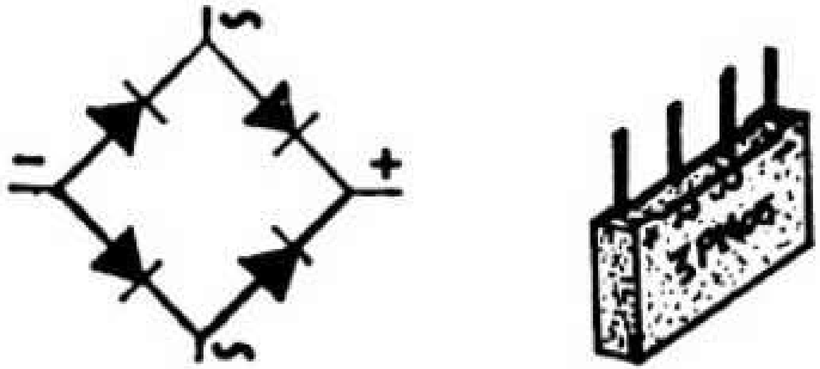
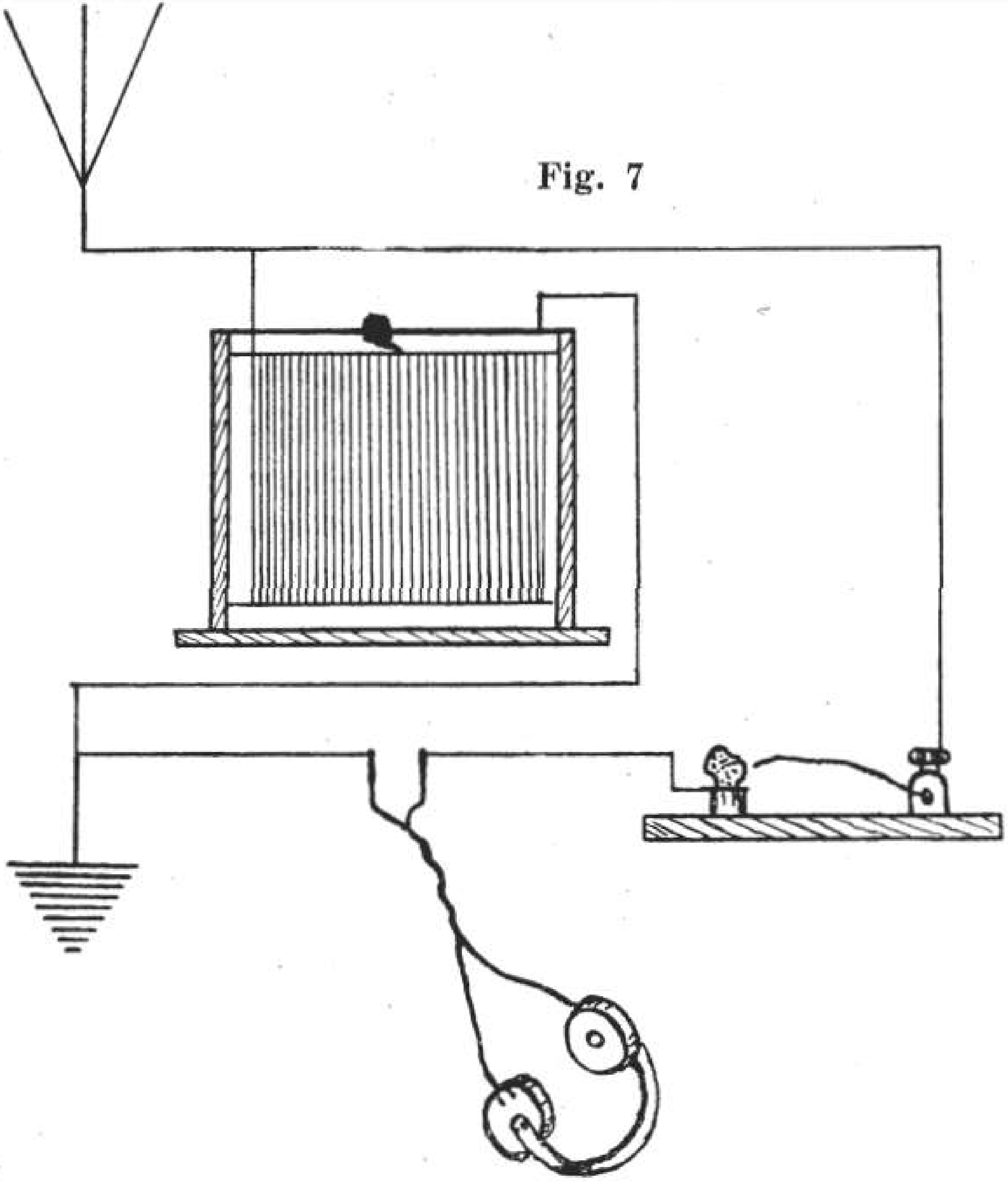
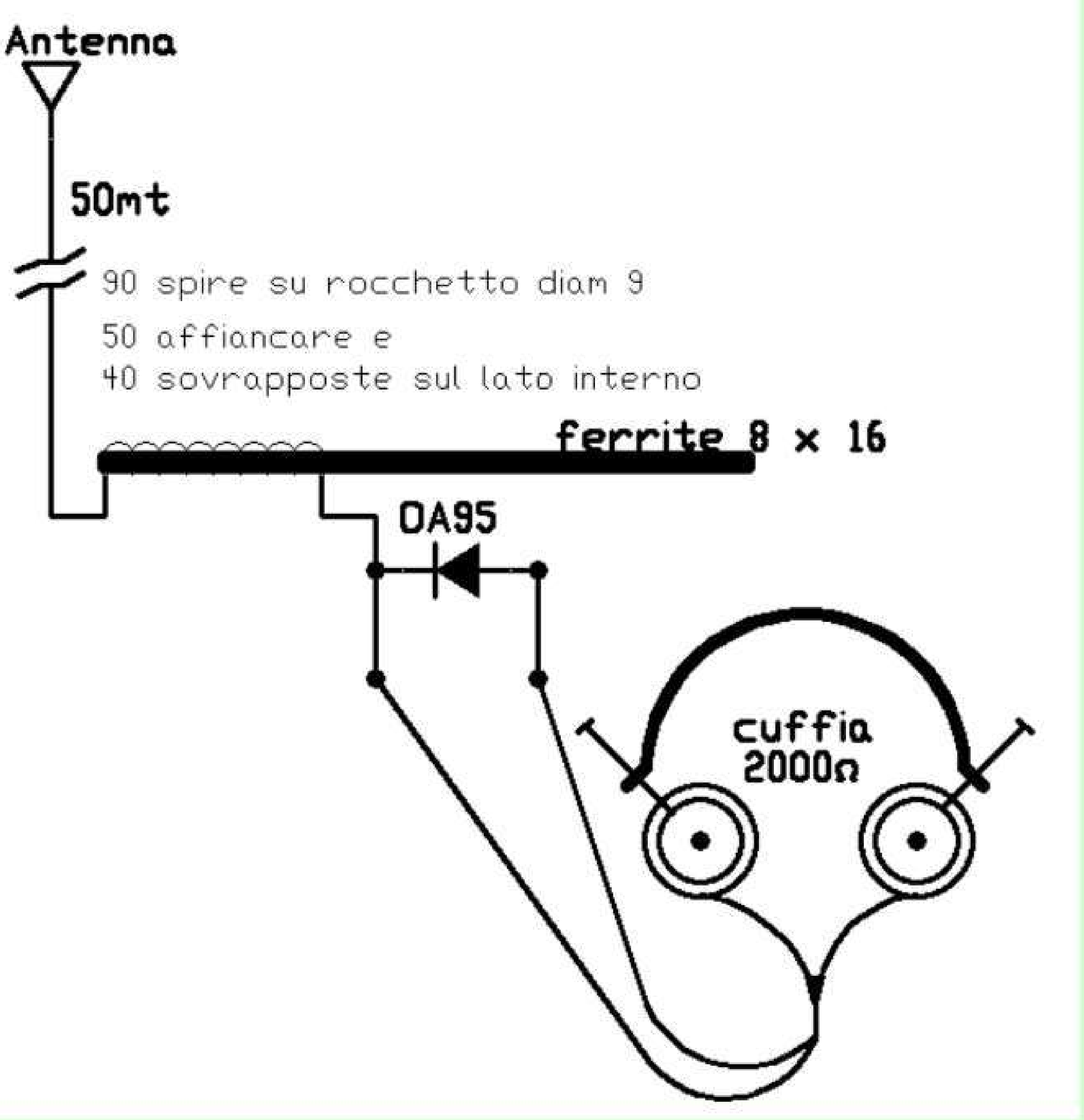


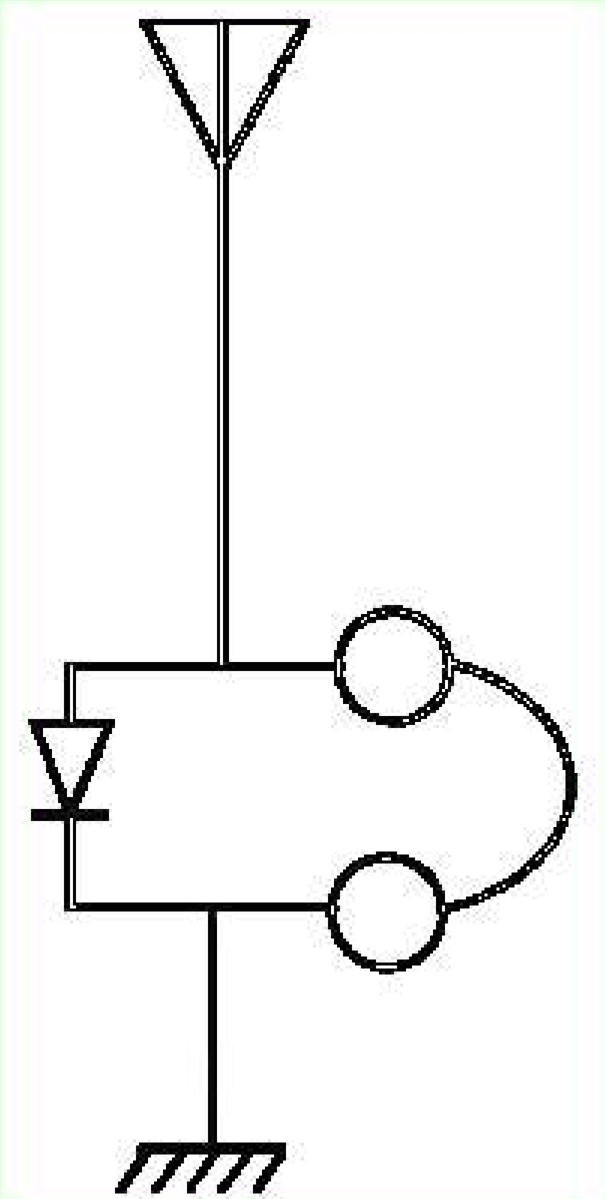
FIG. 2.11.

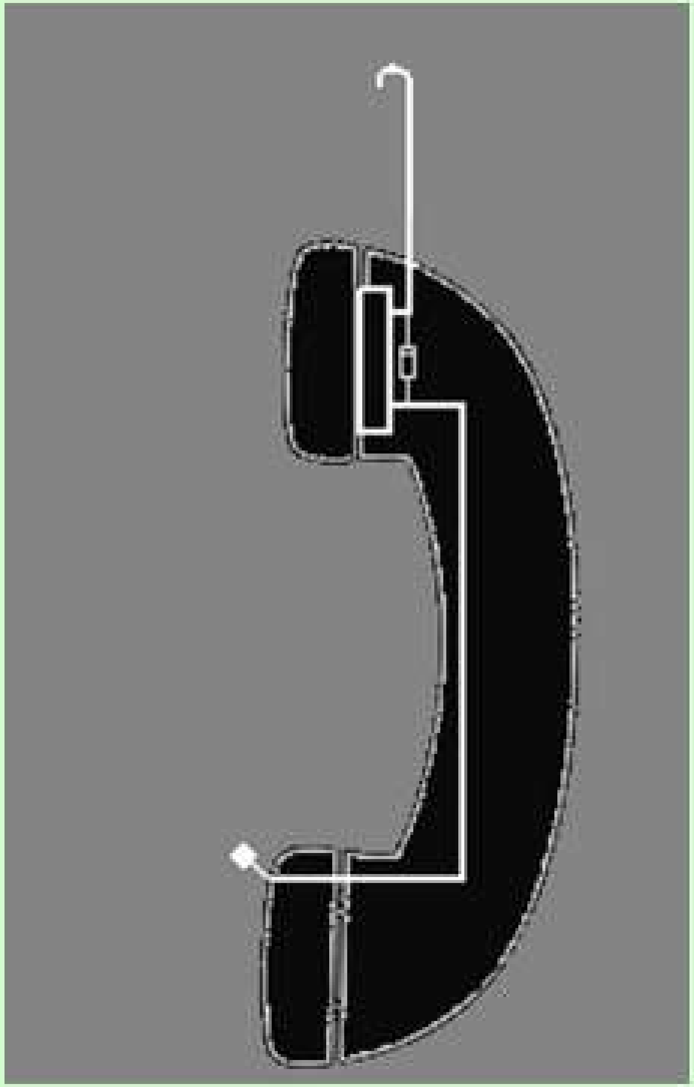
Puntea redresoare

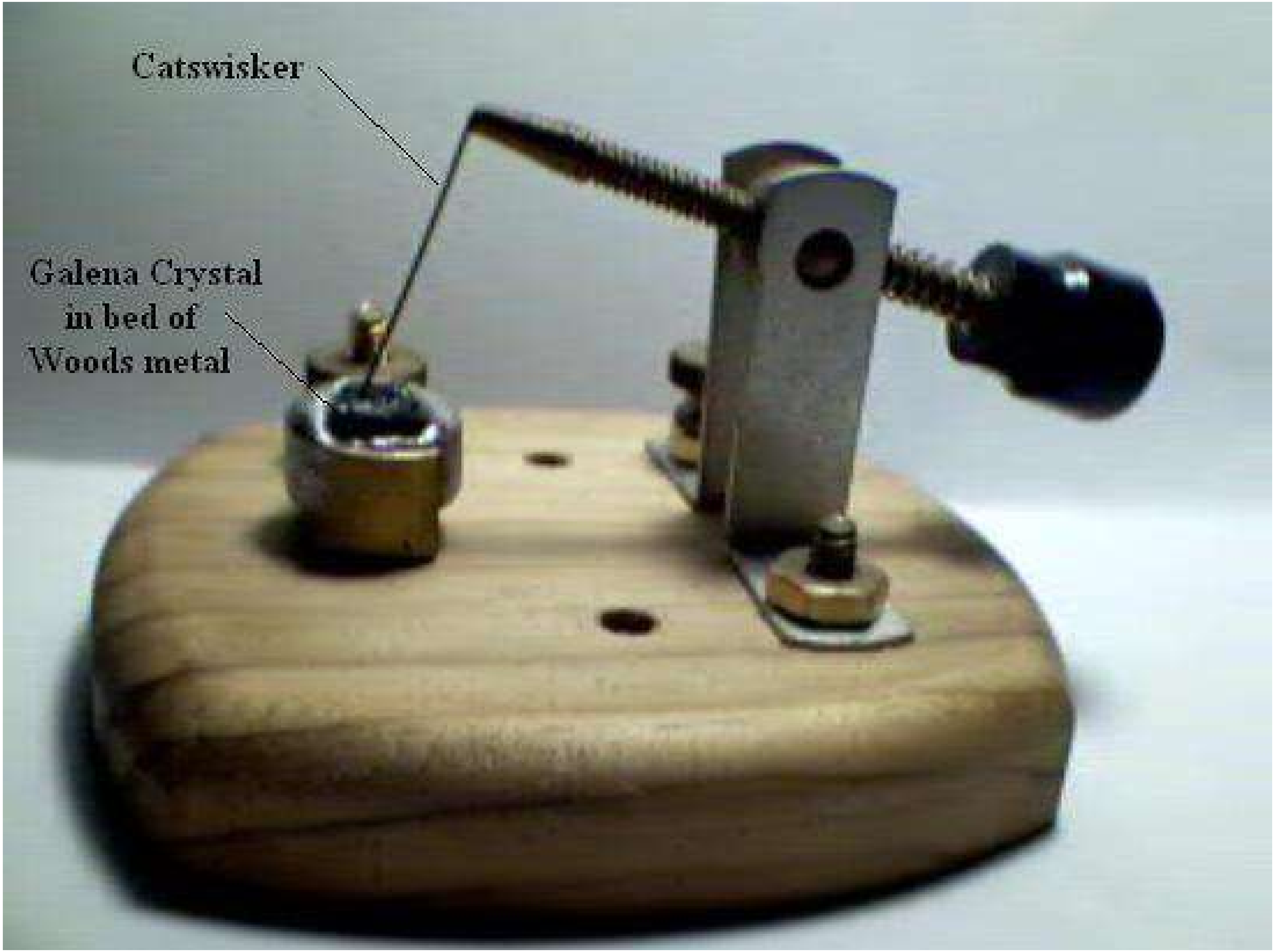
Fig. 7

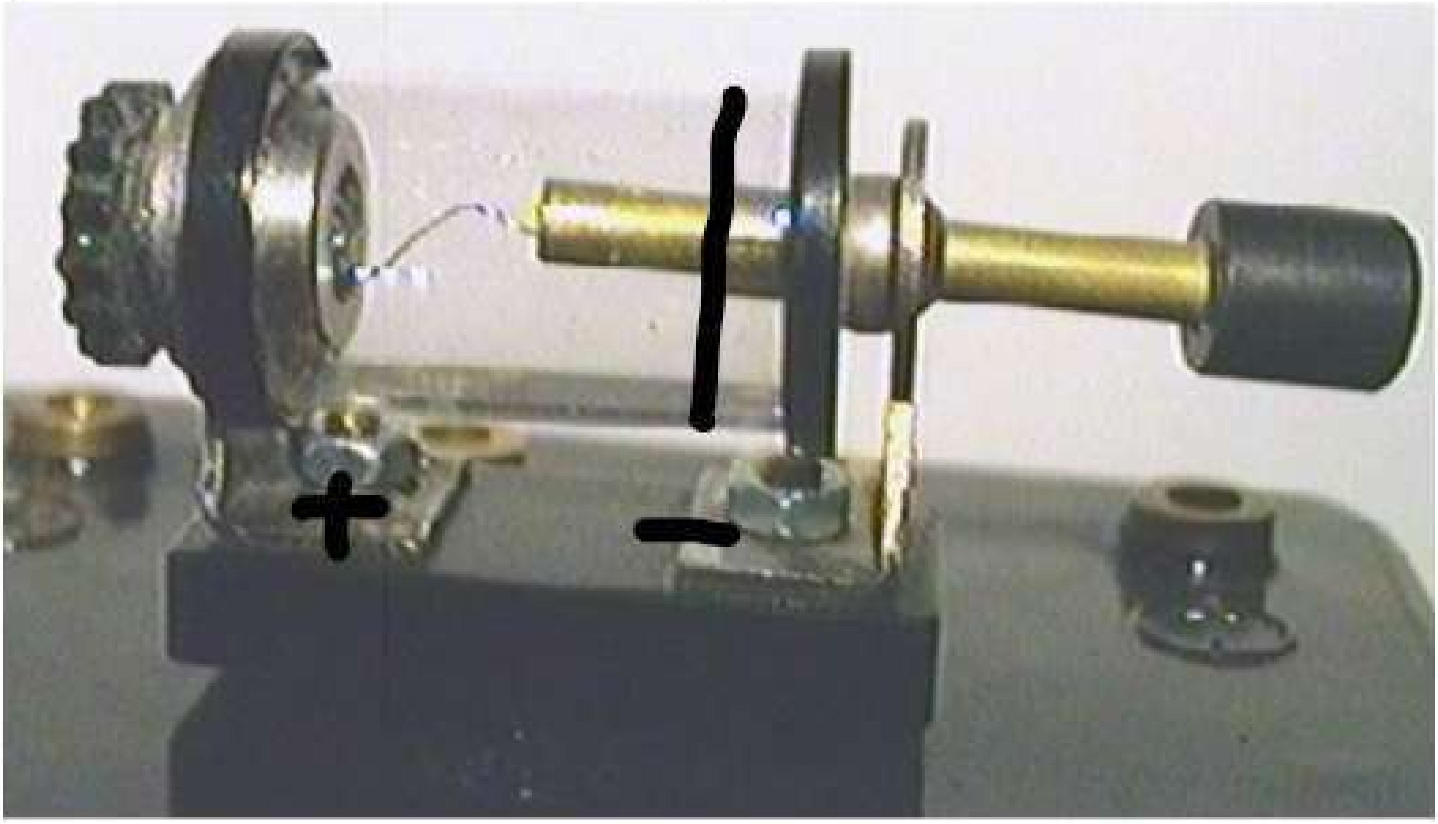


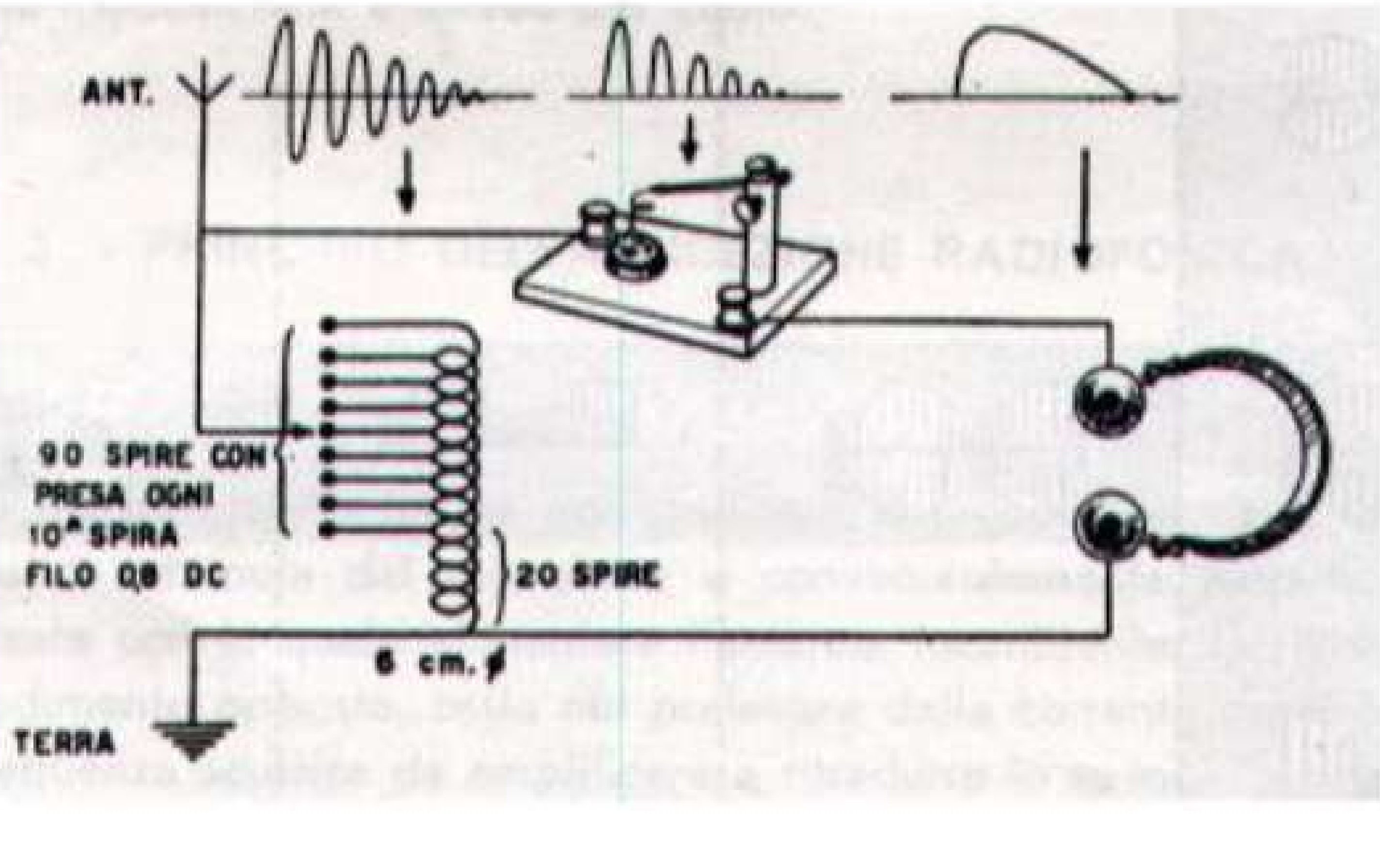

Antenna
50mt
90 spire su rocchetto diam 9
50 affiancare e
40 sovrapposte sul lato interno
ferrite 8 x 16
OA95
cuffia
2000Ω



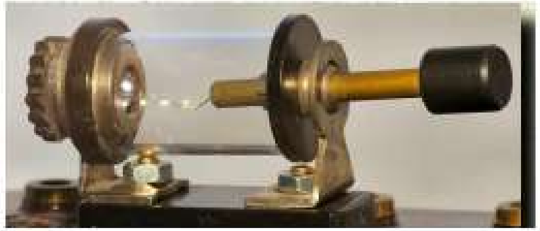



Catswisker
Galena Crystal
in bed of
Woods metal




ANT.
90 SPIRE CON
PRESA OGNI
10^ SPIRA
FILO 0,8 DC
20 SPIRE
6 cm. ø
TERRA

Lead sulfide crystals, also called "galena"



Crystal detector, the lever was used to position the spring contact on a crystal face capable of performing the radio signal detection.

Yeah , but how does a galena radio work? Here is the constructive scheme of a receiver of this kind, obtained from a book of popular radio commu
to the knowledge of the radio, ed.Hepep 1943):

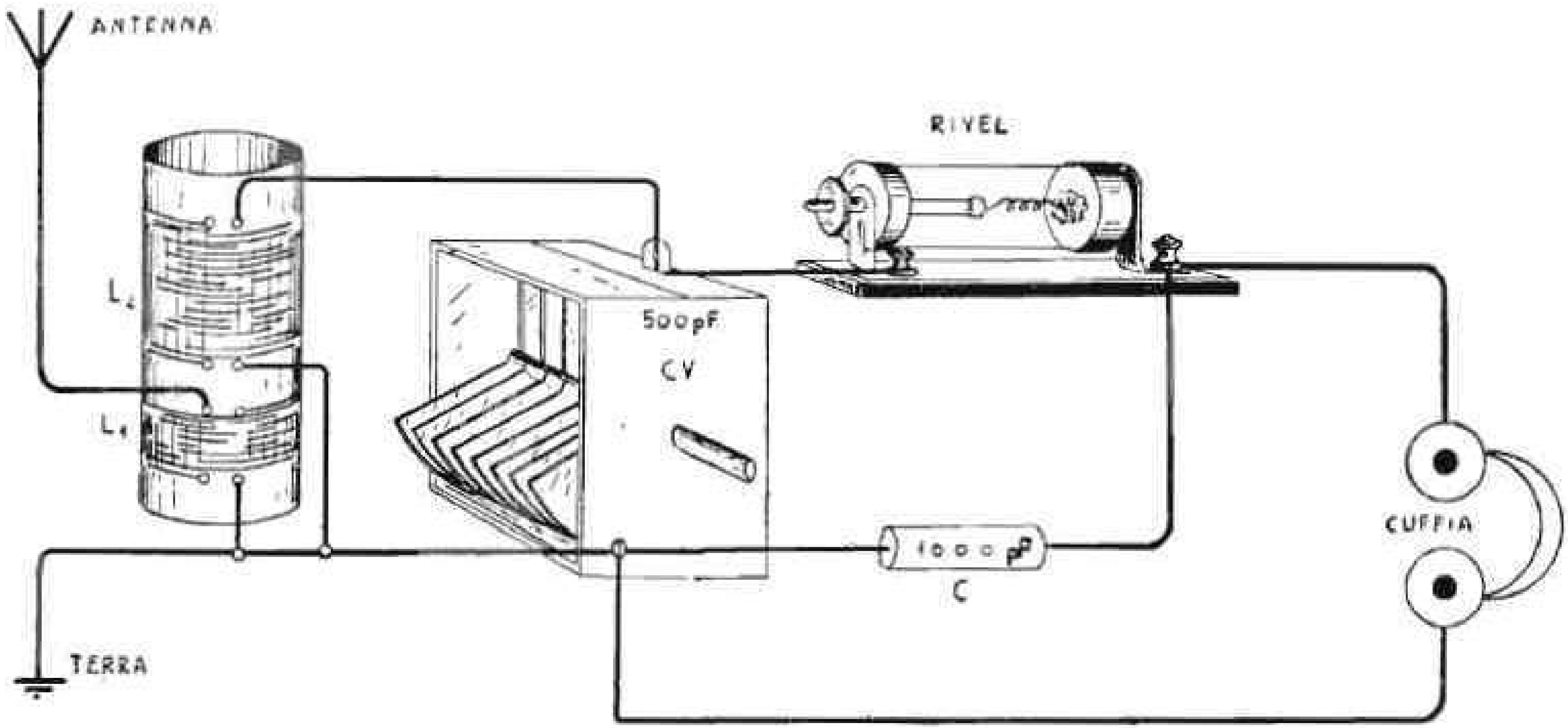
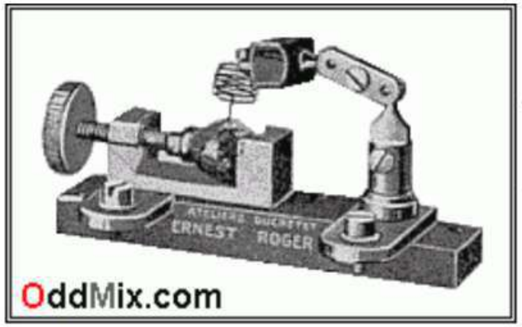


Fig. 13.5. – Realizzazione pratica dello schema di fig. 13.3 con aggiunta della bobina d'antenna.



Picture 1. "Ernest Roger" Crystal detector from 1920

Many of the **younger generation** never had the pleasure to have, or to even see a real beautiful crystal detector as shown on **Picture 1**. A detector like that was the product of the early 1920's, and it was an expensive, quality, well made product. They were usually hands assembled with machine made components.

This particular "**Ernest Roger**" detector device is built on an insulated base, either wood or most likely of Bakelite, the most widely used and only available plastic material at the times.

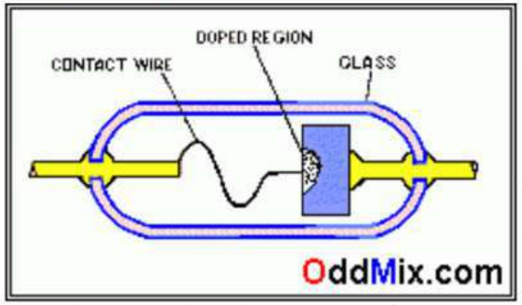
Many of the younger generation never had the pleasure to have, or to even see a real beautiful crystal detector as shown on **Picture 1**. The new generations are much too involved with technology and playing on their computers or going to an **online University**. This excellent detector holder used copper, brass and bronze generously for the crystal holder and for all of the **electrodes**.

The most often used crystal in this and similar detectors - then and now - was **pyrite** or galena as shown in the 1925 listing in a table in the **"American Mineralogist"** publication, that has a listing of thirty three minerals catalogued with rectifying detector properties.

Picture 2. Early point contact diode with adjustable srew

Among the very first commercially produced diodes is the 1N21B shown on **Picture 2**. It is more than curious, that this "diode" is enclosed in a case on which there is a slotted screw-head is just visible on the wide side (lower right). That screw is connected to a fine "cats whisker" steel wire, a few turns of a spring-like device, terminating in a point that is in touch of the germanium semiconductor material connected to the top left diode terminal.

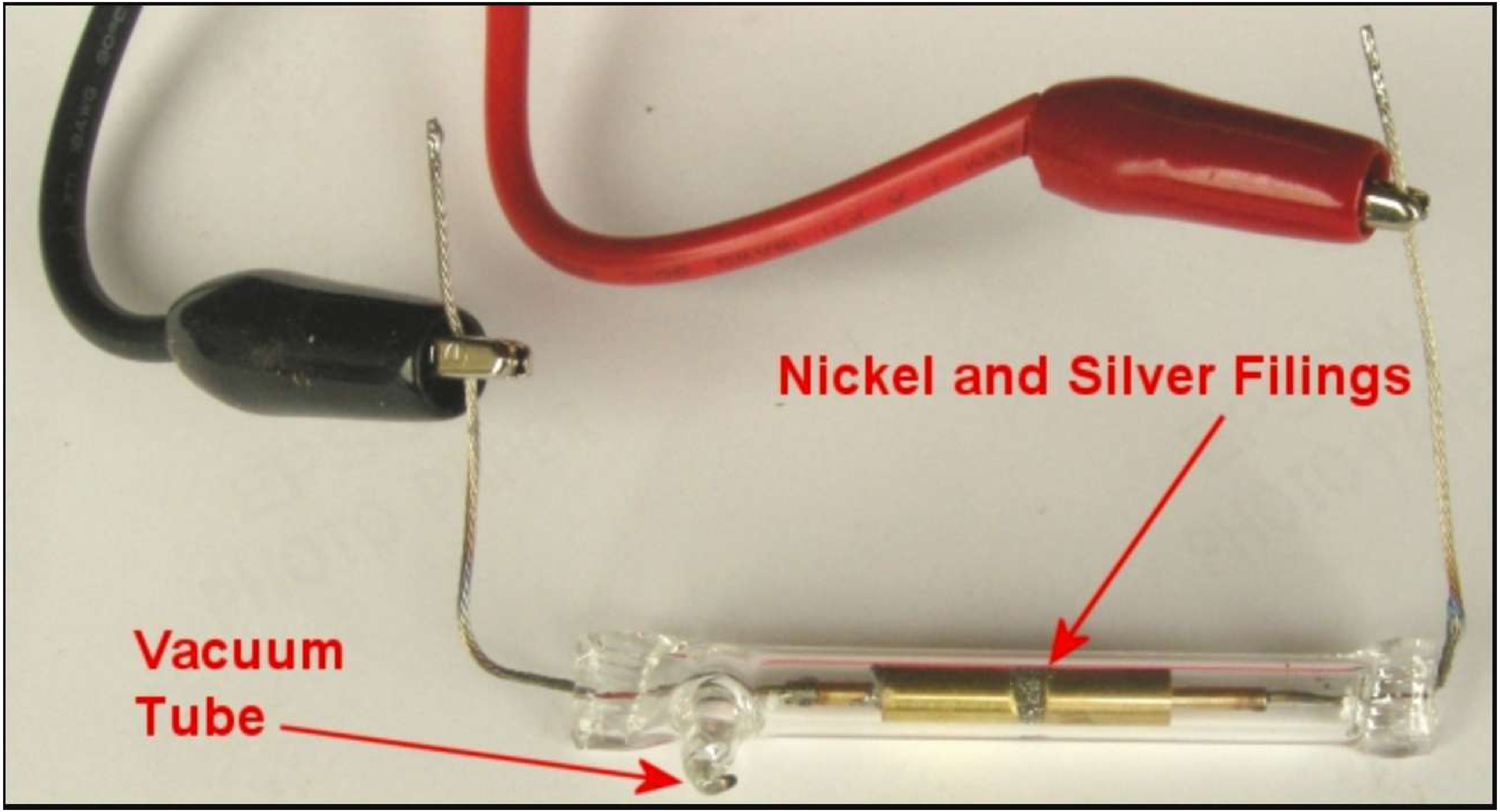
The arrangement is much smaller, and more diode like, then the detector on **Picture 1**., but it made in a very similar arrangement, which has became known as the point contact diode. From these and similar germanium diodes, evolutionary progress leads us to current PN junction Silicon, Gallium Arsenide or other more exotic semiconductor materials which are the achievement of the latest scientific age and many years of steady experimentation, research and development.



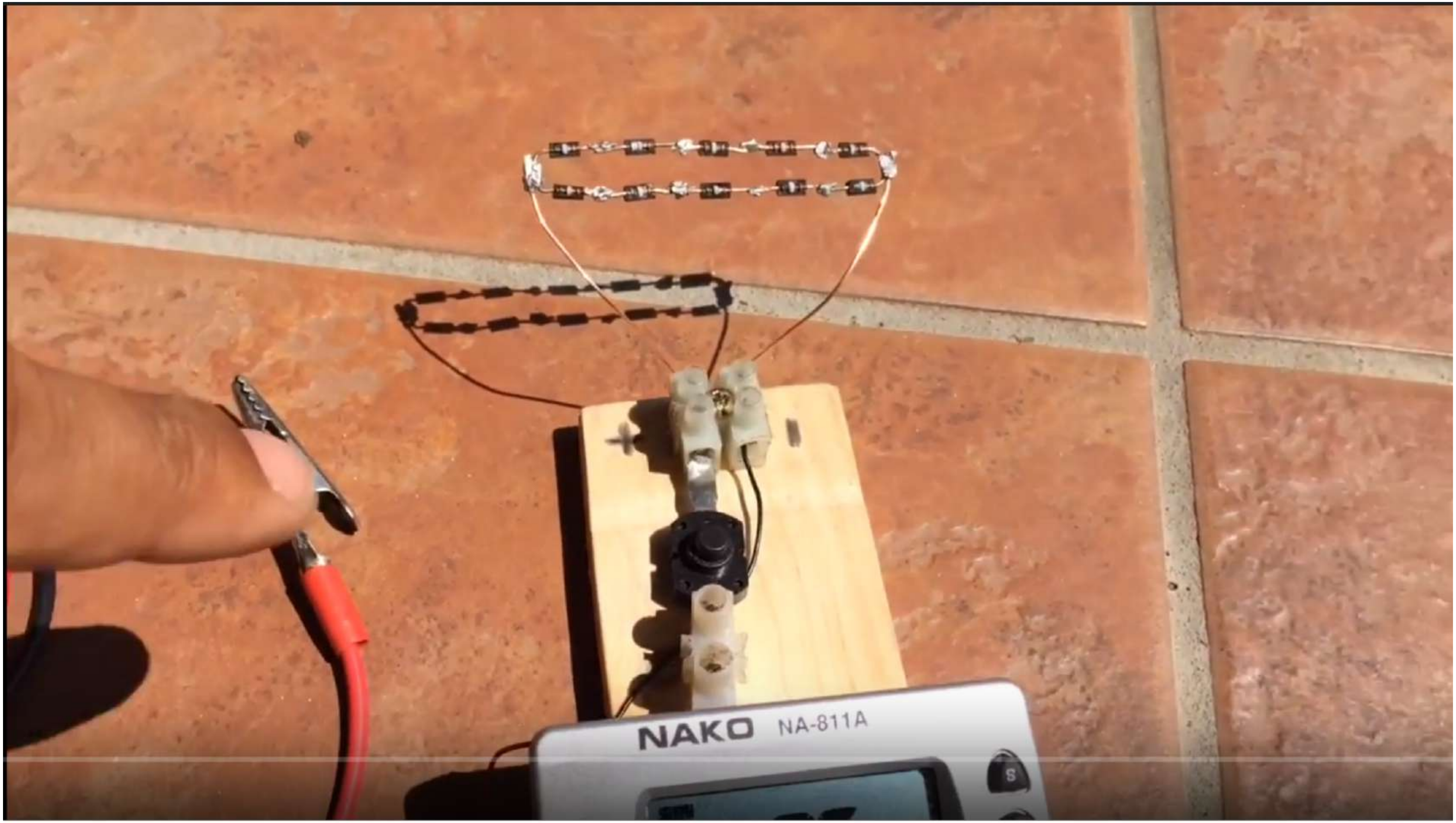
Picture 3. Point contact diode

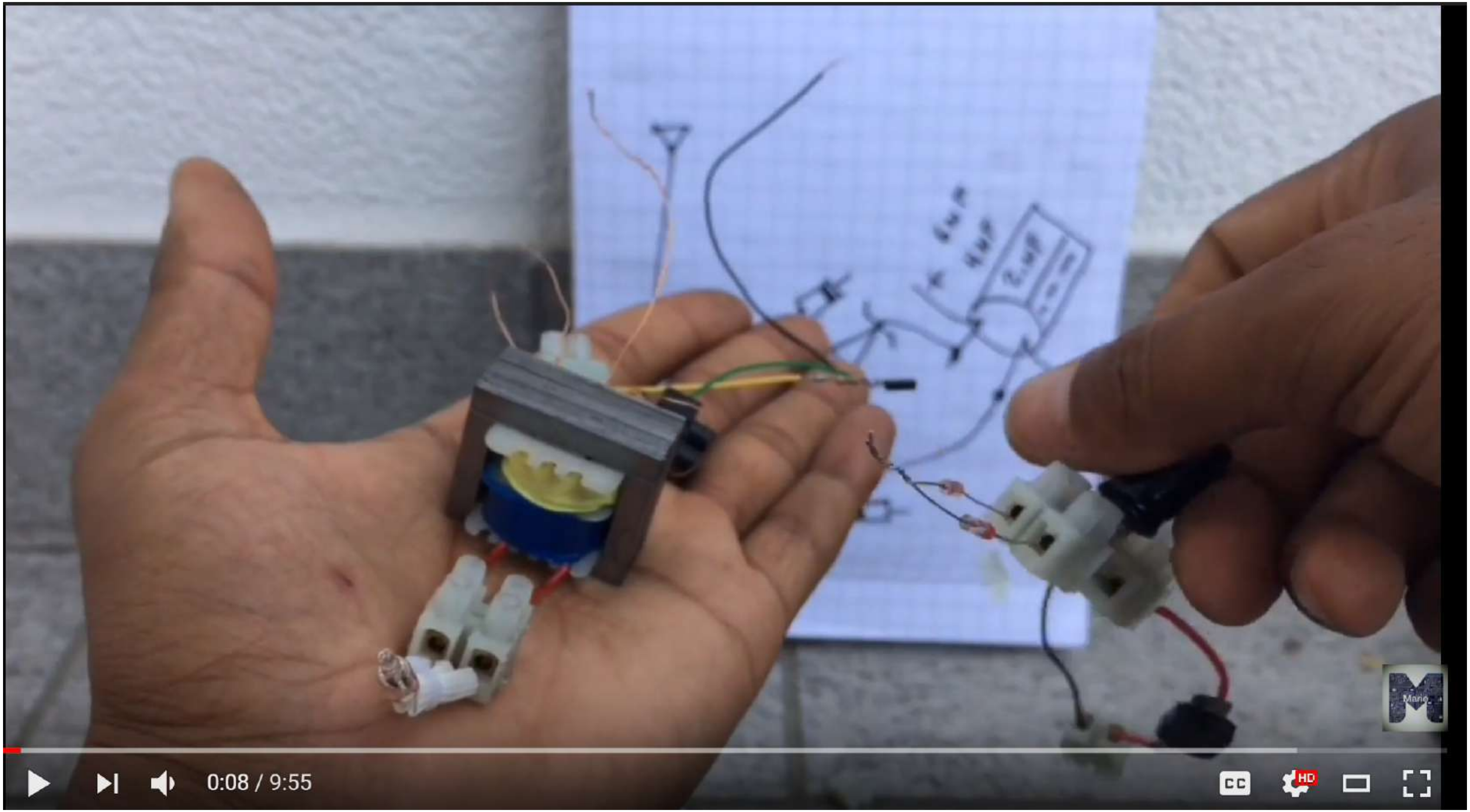
Picture 3 shows the cross section of a hermetically glass enclosed, point contact diode. If the left side, point contact terminal would be attached to a screw and a short spring, and the glass envelope would have a threaded metal part in it, the **Picture 2** and **Picture 3** devices would be nearly identical.

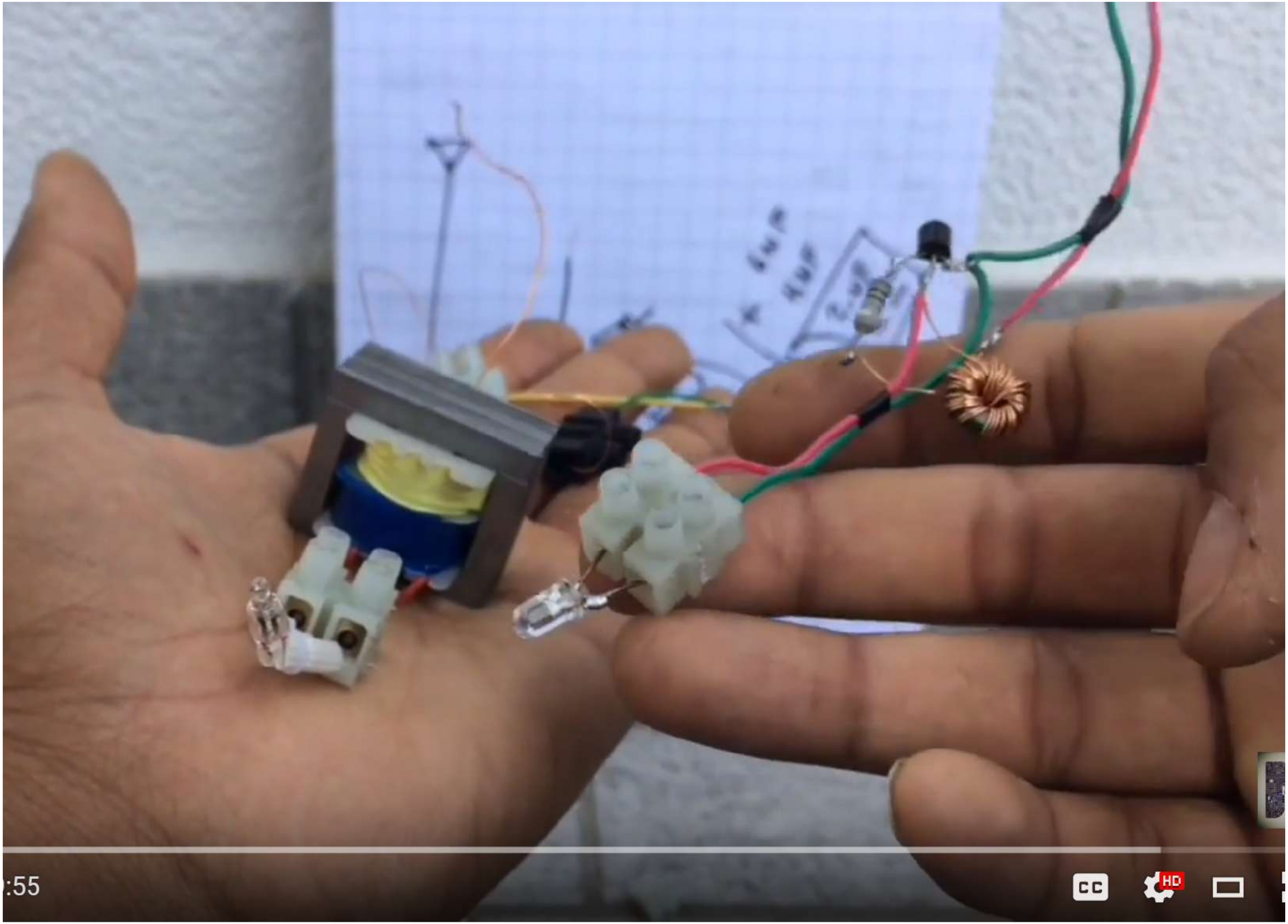
These point contact "cat's whisker" devices, are still made occasionally because of their very small capacitance. As it was discovered early on, they are highly useful in high frequency electronics. All the way up to microwave frequencies they useable. The simplest radar detectors usually made with a simple horn **antenna**, a diode similar to **Picture 2** and **Picture 3** and a transistor amplifier. If the designer keeps it simple, and don't use a local oscillator, such radar detectors

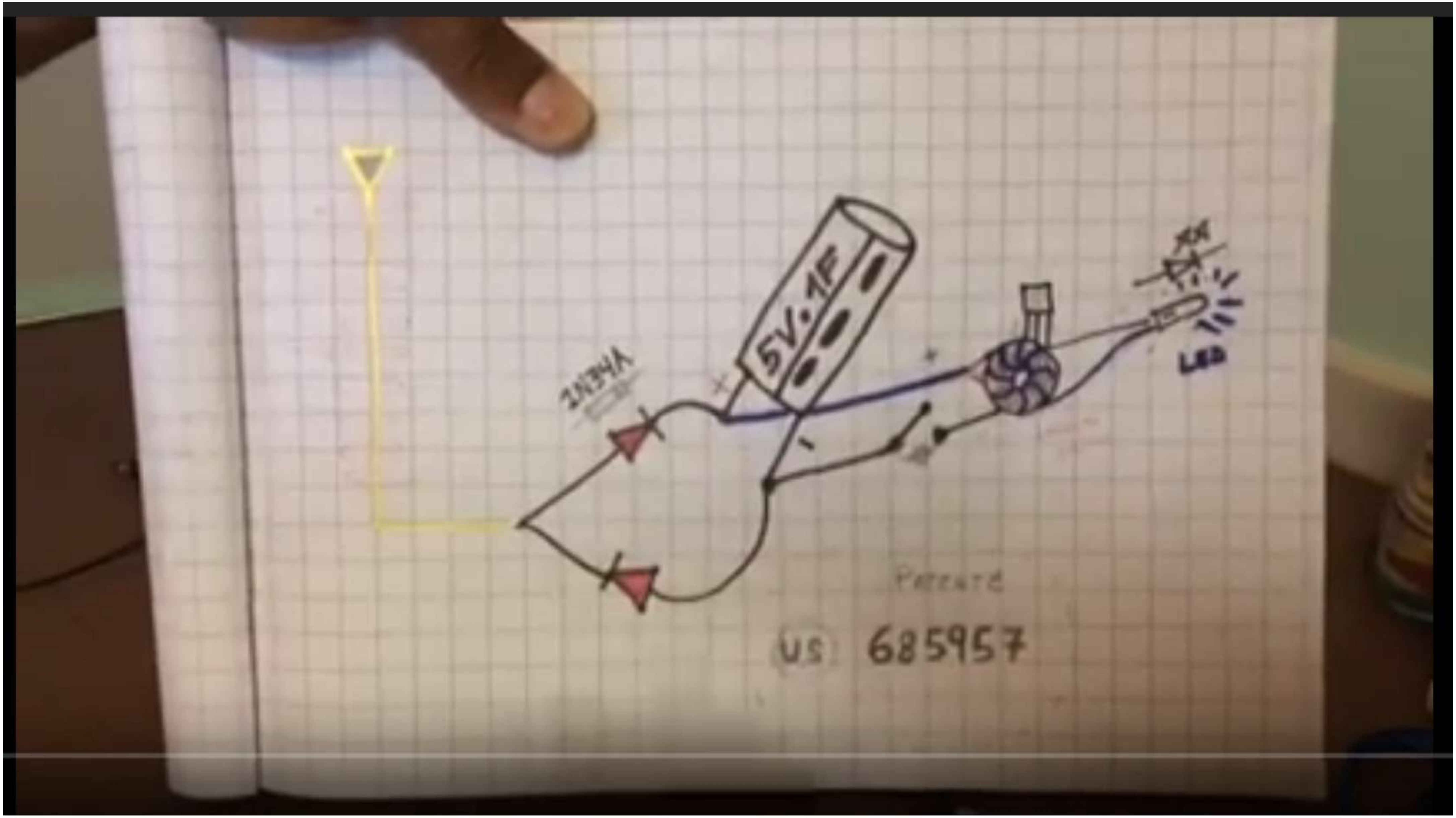

Nickel and Silver Filings
Vacuum
Tube

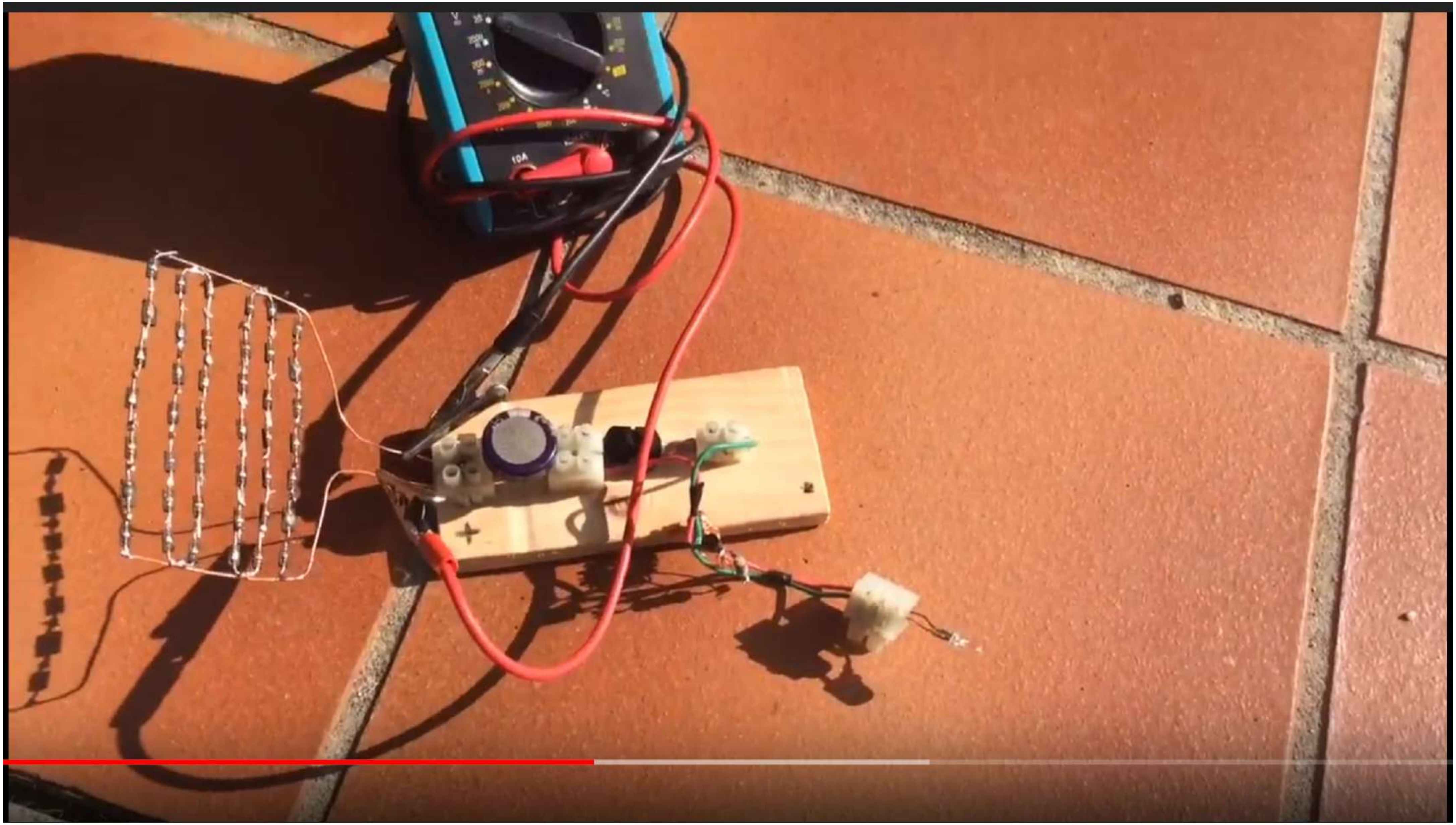

Meter on 200 Ohm Range
Display Indicates Activation = 11.2 Ohms
Coherer Detector
Press to Spark
Spark Gap
11.2
DCV
ACV
DCA
OFF
ON
CEN-TECH
DIGITAL
MULTIMETER

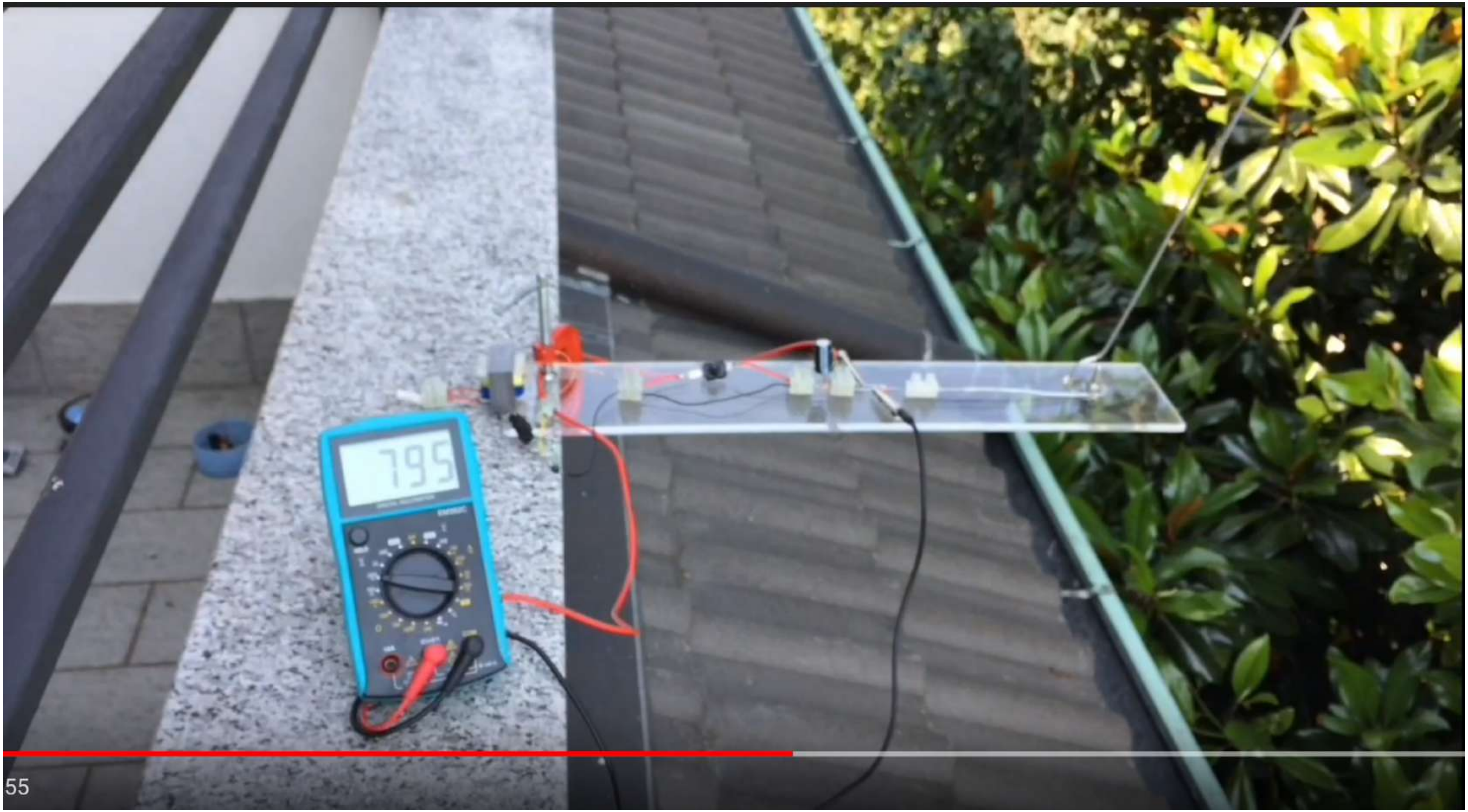

NAKO
NA-811A

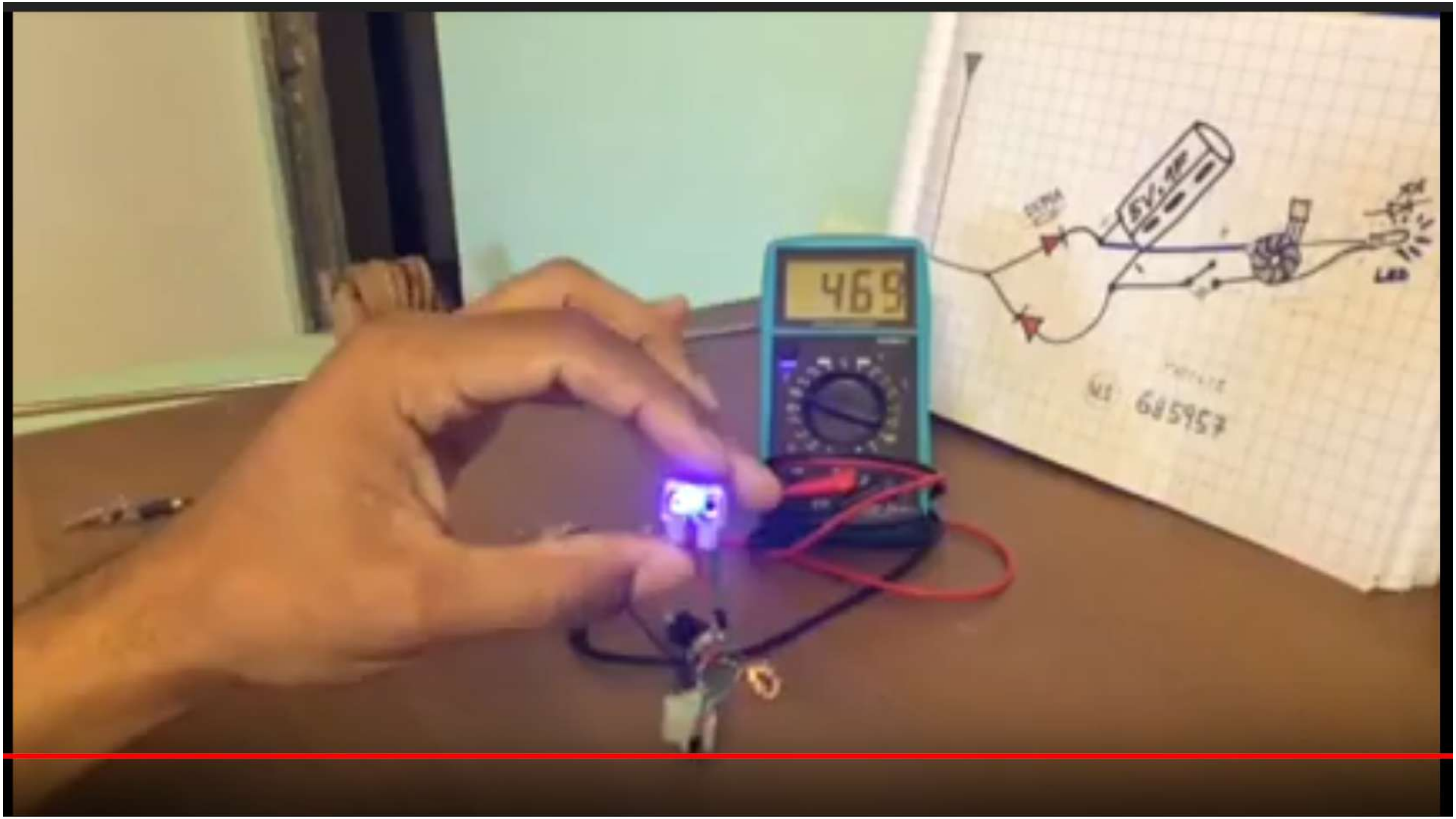

0:08 / 9:55
CC
HD


:55
CC
HD

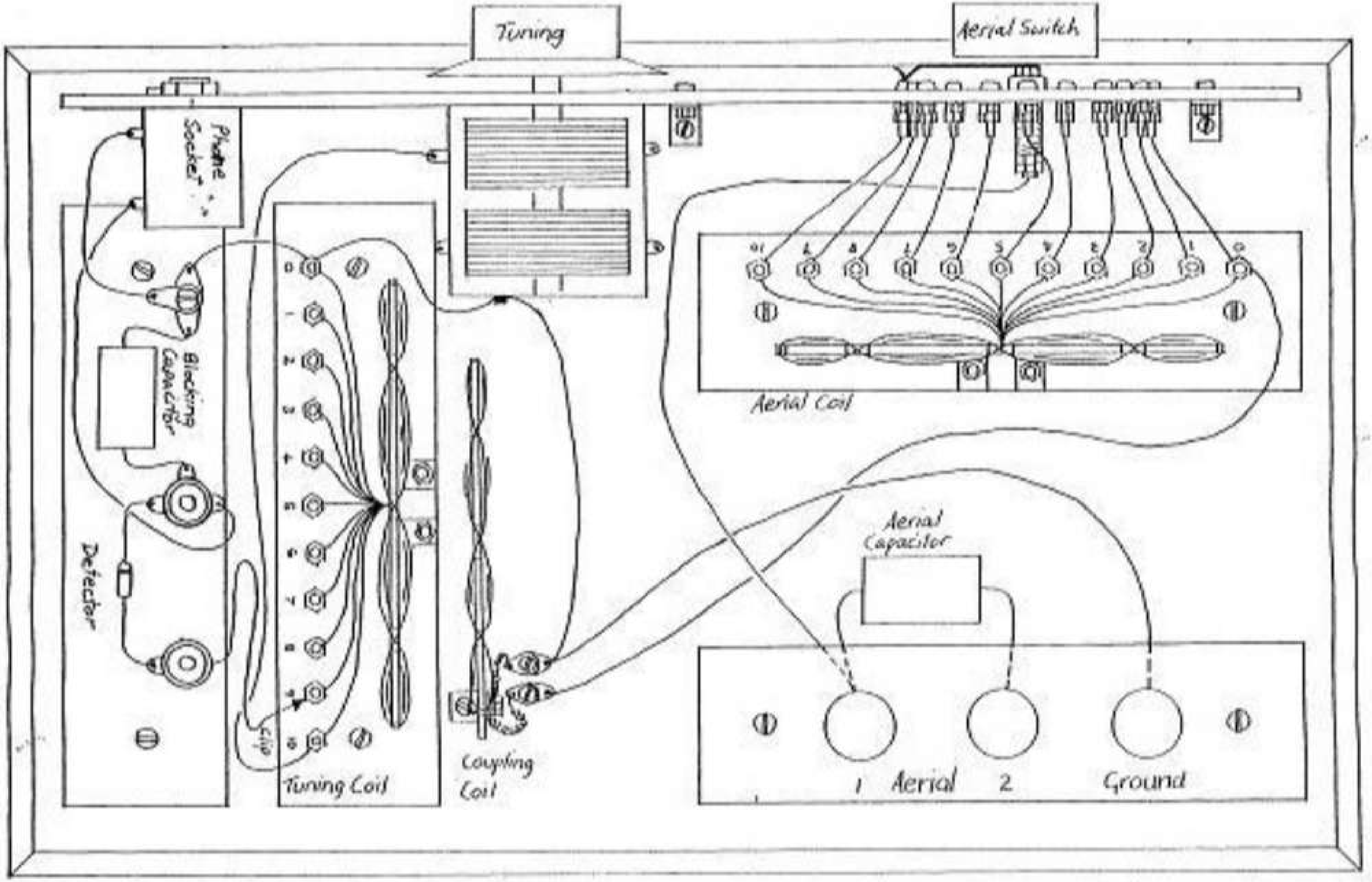

1N34A
5V:1F
LED
Patente
US 685957


10A


795
55

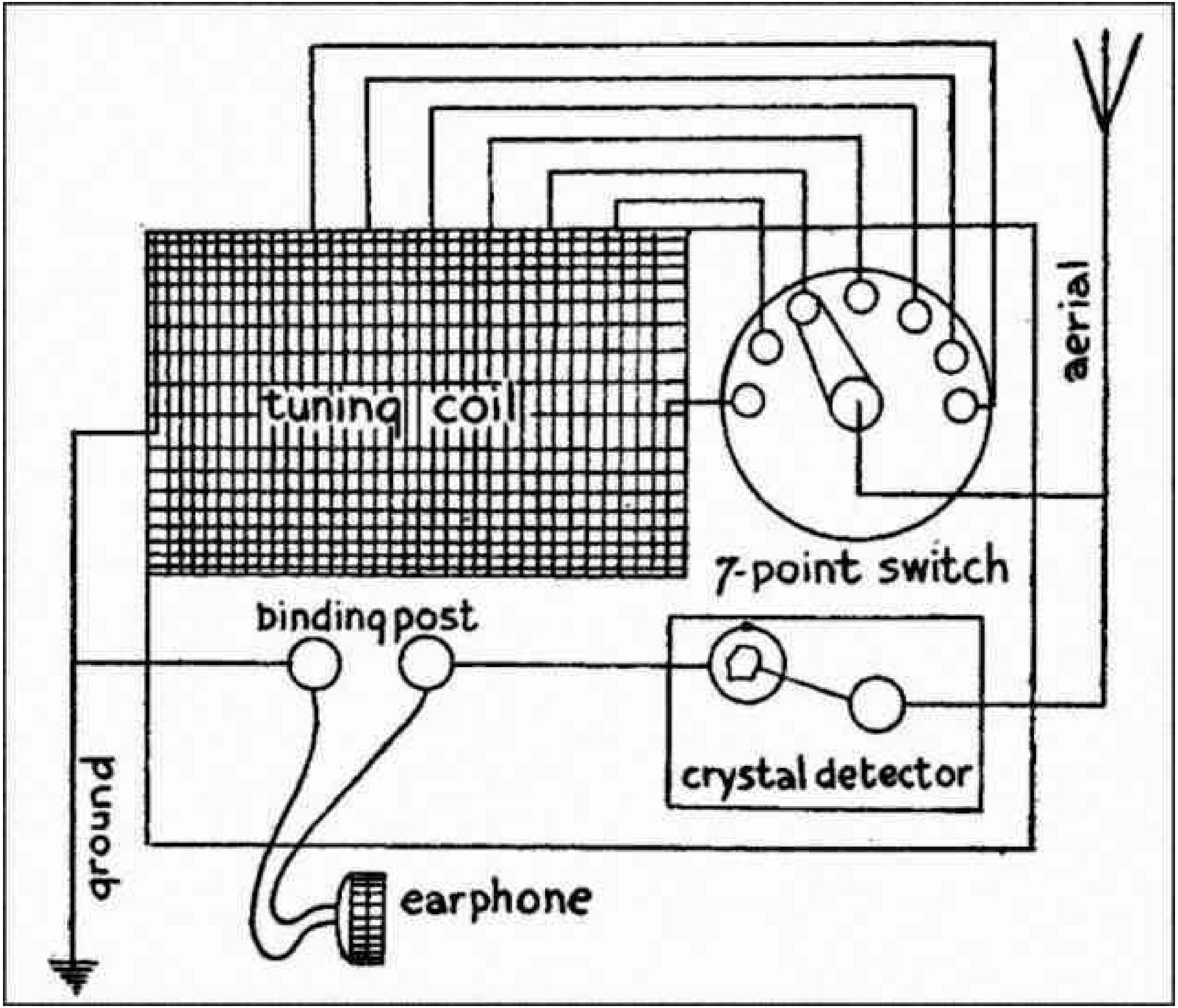

469


THE
SUPER
CRYSTAL
SET
AERIAL TAP
0 1 2 3 4 5 6 7 8 9 10
TUNING
0 10 20 30 40 50 60 70 80 90 100
PHONES



Tuning
Aerial Switch
Phone Socket
Blocking Capacitor
Detector
Clip
Tuning Coil
Coupling Coil
Aerial Coil
Aerial Capacitor
1 Aerial 2
Ground


KB8TAD


tuning coil
7-point switch
aerial
binding post
crystal detector
ground
earphone


KB8TAD

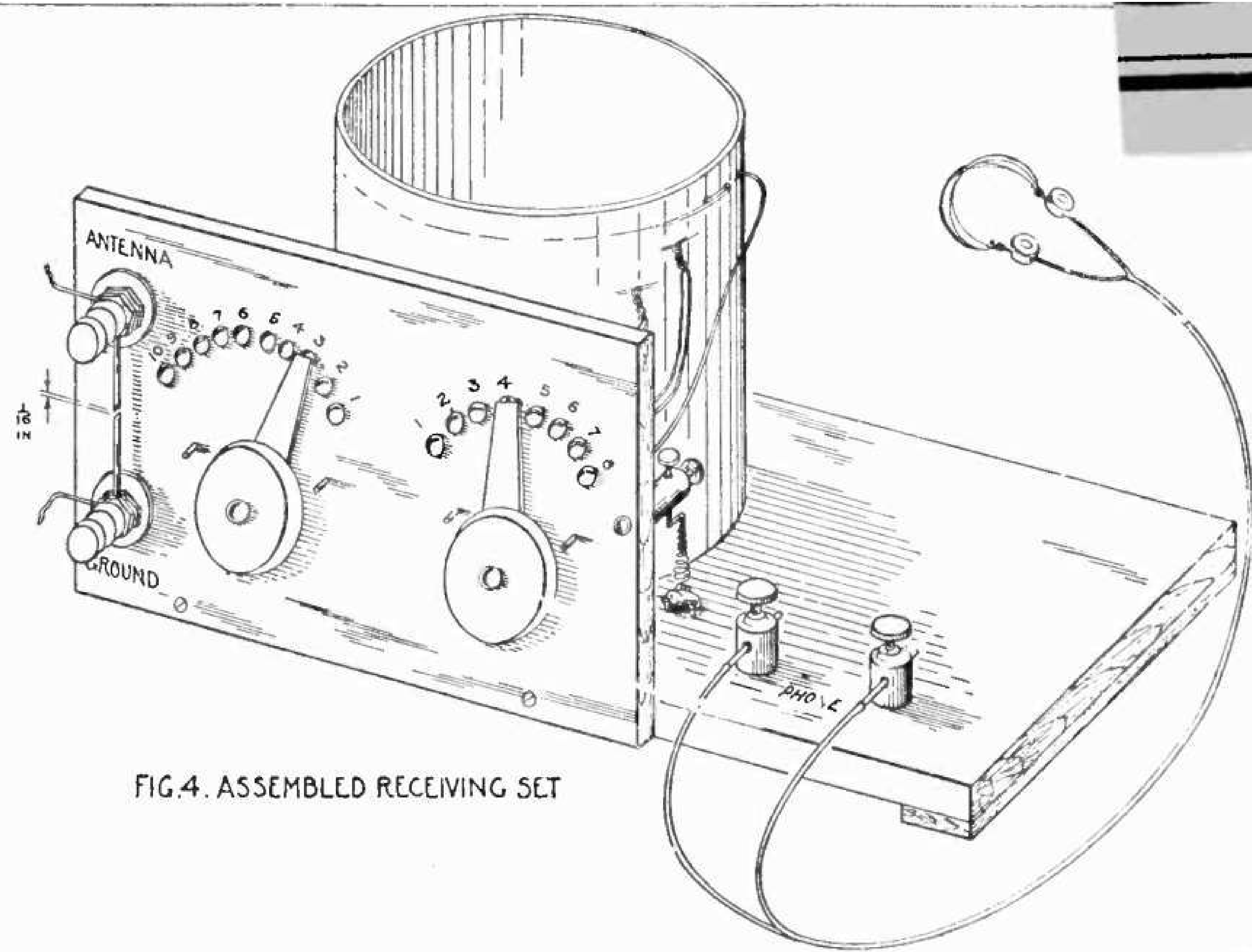


FIG.4. ASSEMBLED RECEIVING SET

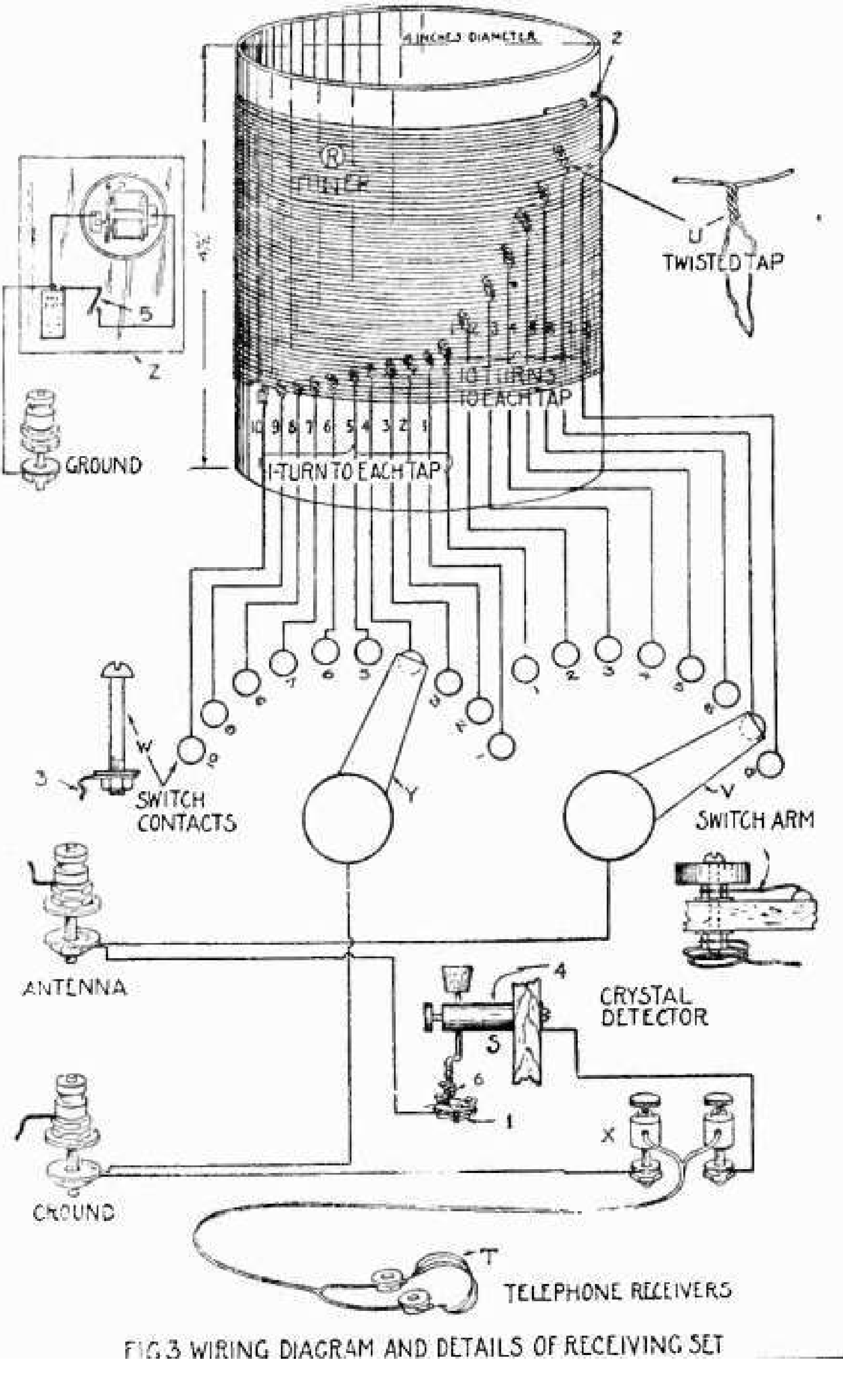
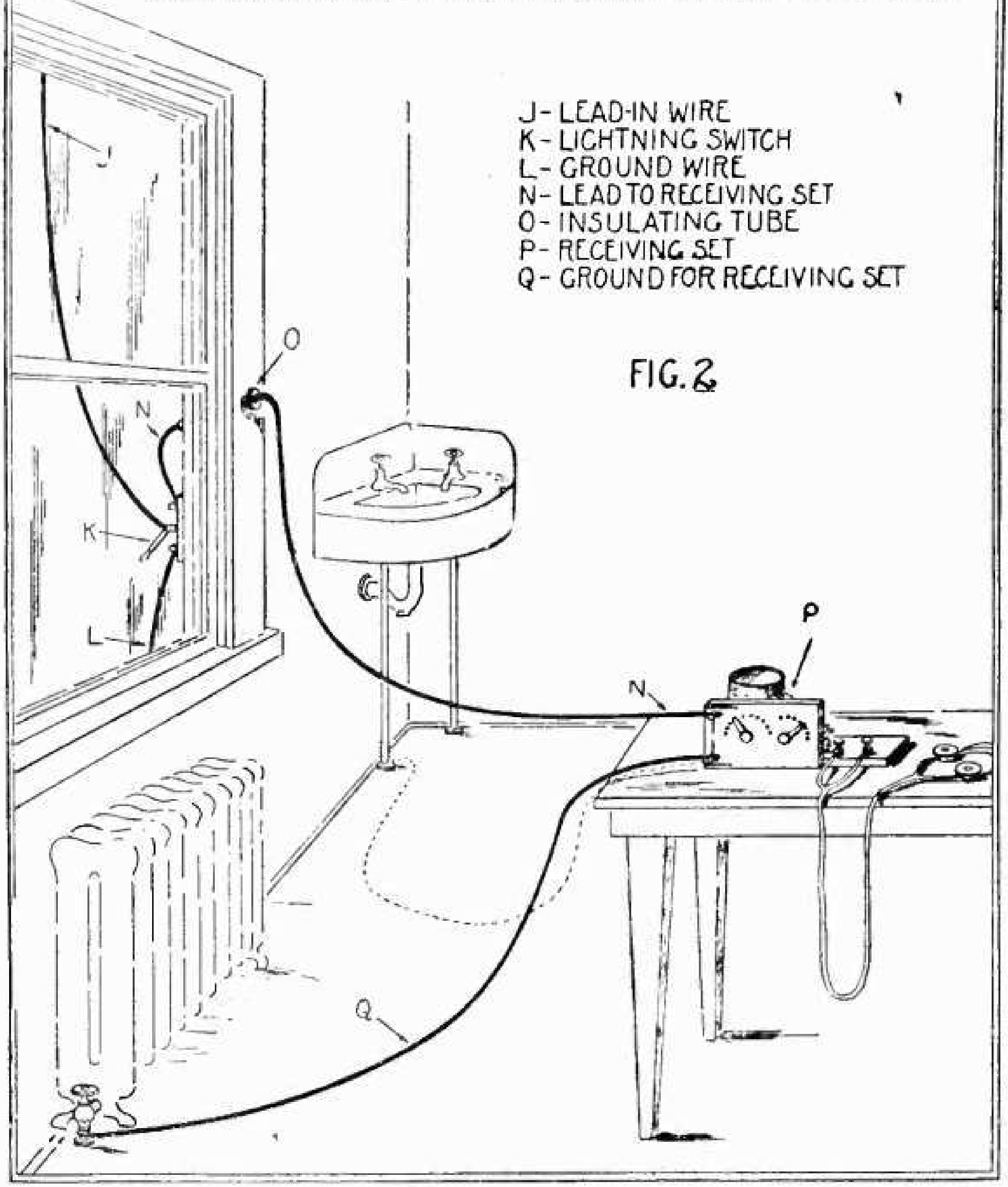


FIG.3 WIRING DIAGRAM AND DETAILS OF RECEIVING SET

FIG 2. RECEIVING SET, WITH ANTENNA AND GROUND CONNECTIONS



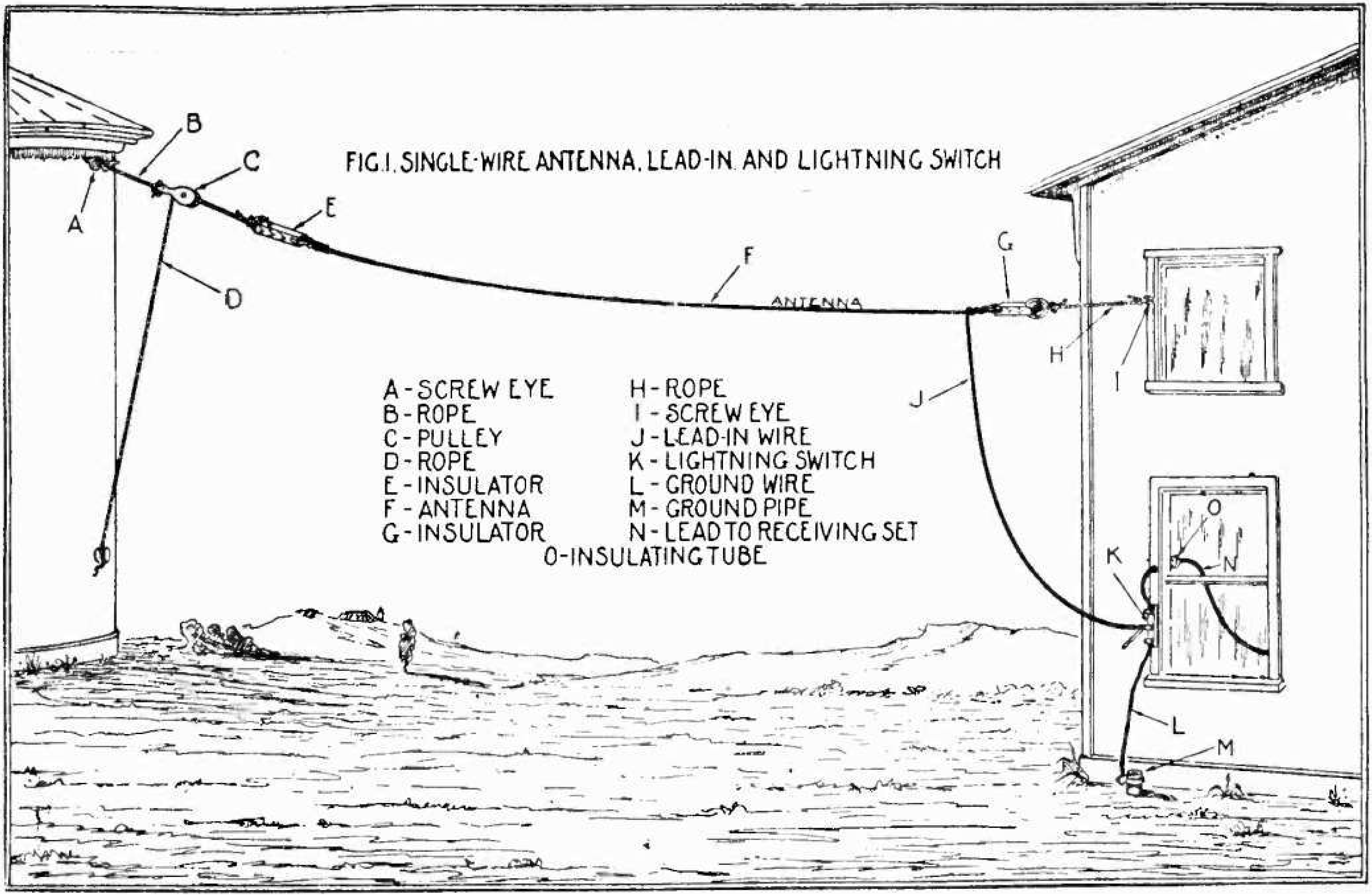


FIG.1. SINGLE-WIRE ANTENNA, LEAD-IN AND LIGHTNING SWITCH

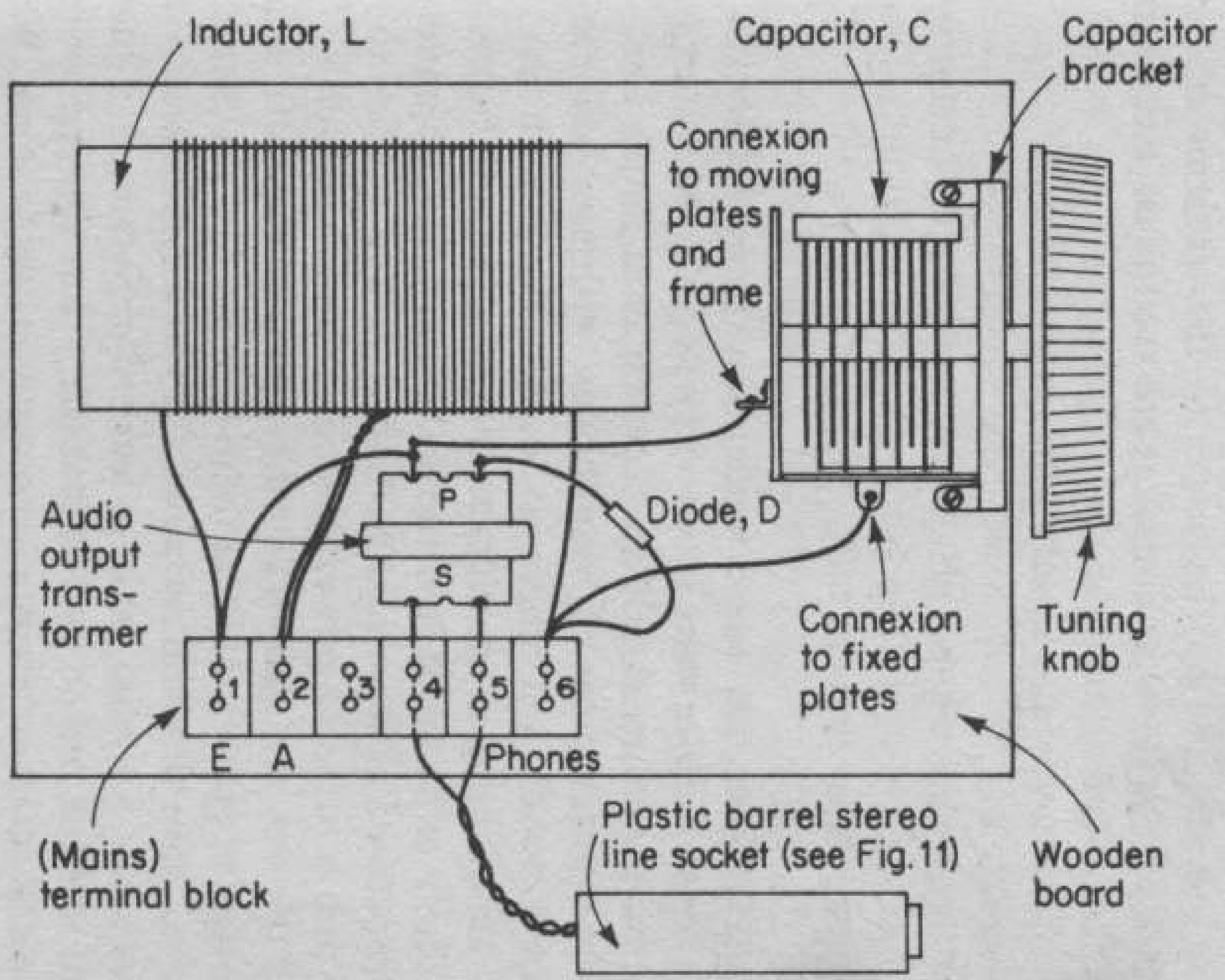
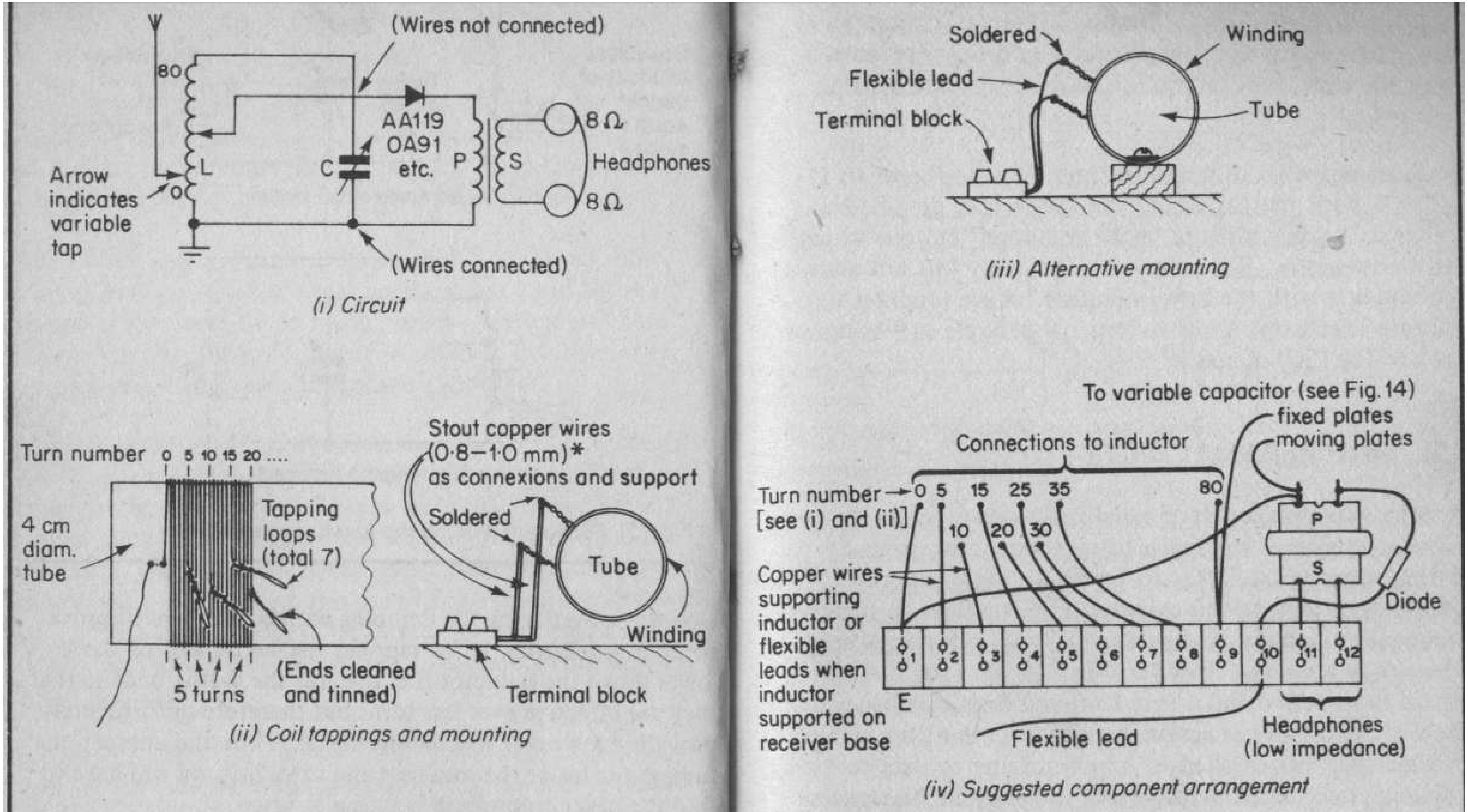


Fig. 14 Suggested component arrangement for elementary crystal set



(i) Circuit

(ii) Coil tappings and mounting

(iii) Alternative mounting

(iv) Suggested component arrangement

Fig. 16 Circuit with tapped inductor

* 21–19 SWG, 20–18 AWG

required) and a *flying lead* for the diode, these components are shown in Fig.16(iv). This is doing the job properly, there is no reason however (except for unreliability of contact) why both aerial and diode flying leads should not terminate on *crocodile clips* and be clipped onto the chosen taps as required.

Earth is connected to terminal 1 and the headphones to 11 and 12. Both the aerial and the diode lead are tried at terminals 2 – 9, a game of "poke and hope" but one which can be rewarding. Remember that generally but not always, the tappings with the lower numbers reduce loudness but increase selectivity. Aerial to terminal 8, diode to 9 brings us back to Fig.13(i) of course.

5.2 SWITCHED SELECTIVITY

A technique of selection of aerial and diode tappings by means of rotary switches has much to recommend it especially if setting changes are likely to be needed for reception of different stations. In this case two single-pole 8-way switches are required, usually obtainable as 12-way so leaving 4 spare. The drawing symbol shown in Fig.17 speaks for itself with regard to its action and it may be found from catalogues that there are two types of *action*, by which is meant the manner in which the switch changes over from one contact to the adjoining one. *Break before make* switches disconnect one circuit before the next is connected and *make before break* have a change-over period during which both circuits are connected at once for a short time. Either type is suitable for us. A knob to rotate each switch is also required, a small one, say 2 cm diameter or less is ample, if with an indicator line or pointer, so much the better. The modifications to Fig.16 for switching are given in Fig.17.

With such rotary switches a search for the optimum arrange-

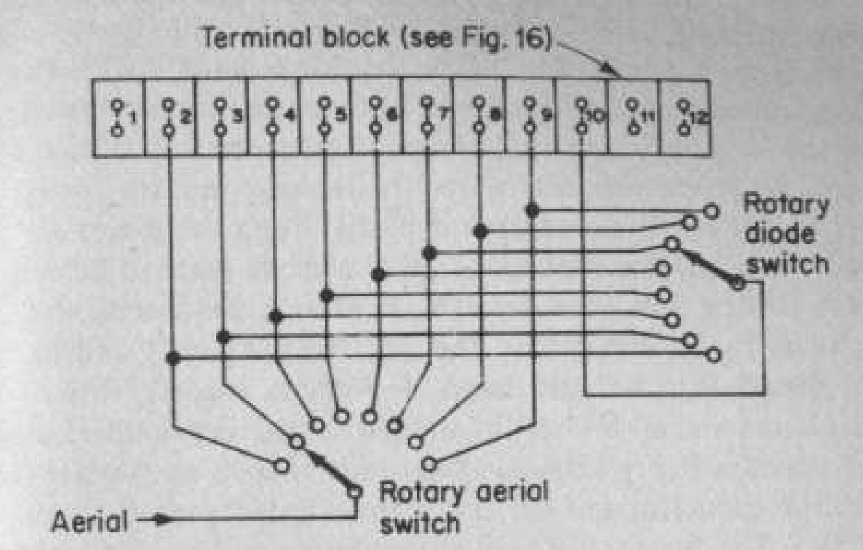


Fig. 17 · Switching aerial and diode leads

variable capacitor, the two switches and the headphone socket, the latter must then be of the chassis type. A pair of terminals for aerial and earth completes the receiver. On the panel the two rotary switches are easily labelled 1 – 8 but we are still uncertain about a tuning dial because we may not have the right variable capacitor for the inductor, this is the subject of the next section.

5.3 GETTING THE RANGE RIGHT

This is where we pause in receiver construction to remove some of the confusion which may still exist with regard to the tuning ingredients, wavelength, frequency, inductance and capacity, each of which has some bearing on the others, to fit together these four pieces of the puzzle, so to speak. For most crystal sets the inductance is fixed according to the variable capacitor available and we tune the receiver over the range by rotating the variable capacitor knob over half a

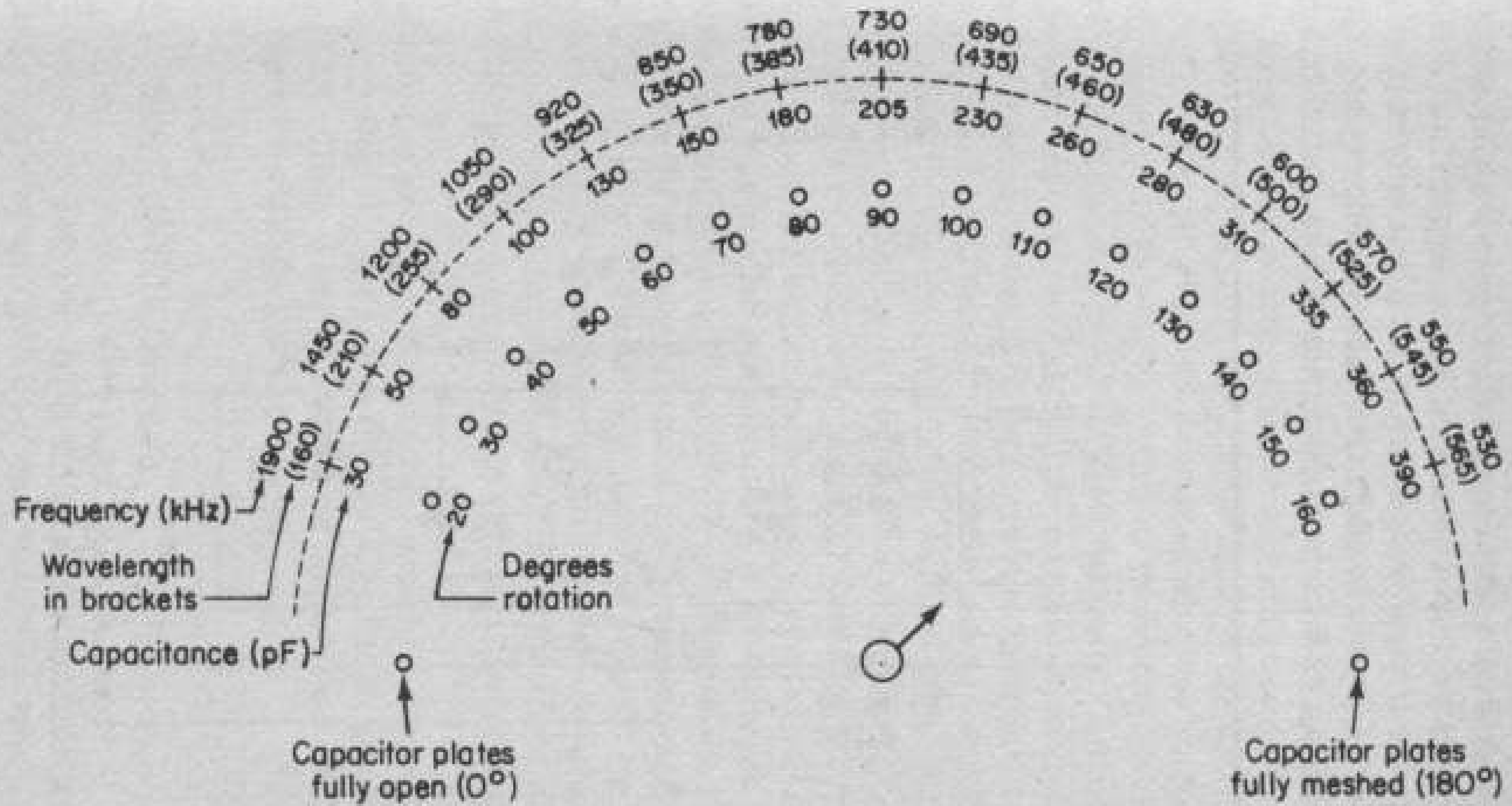
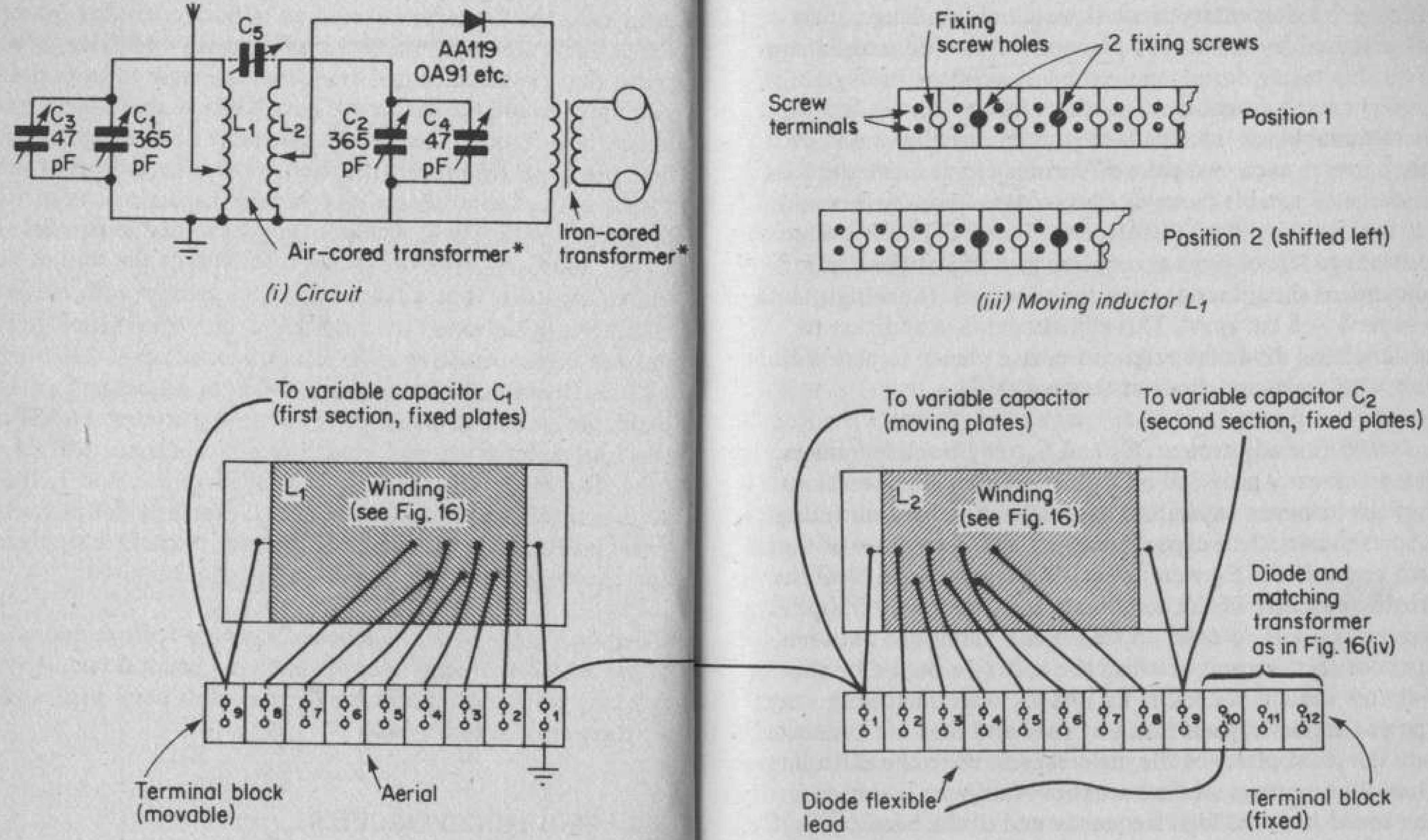


Fig. 18 Approximate capacitance and frequency values for 365 pF variable capacitor and 230 µH coil



(i) Circuit

(iii) Moving inductor L_1

(ii) Arrangement of inductors

Fig. 21 A double-tuned crystal receiver

* See Section 2.4

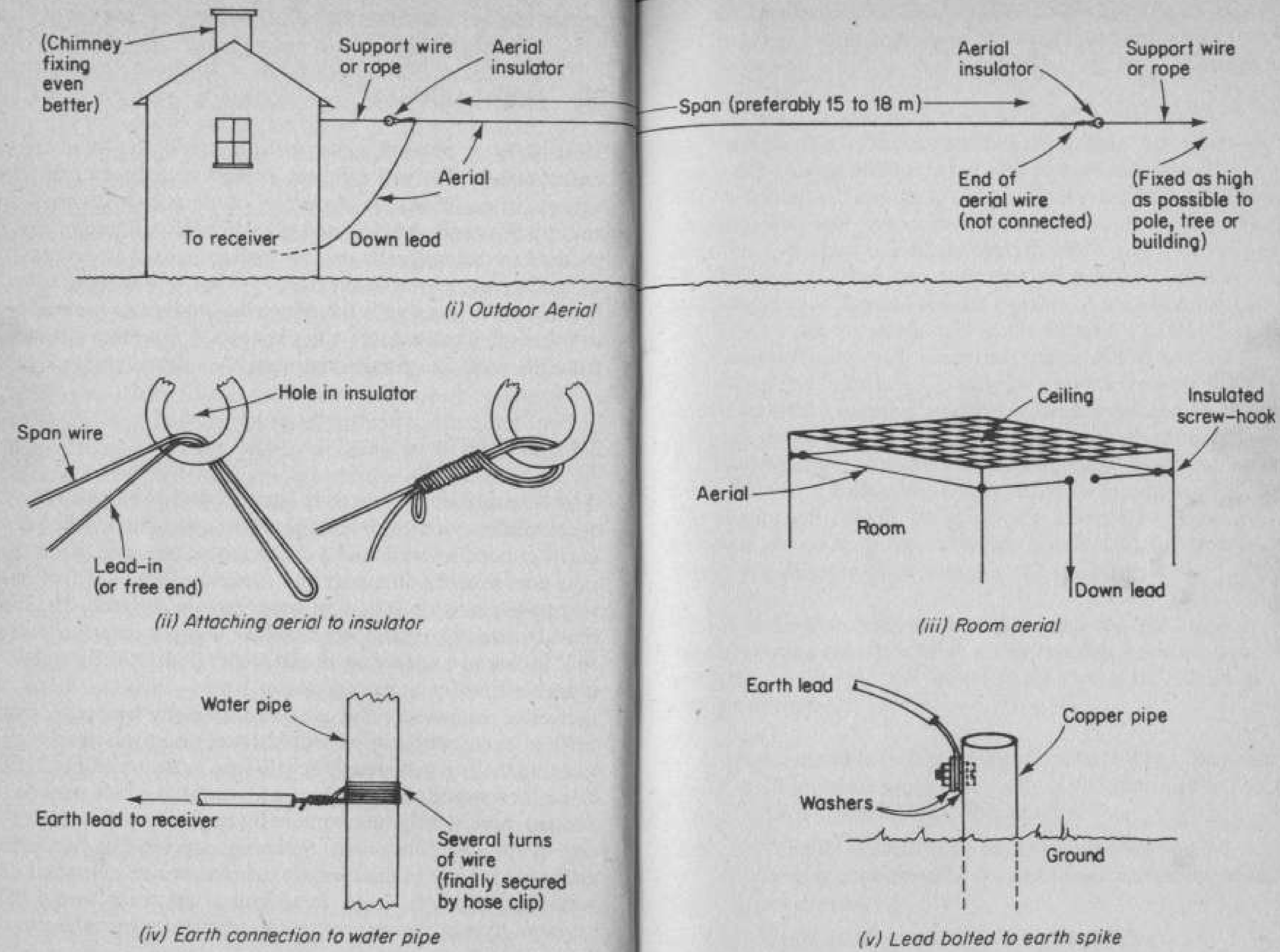


Fig. 12 Aerial/earth systems

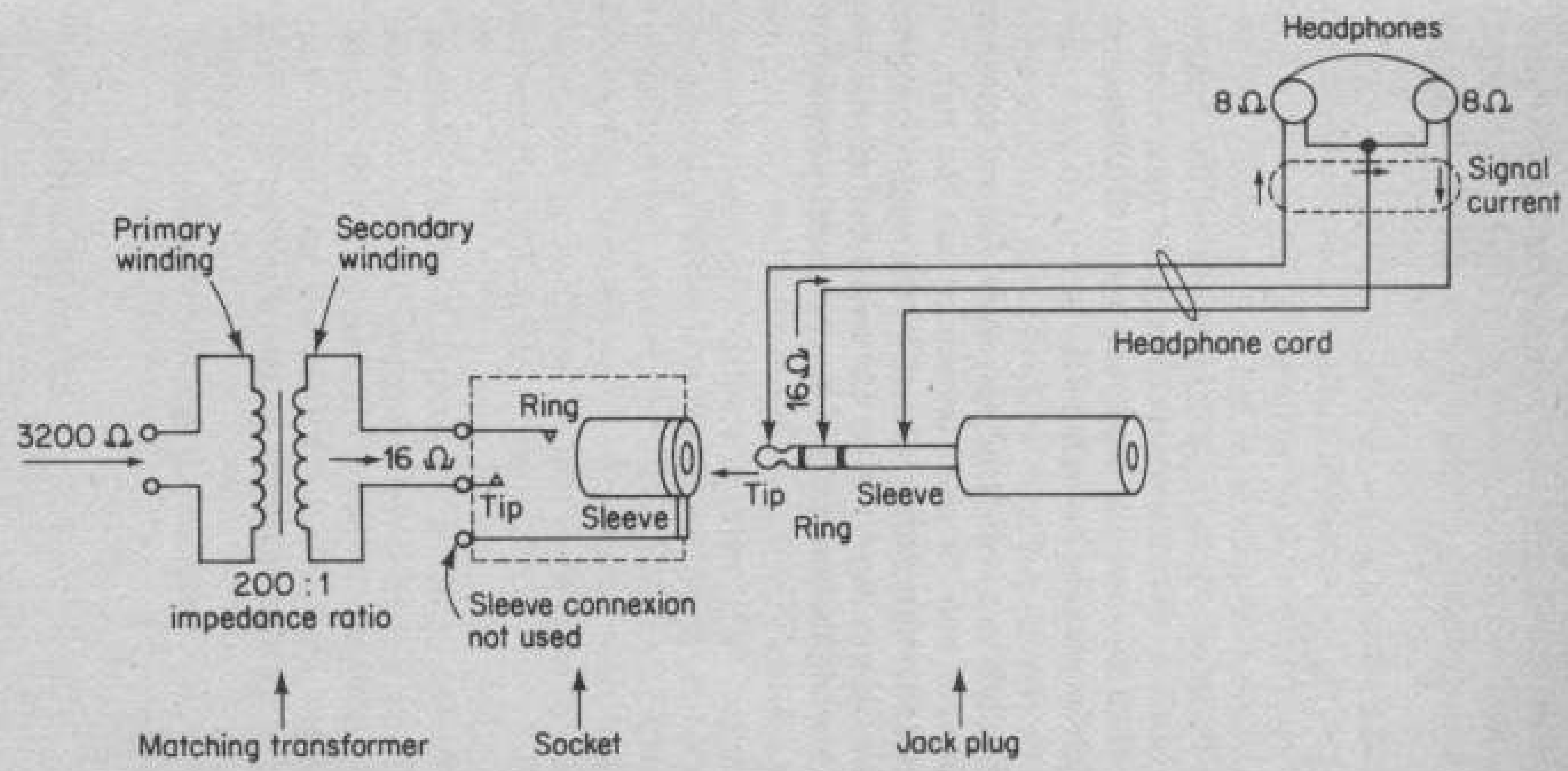
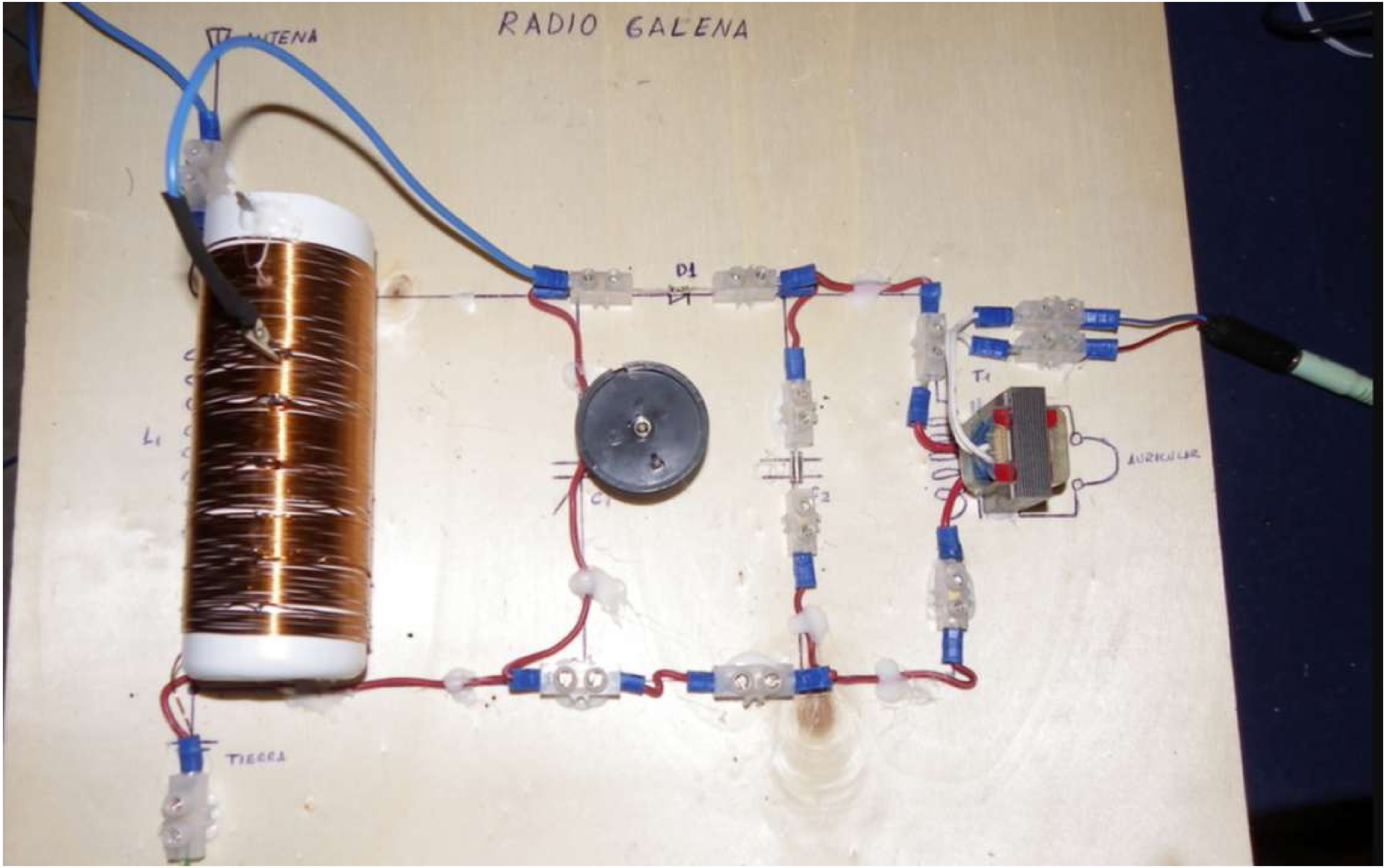
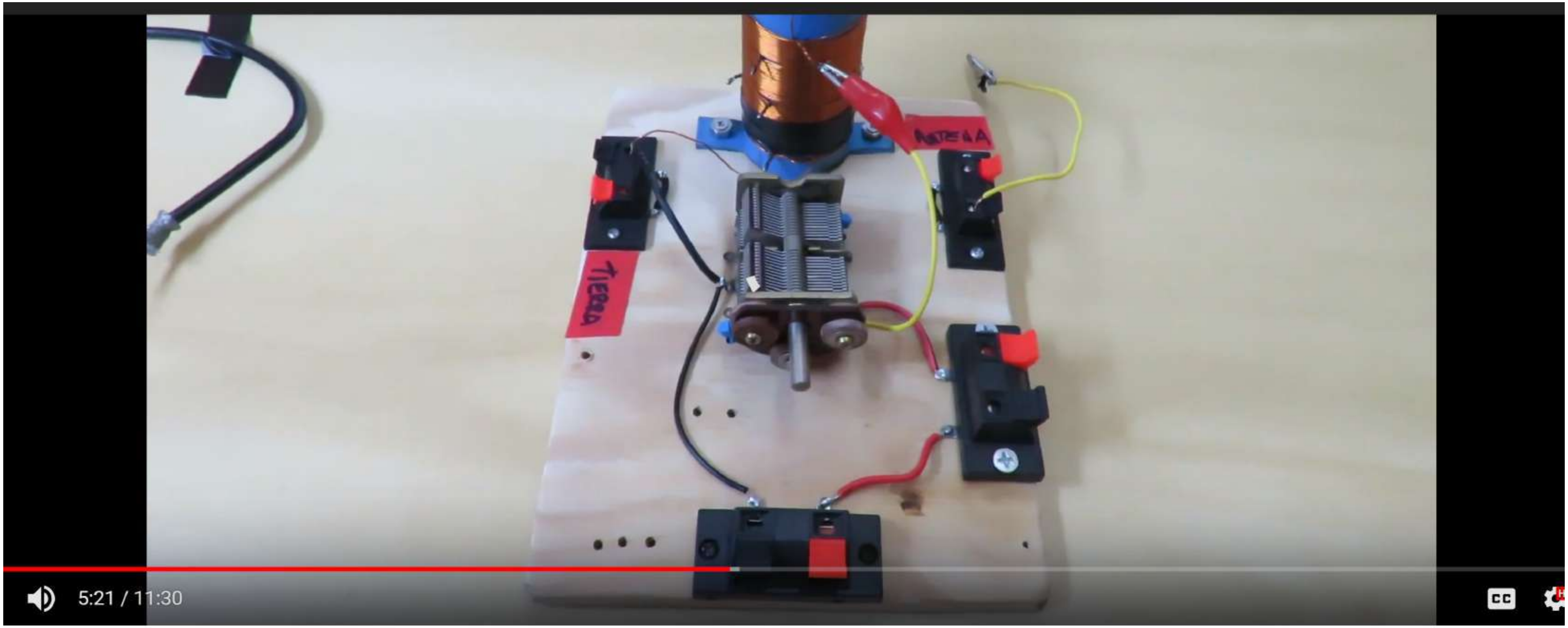


Fig. 11 Matching a high impedance receiver to low impedance headphones

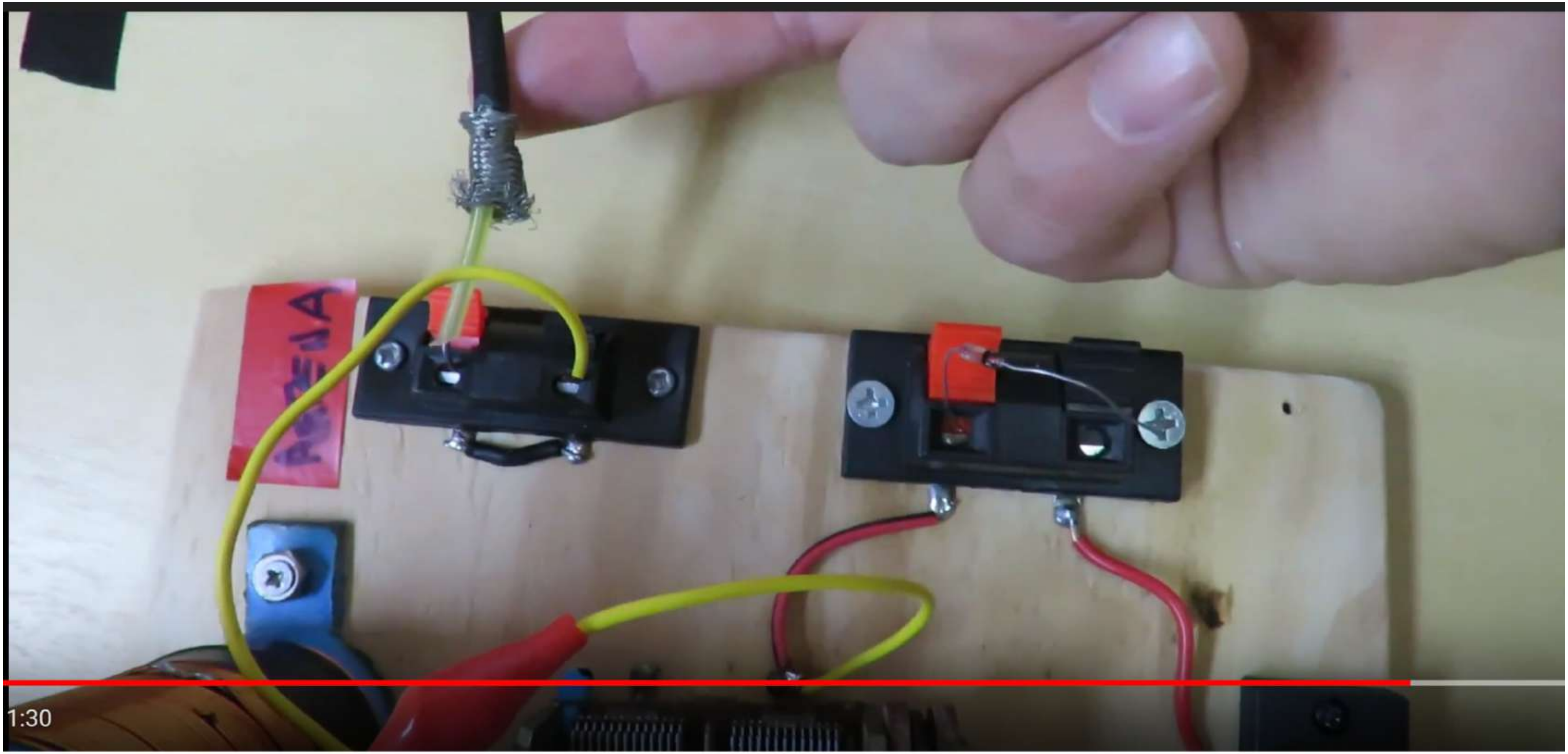

RADIO GALENA
D1
T1
AURICULAR
TIERRA



Up next

AUTOPLA

Radio Galena en la practica (con diodo detector)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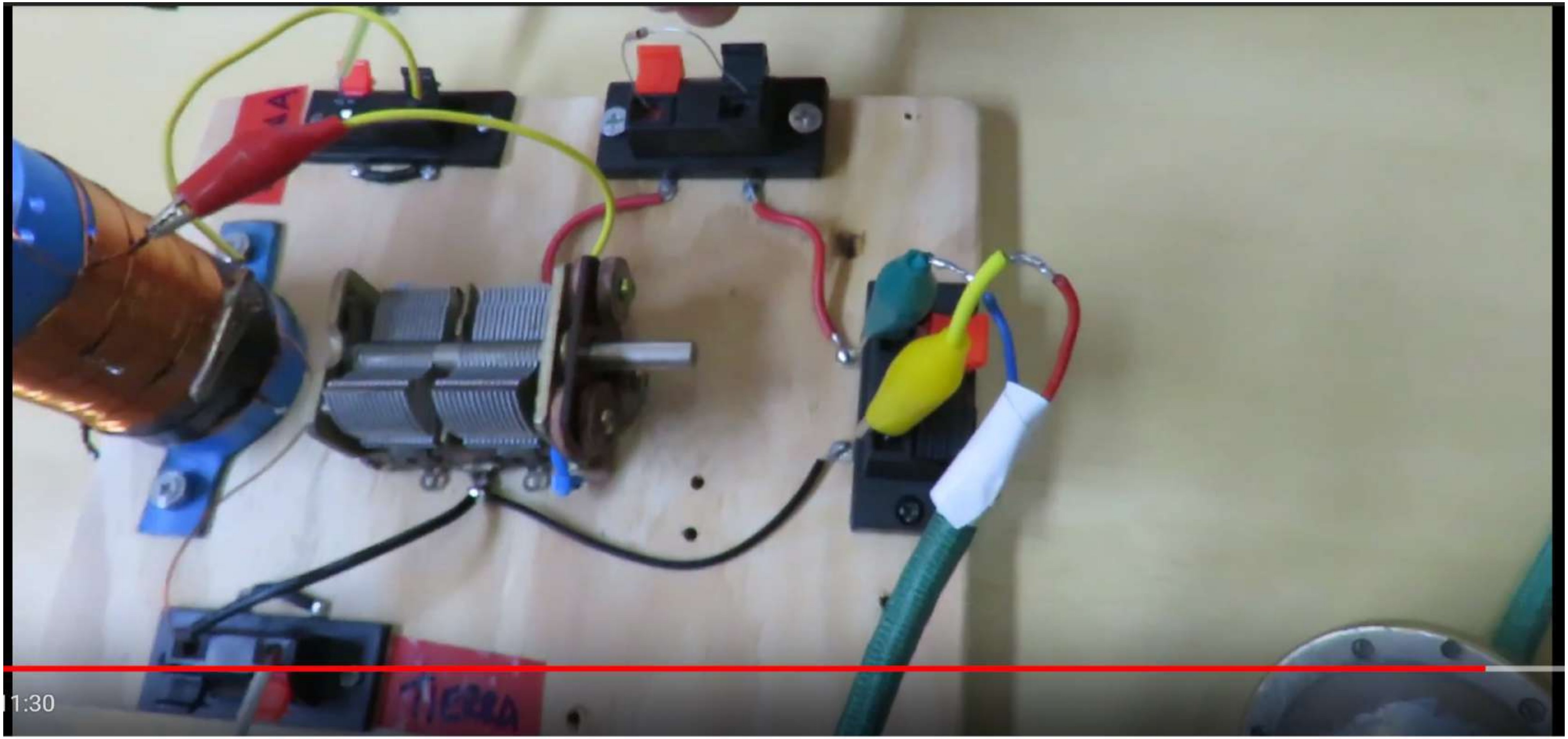
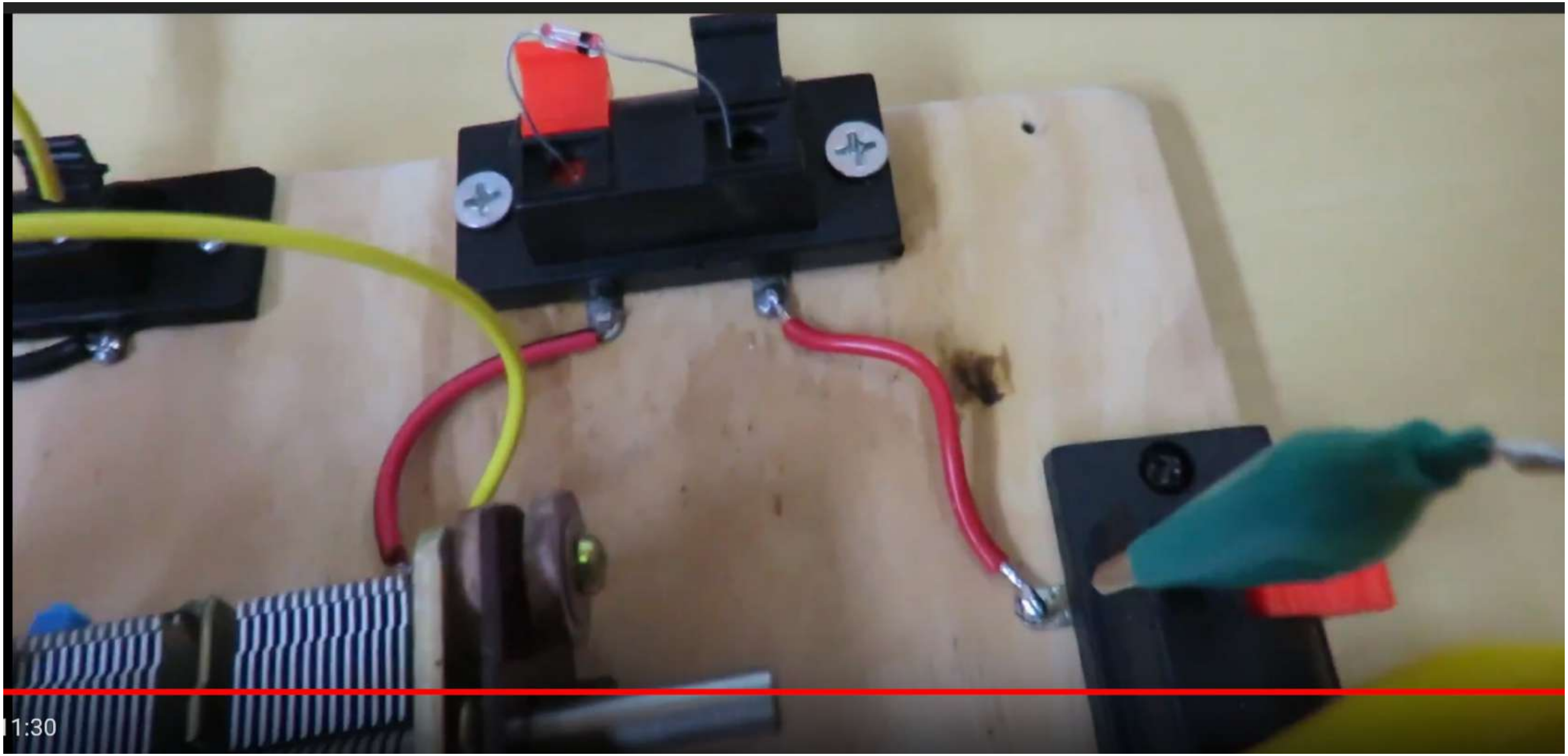

TIERRA


11:30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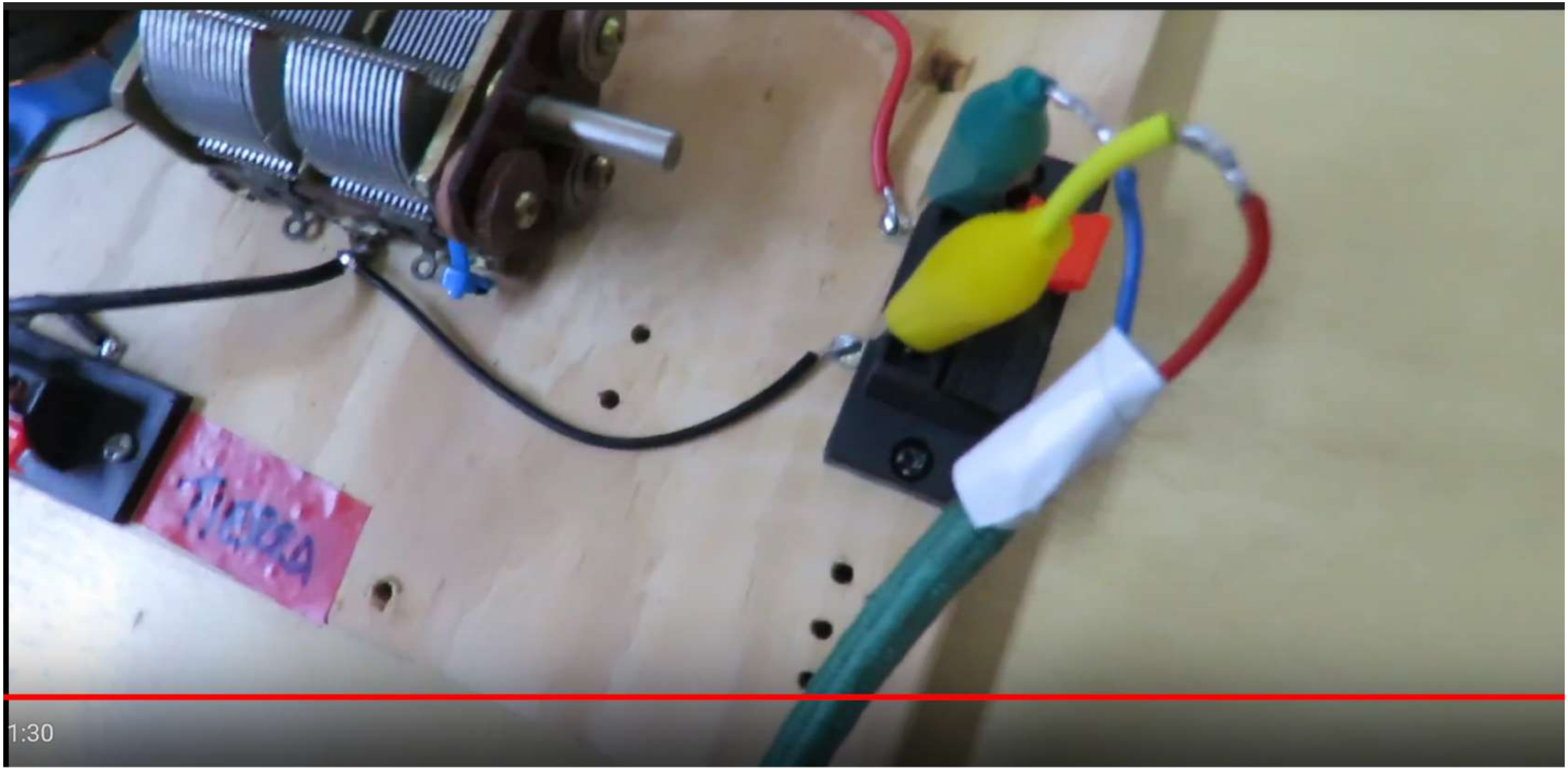
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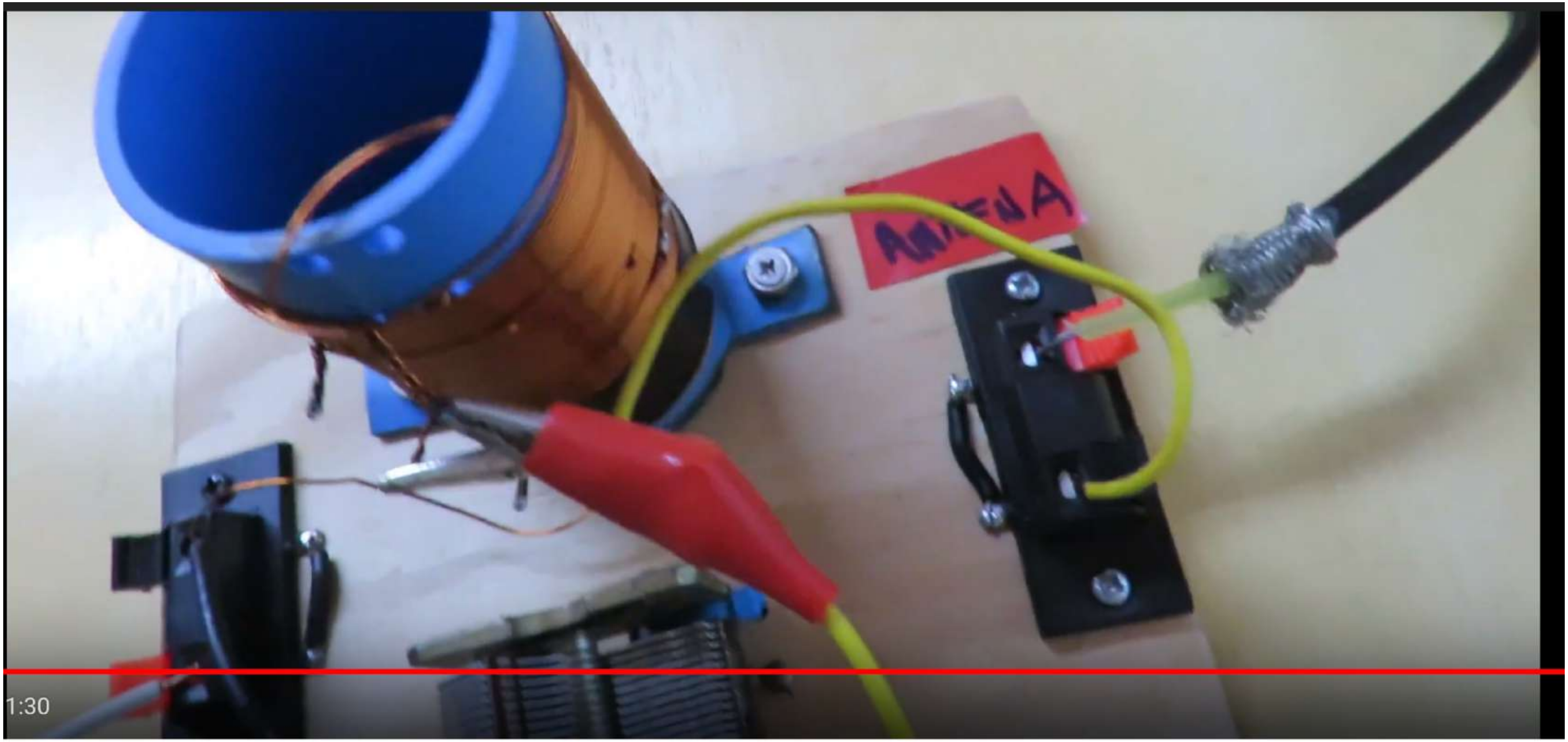
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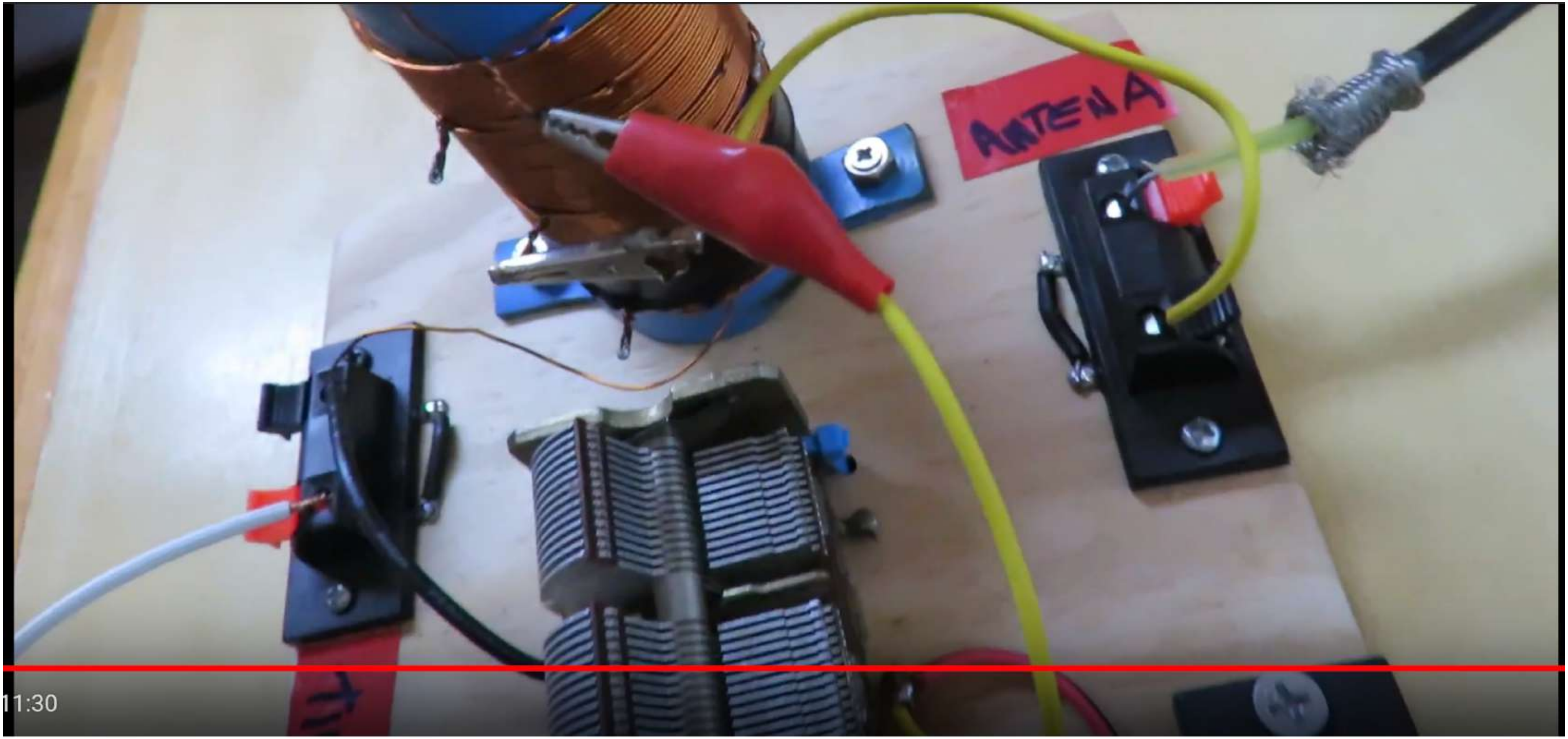
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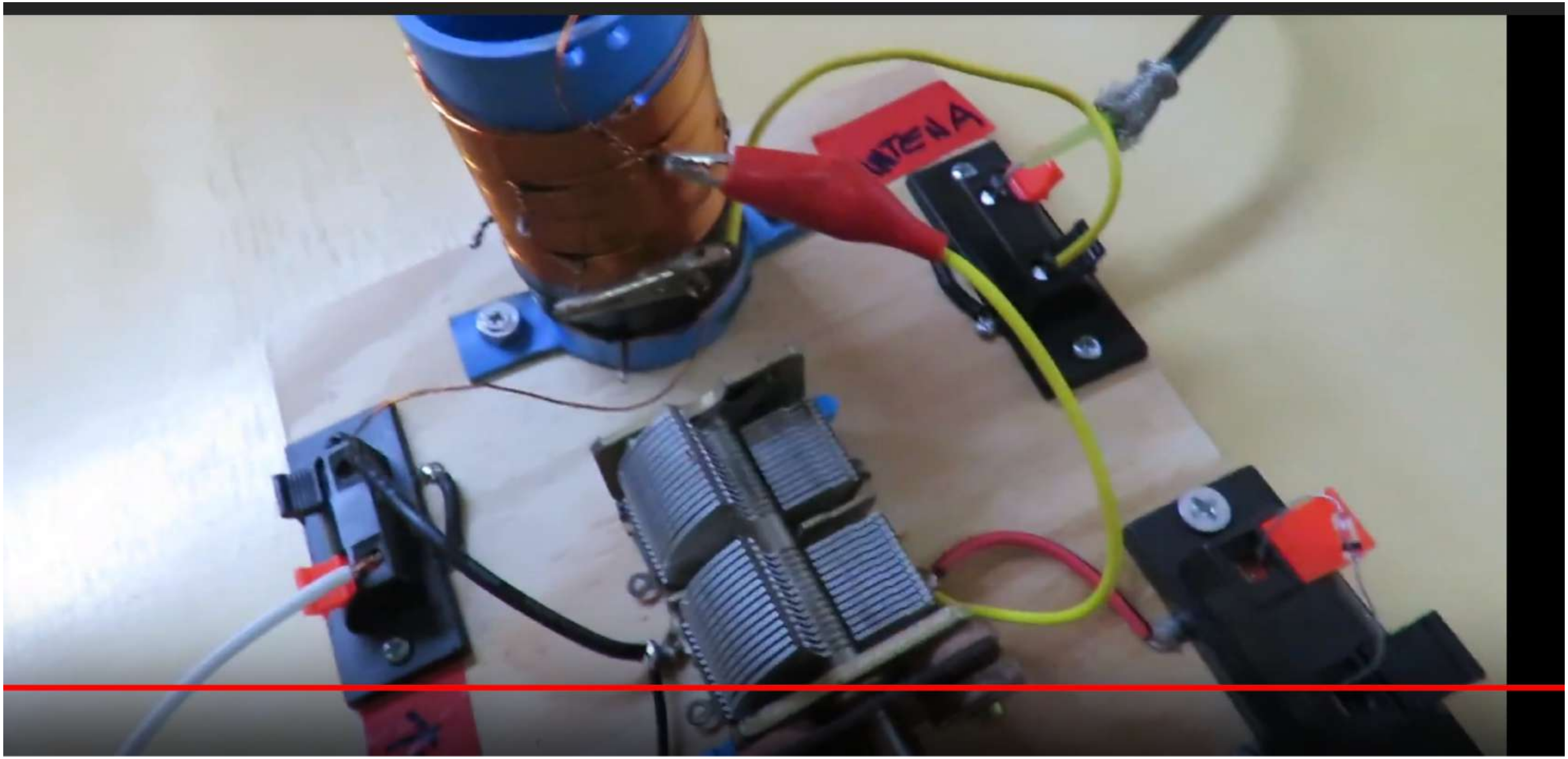

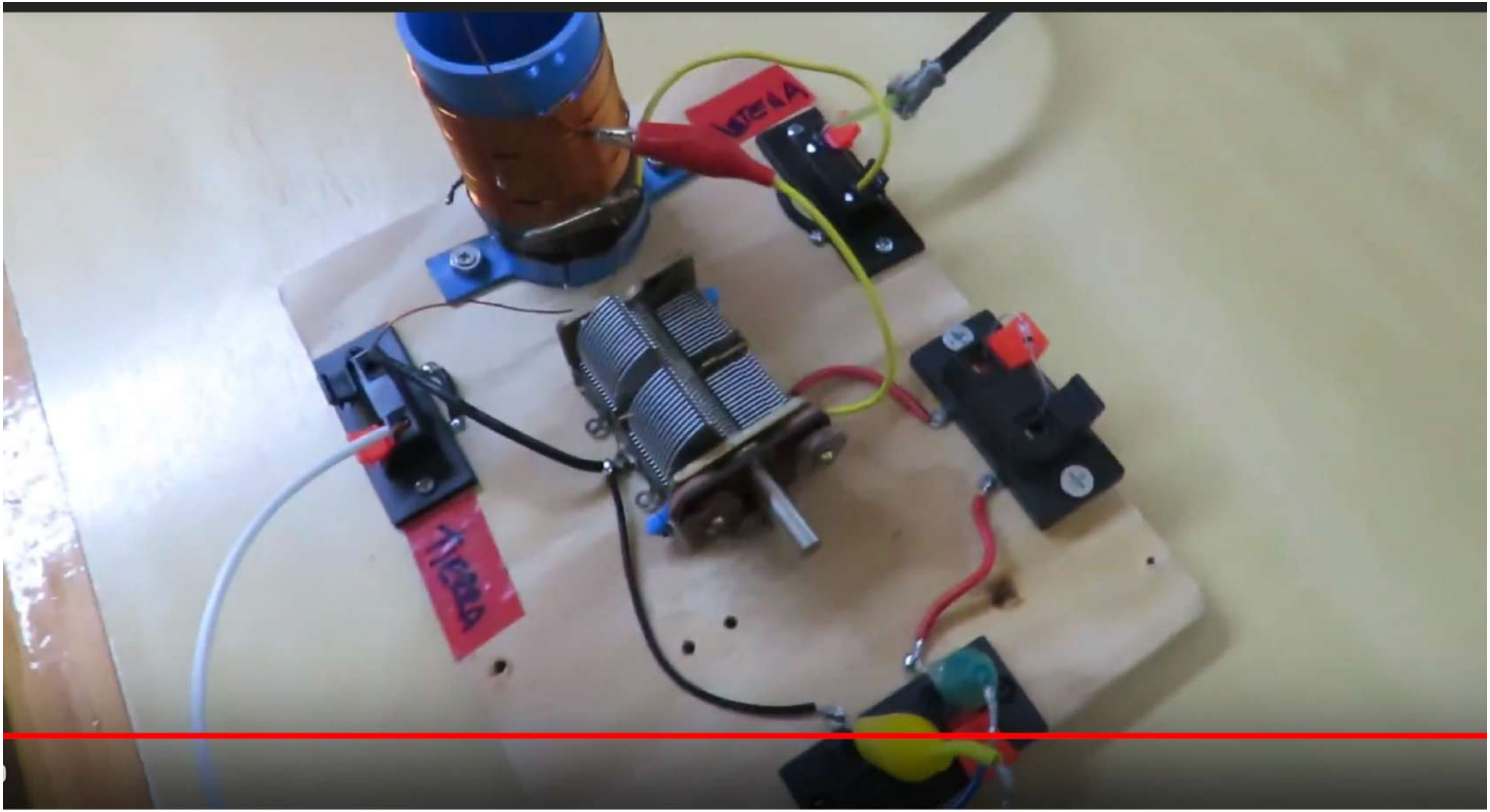
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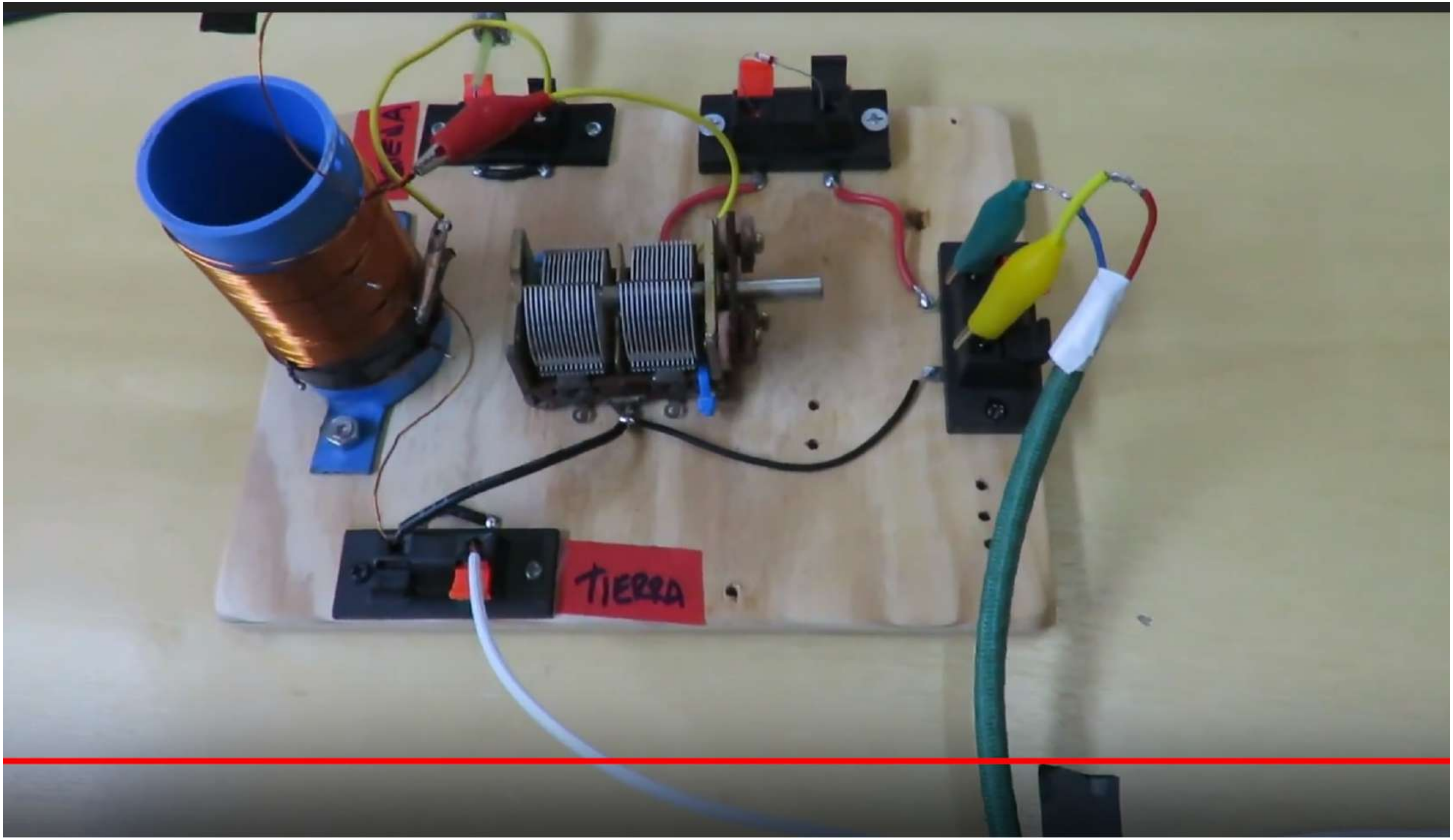
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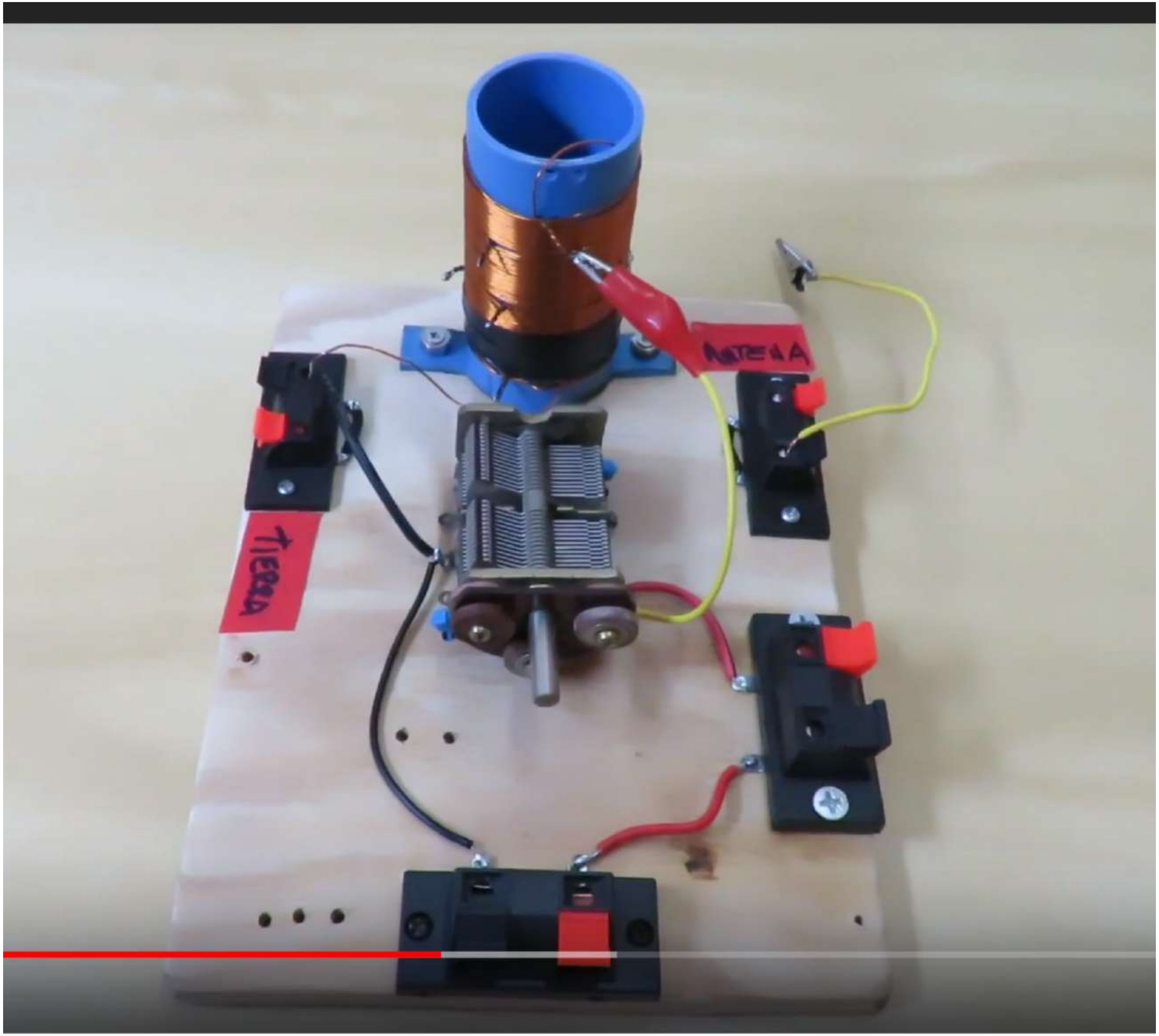
Tubo de PVC de 40 mm de diámetro,
y 12 cm de largo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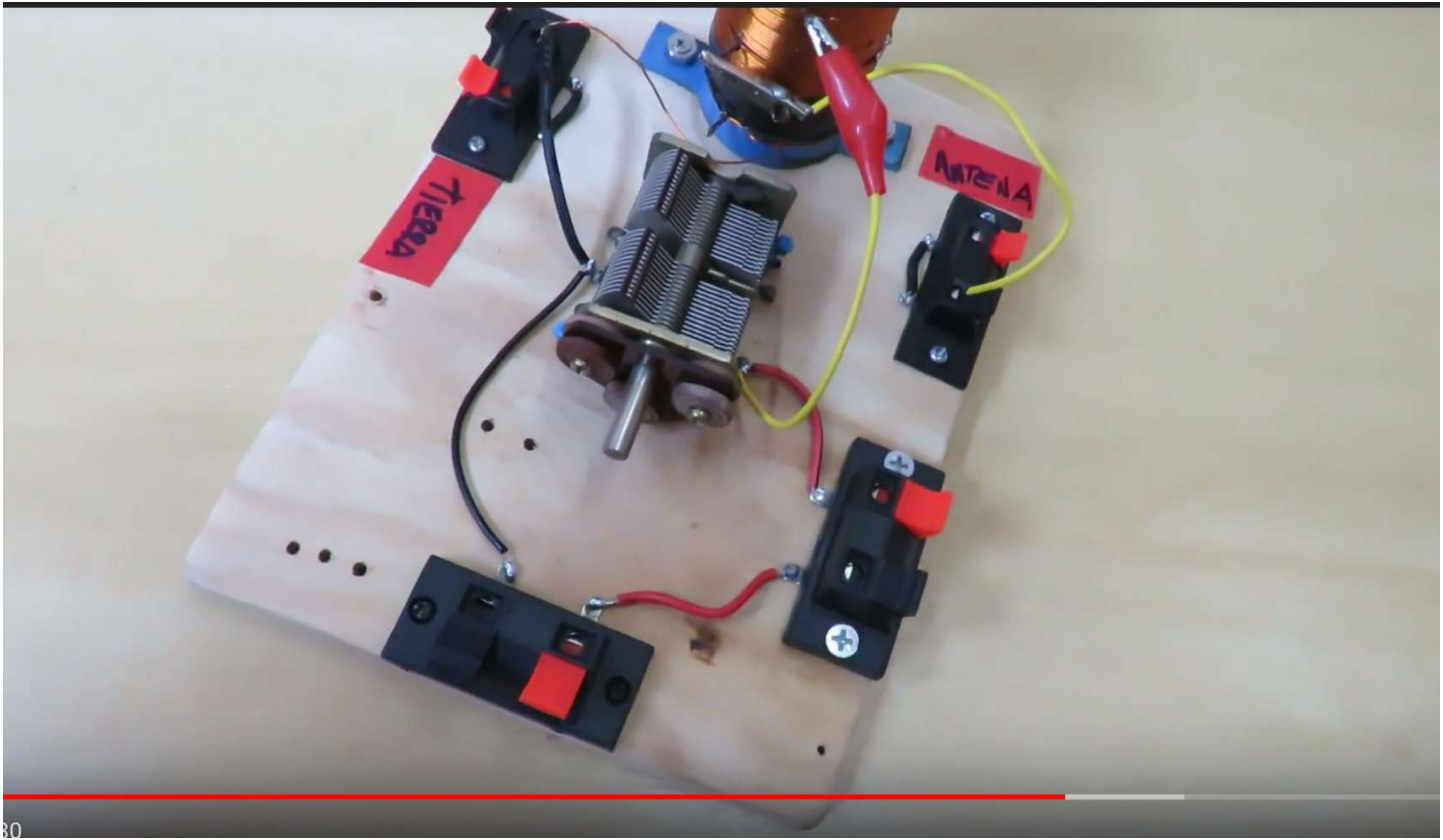
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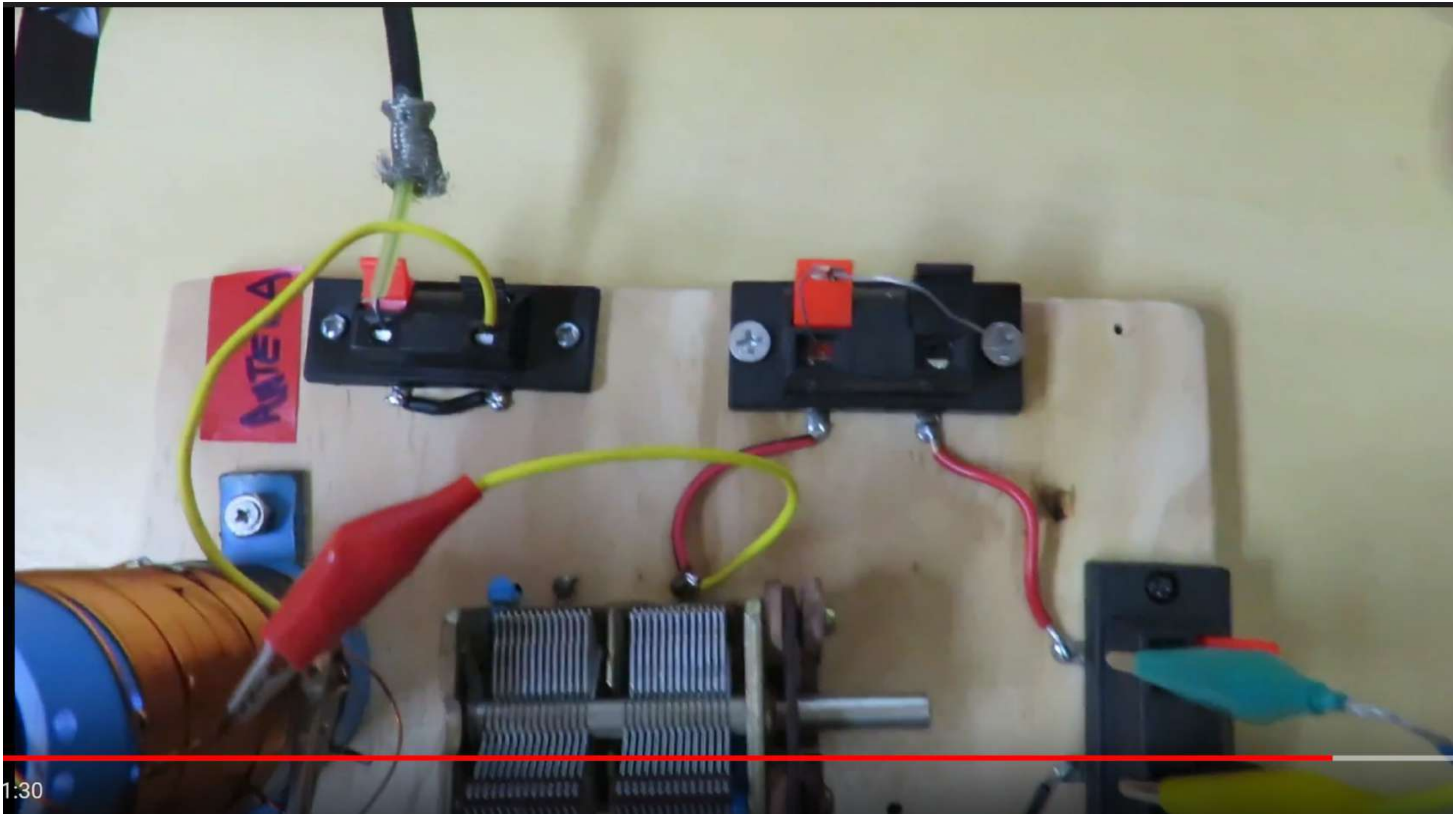
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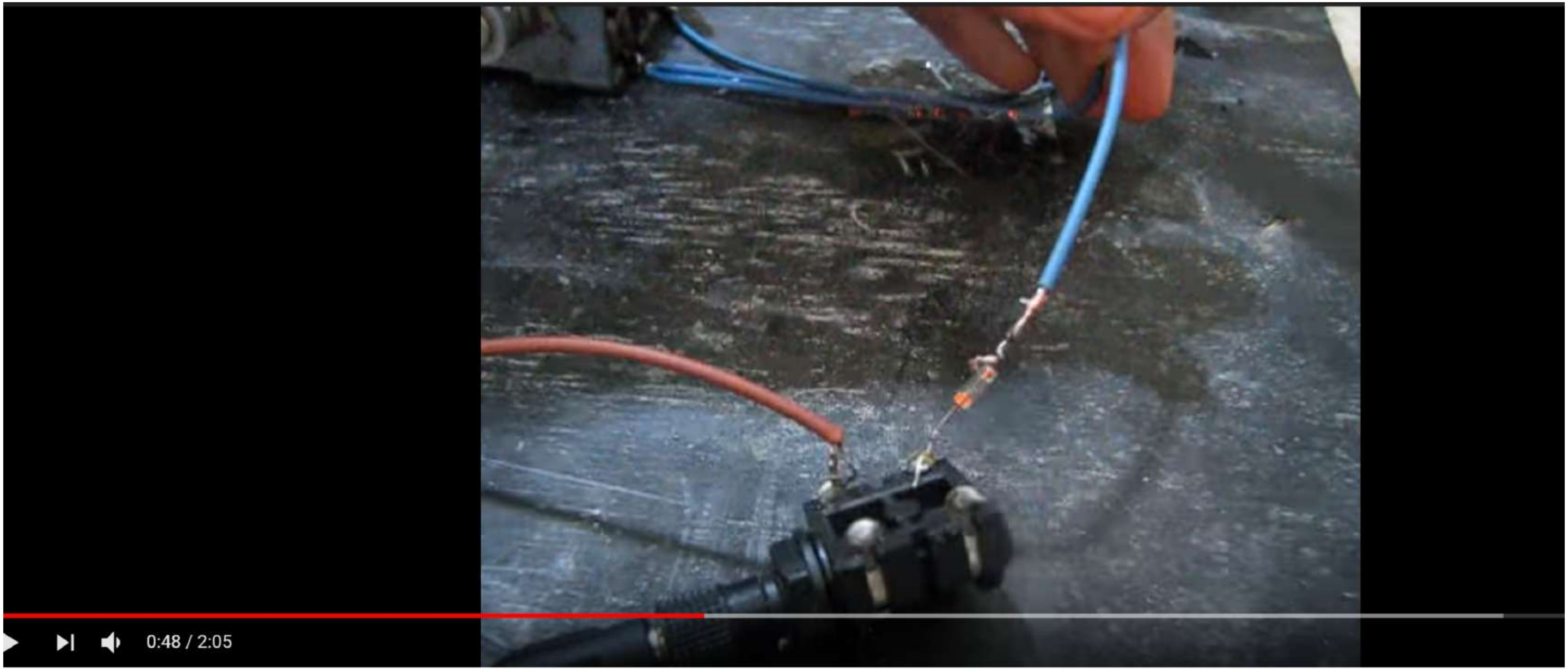
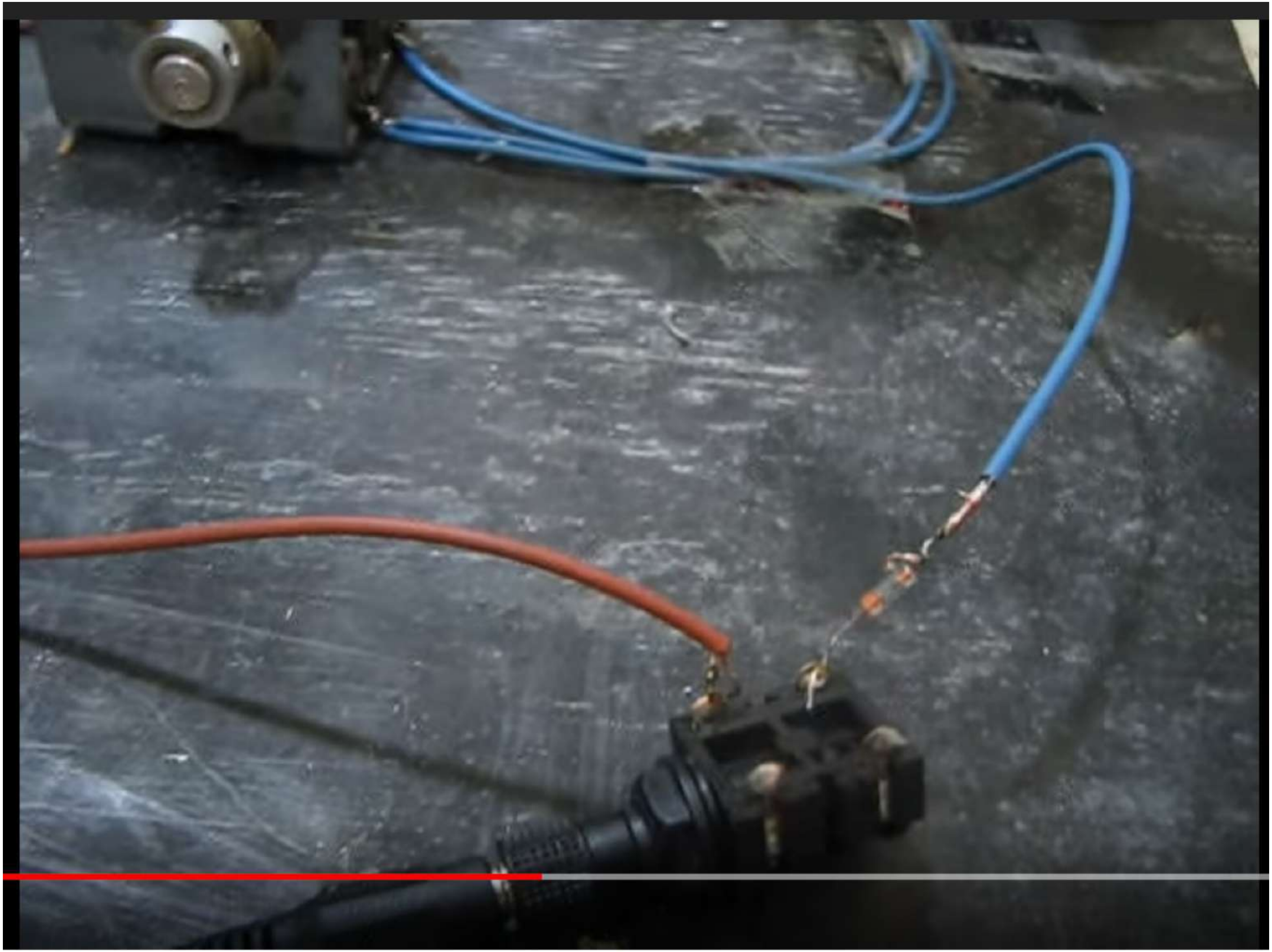
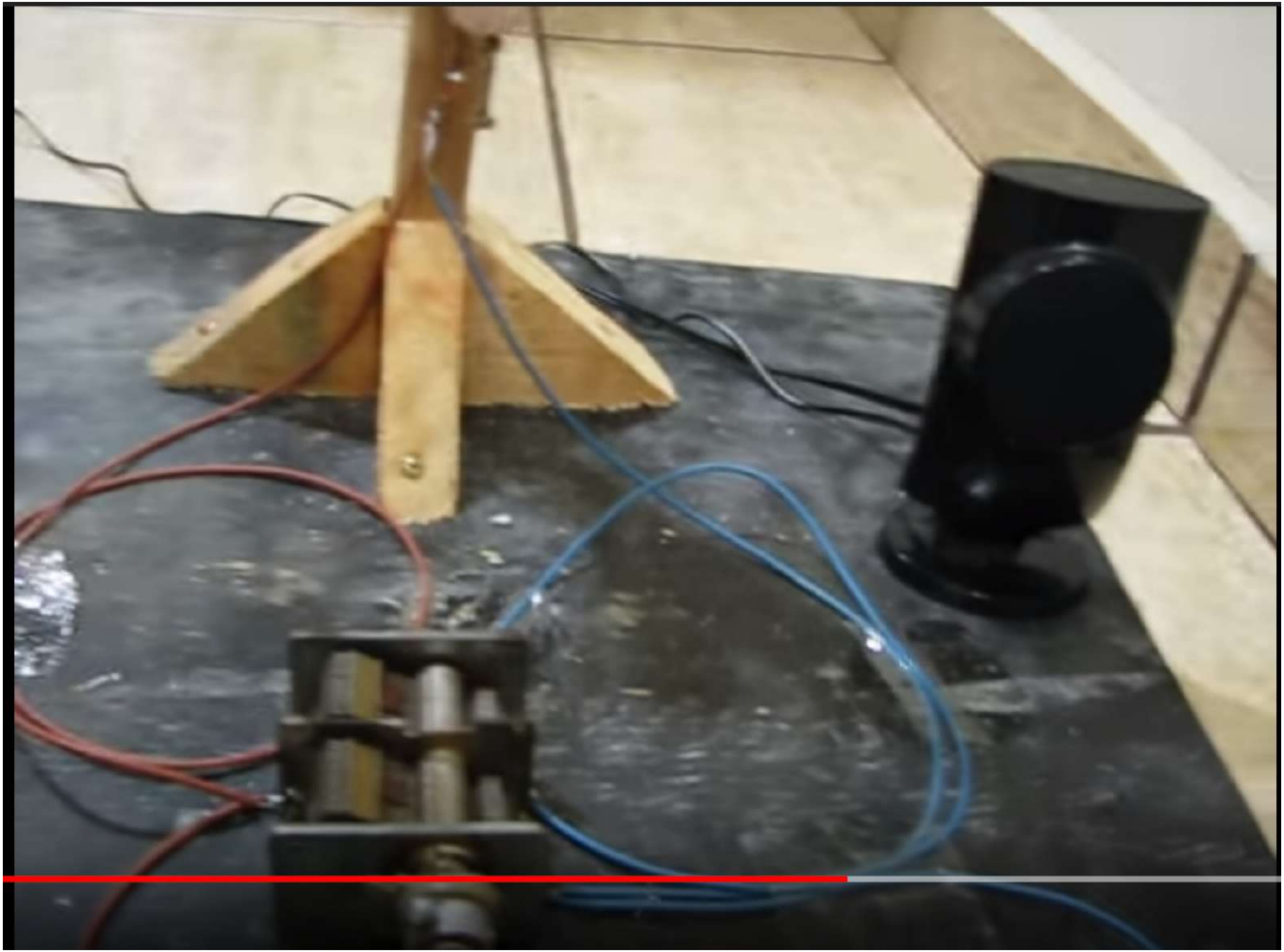


Up next

Rádio de Galena com Antena de Quadro - UTFPR - TD



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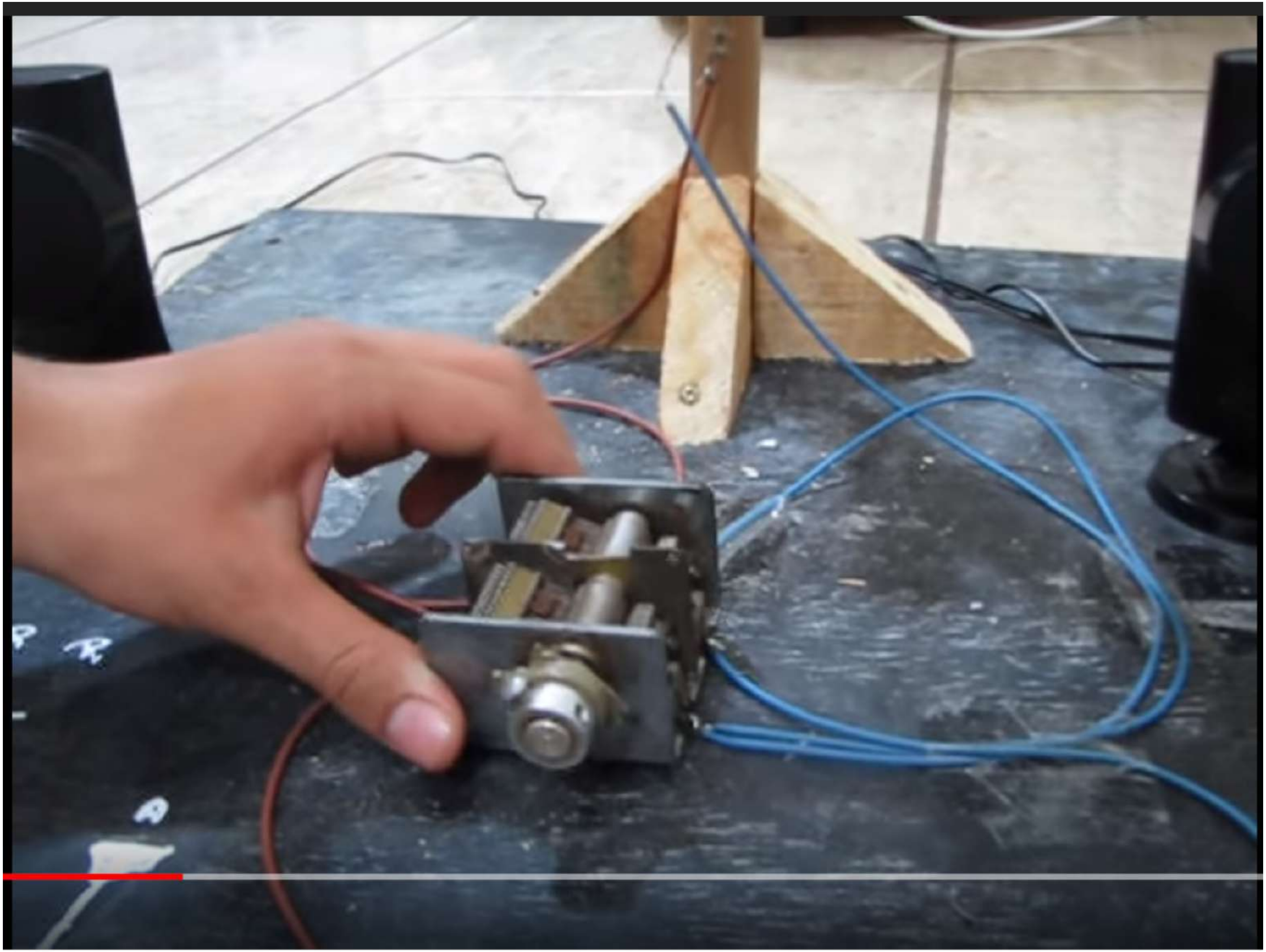
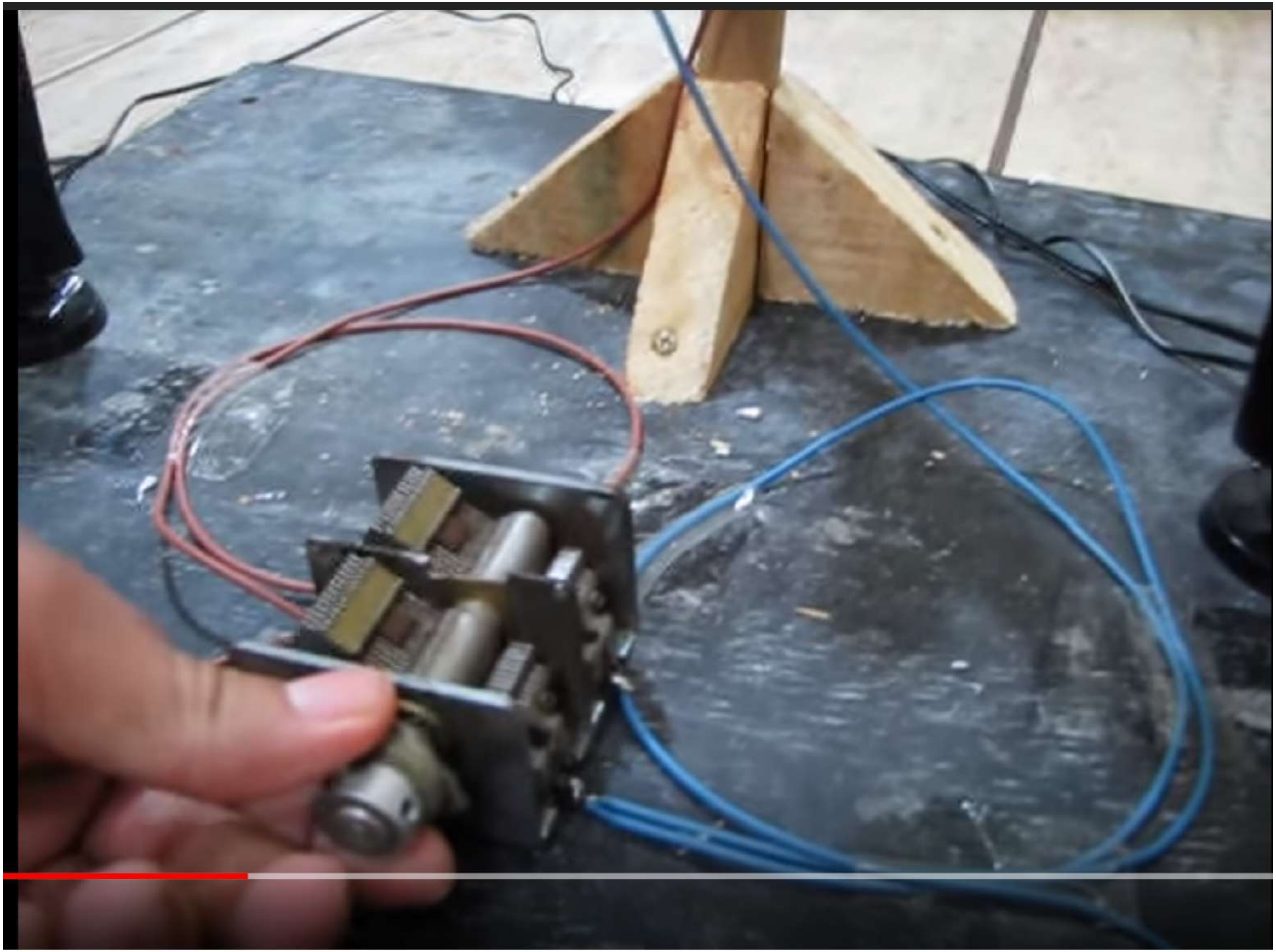
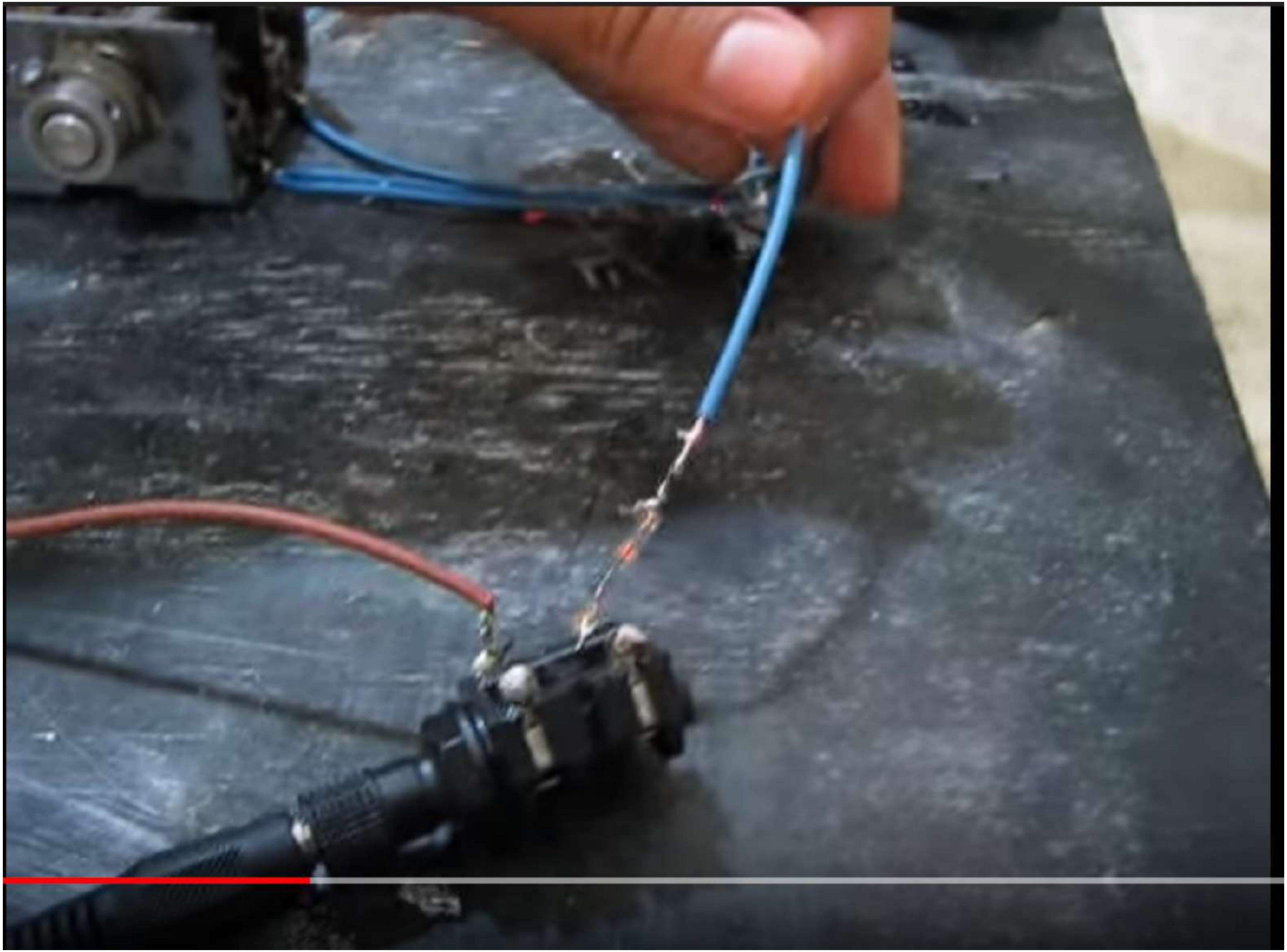
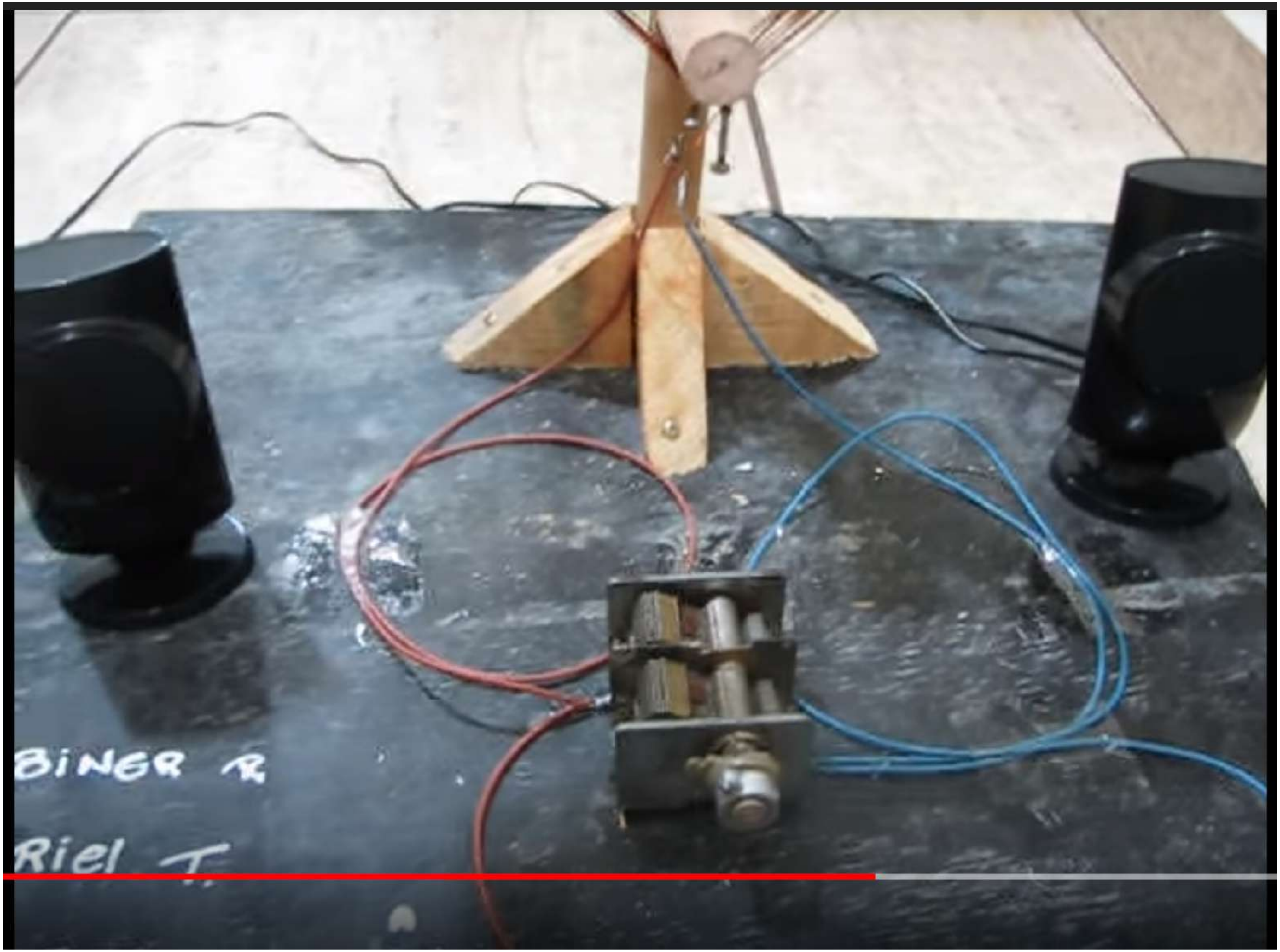
BRiel T.





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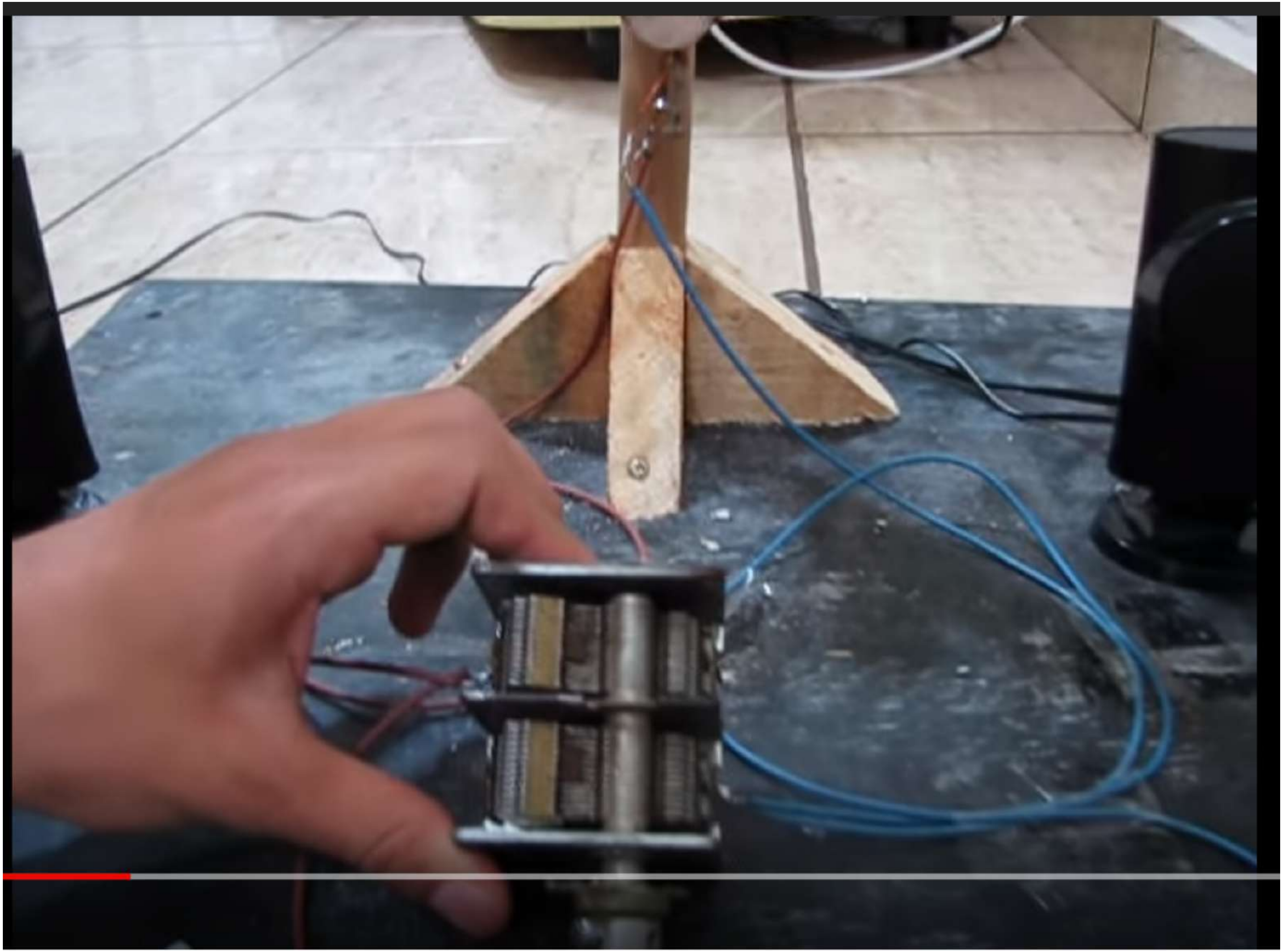

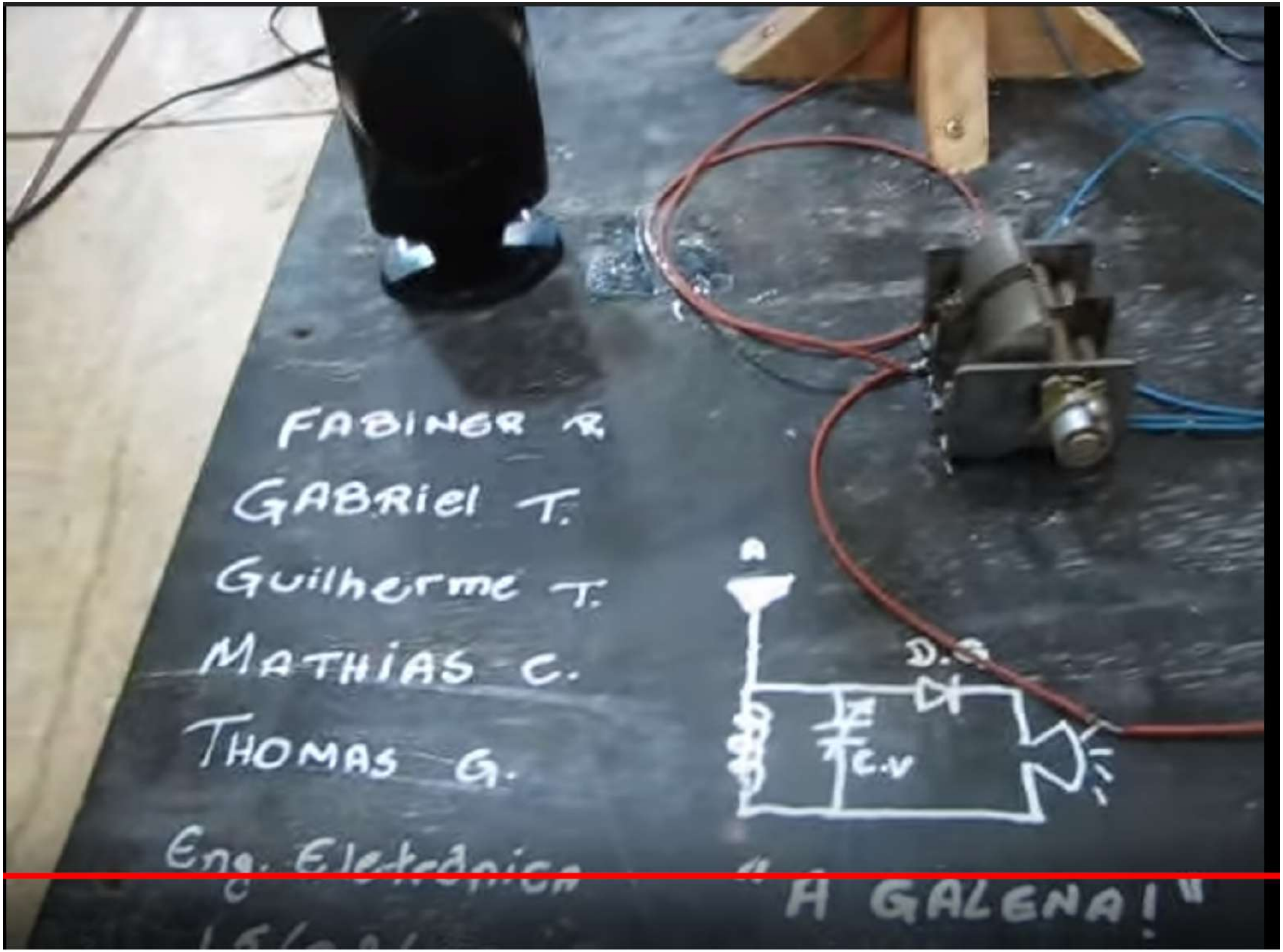
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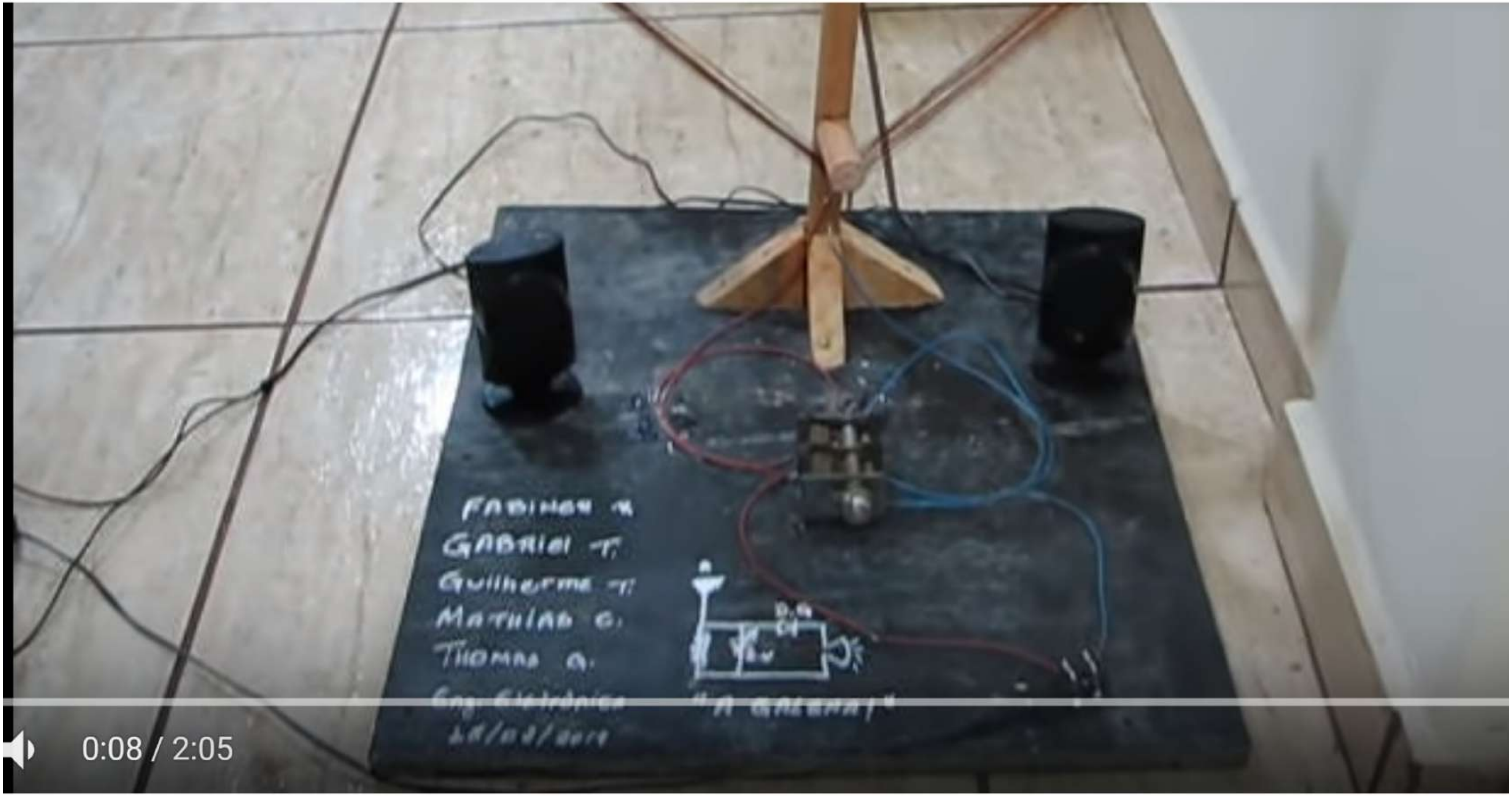
GABRIel T.
Guilherme T.
MATHIAS C.
THOMAS G.
D.G
C.V
Eng. Eletrônica
"A GALENA!"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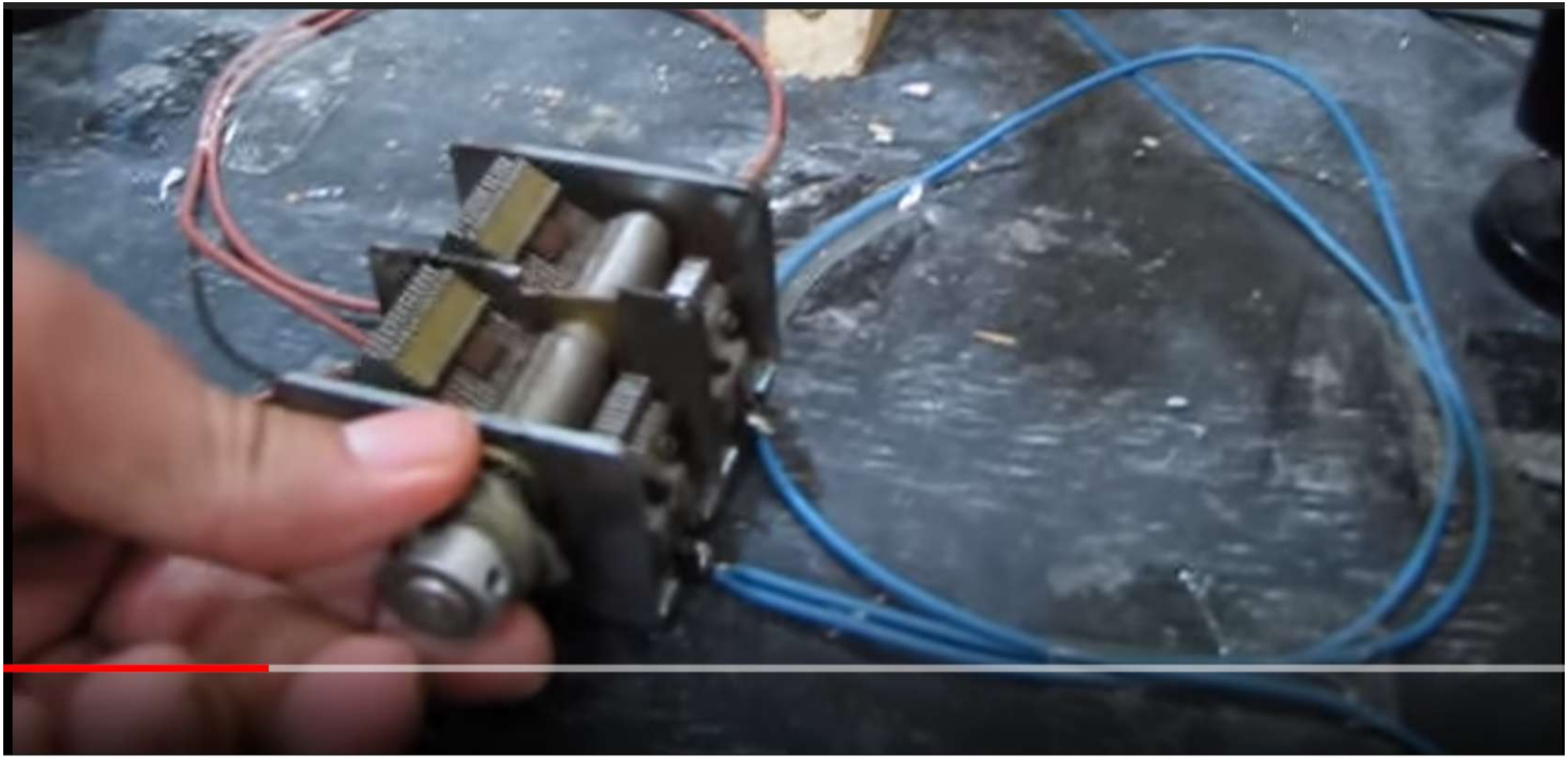
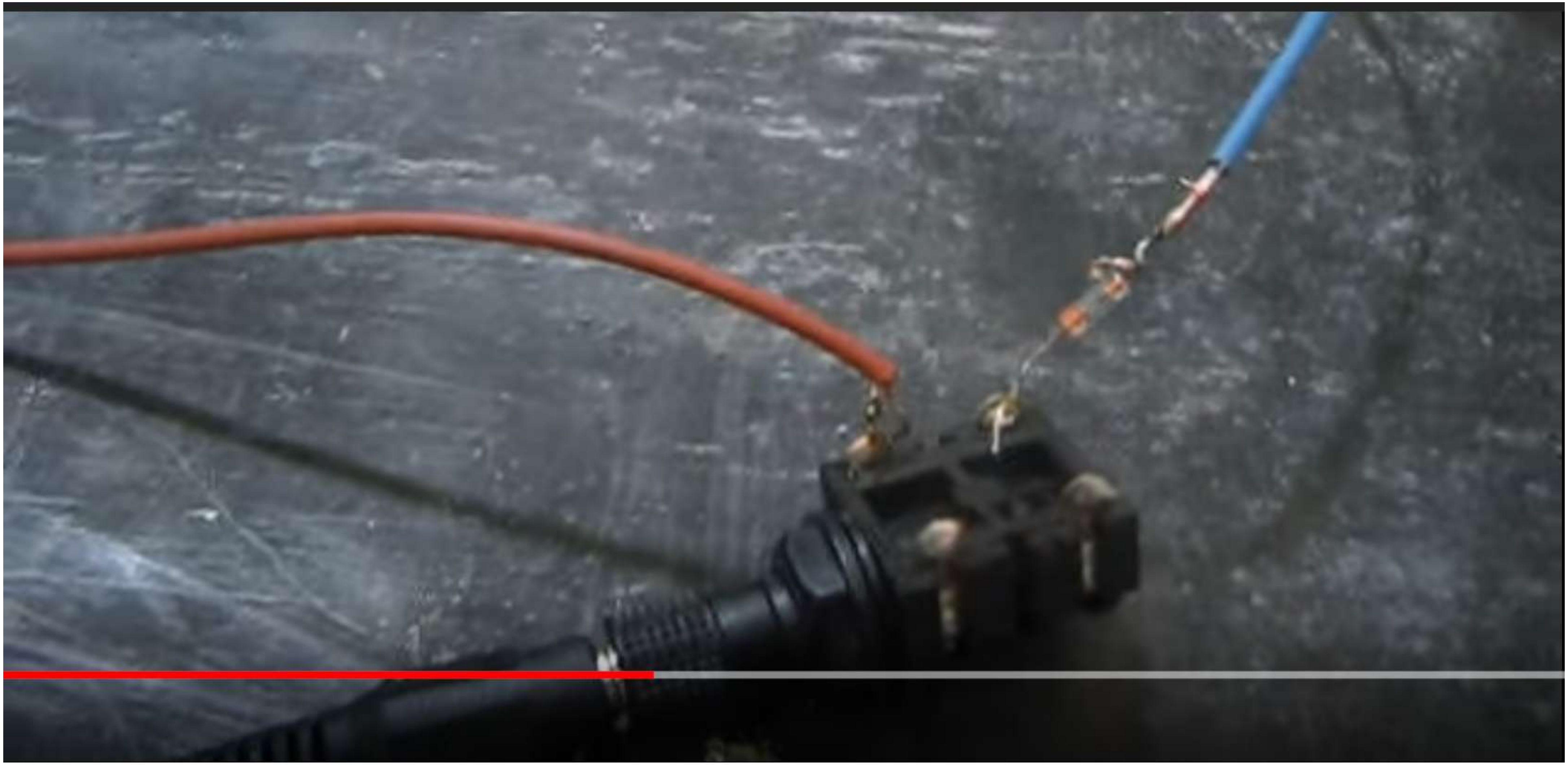
0:08 / 2:05





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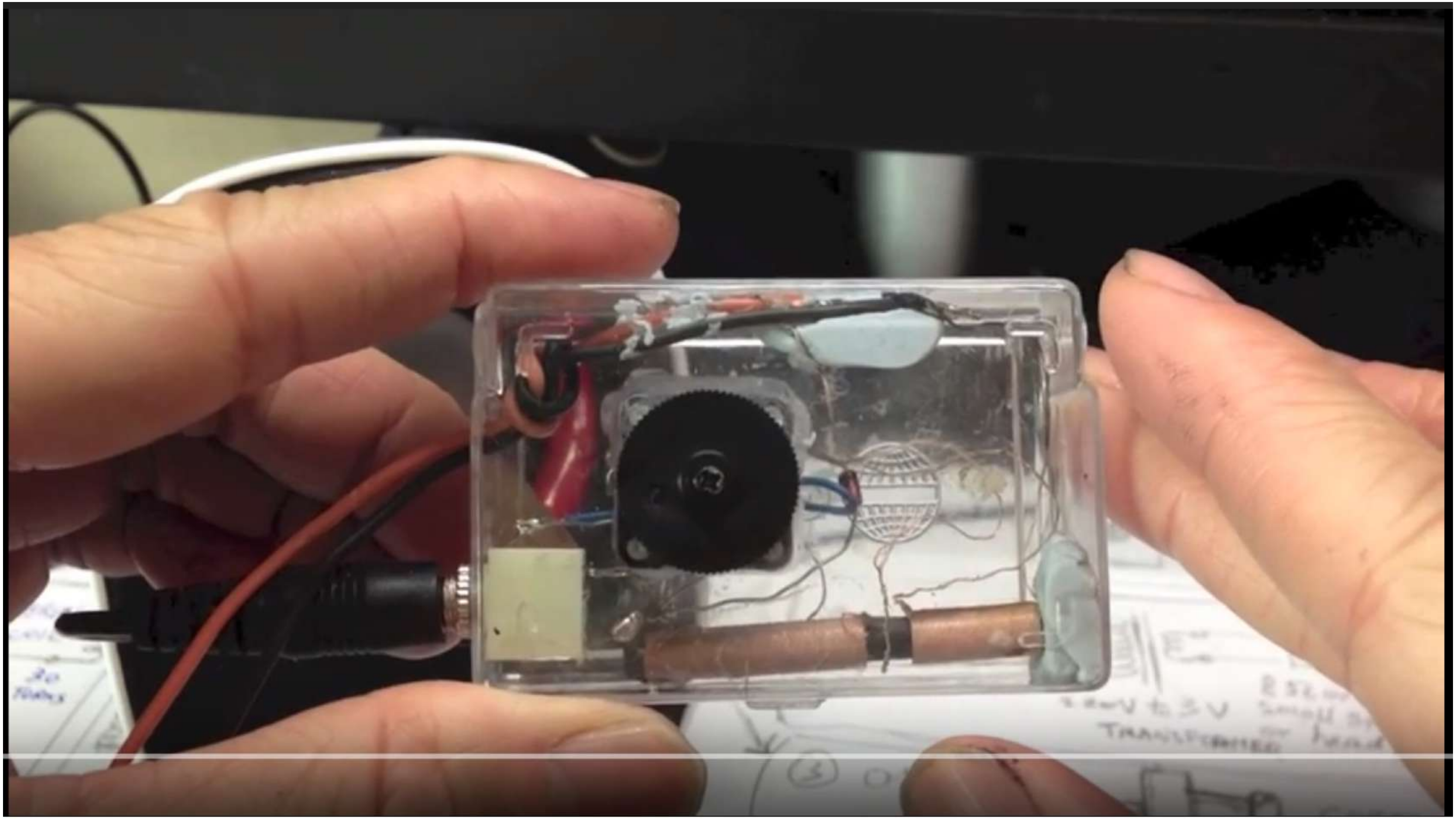
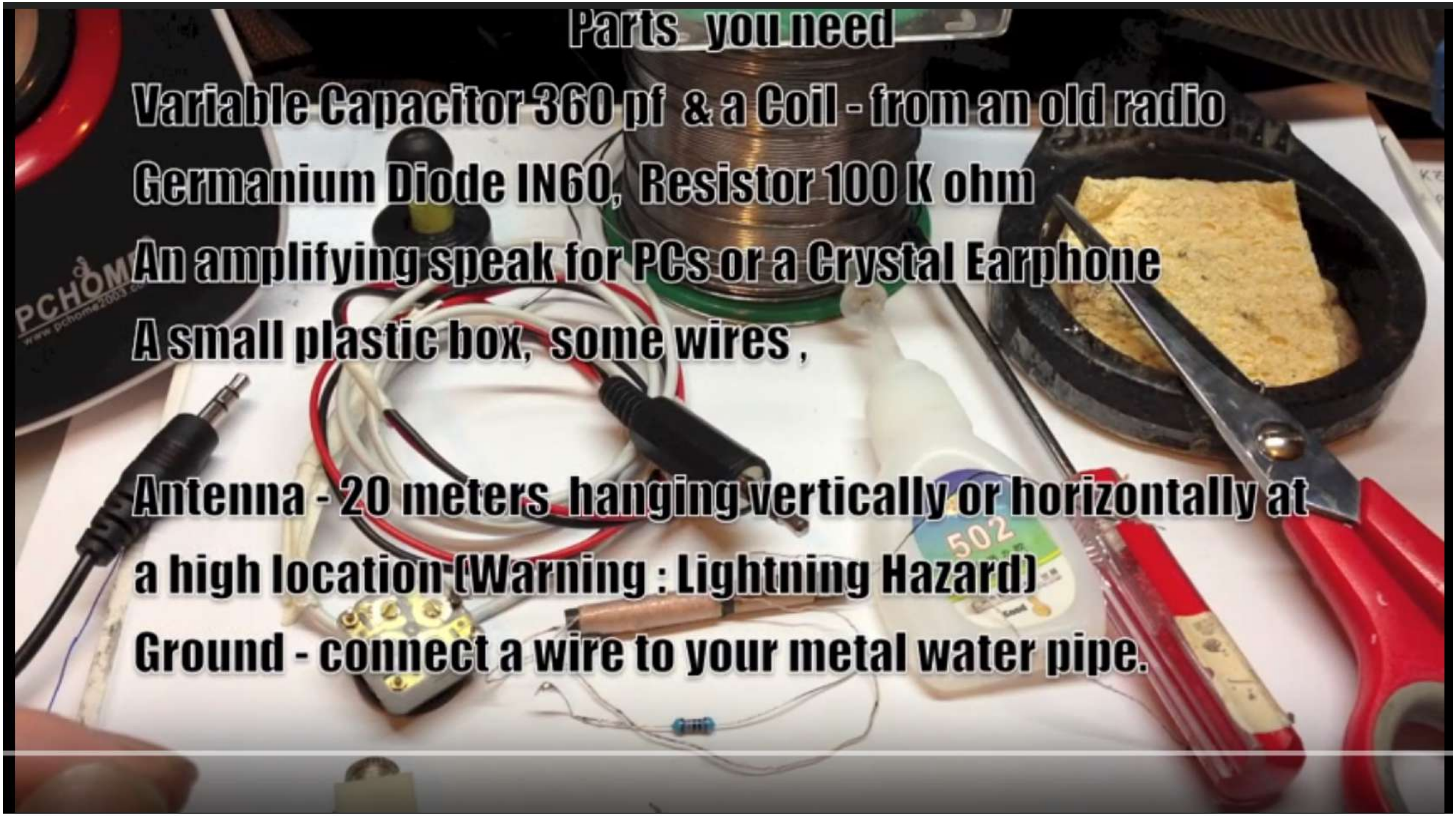
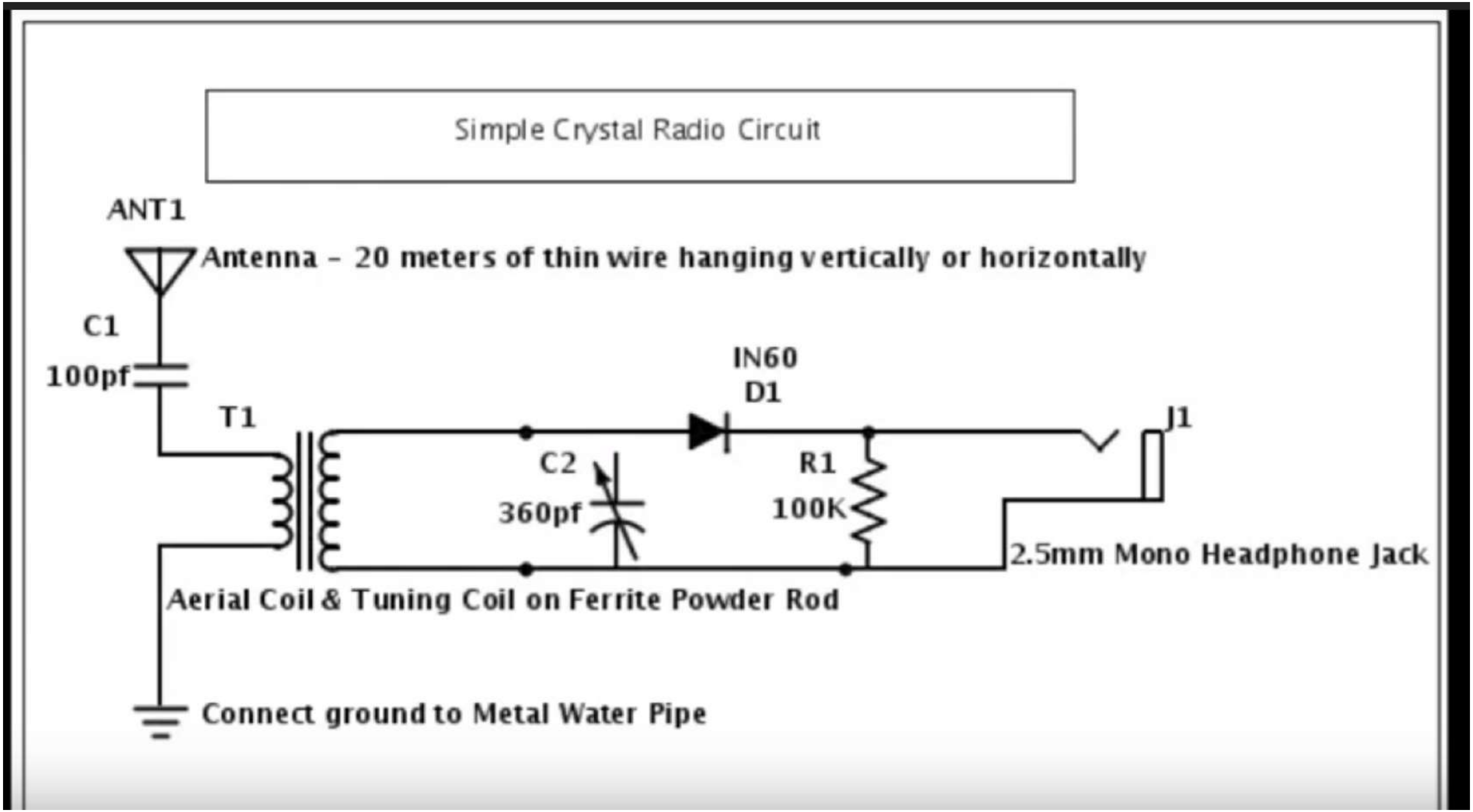
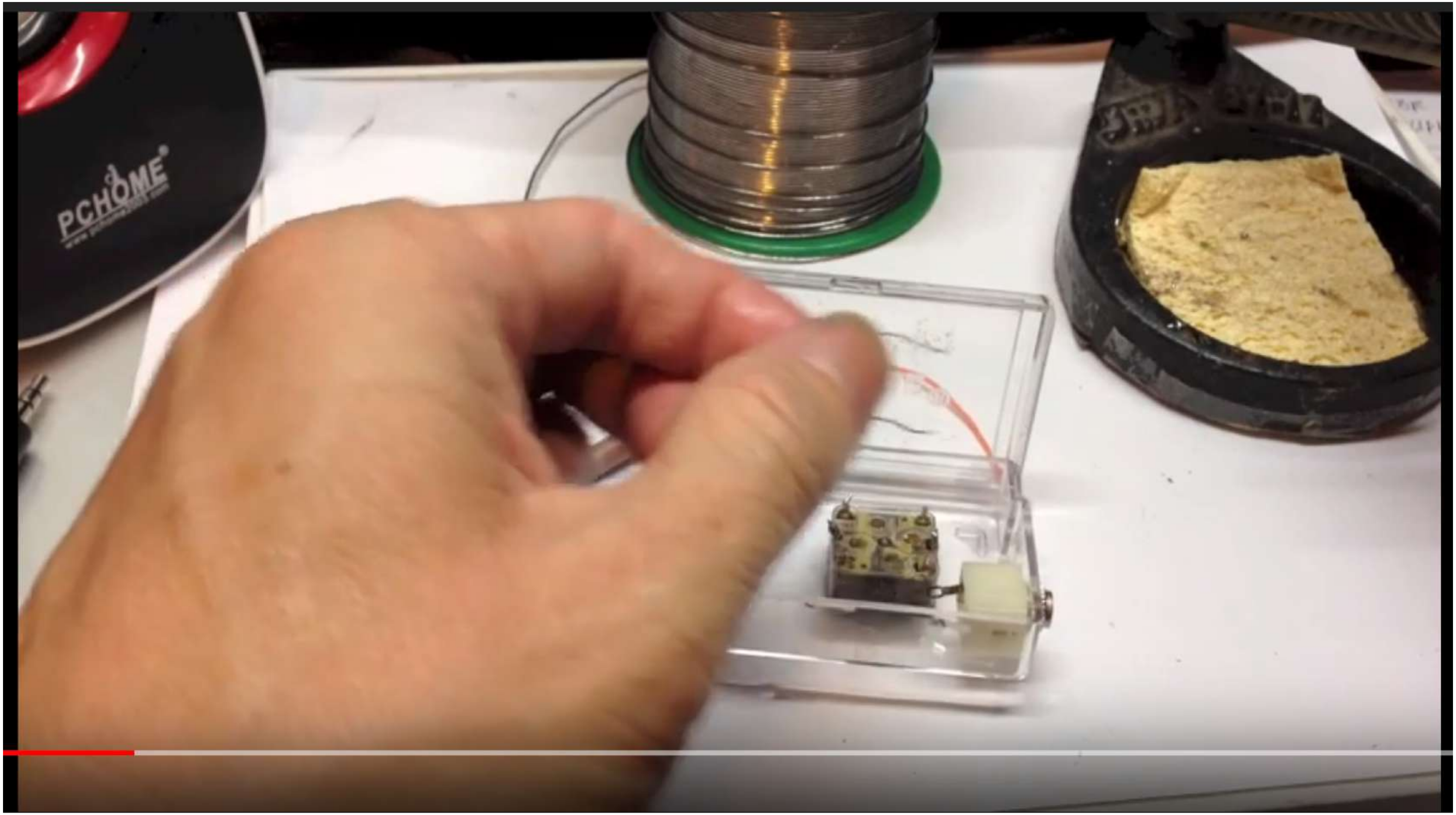



Parts you need
Variable Capacitor 360 pf & a Coil - from an old radio
Germanium Diode IN60, Resistor 100 K ohm
An amplifying speak for PCs or a Crystal Earphone
A small plastic box, some wires ,
Antenna - 20 meters hanging vertically or horizontally at
a high location (Warning : Lightning Hazard)
Ground - connect a wire to your metal water pipe.


Simple Crystal Radio Circuit
ANT1
Antenna - 20 meters of thin wire hanging vertically or horizontally
C1
100pf
IN60
D1
T1
J1
C2
360pf
R1
100K
2.5mm Mono Headphone Jack
Aerial Coil & Tuning Coil on Ferrite Powder Rod
Connect ground to Metal Water Pipe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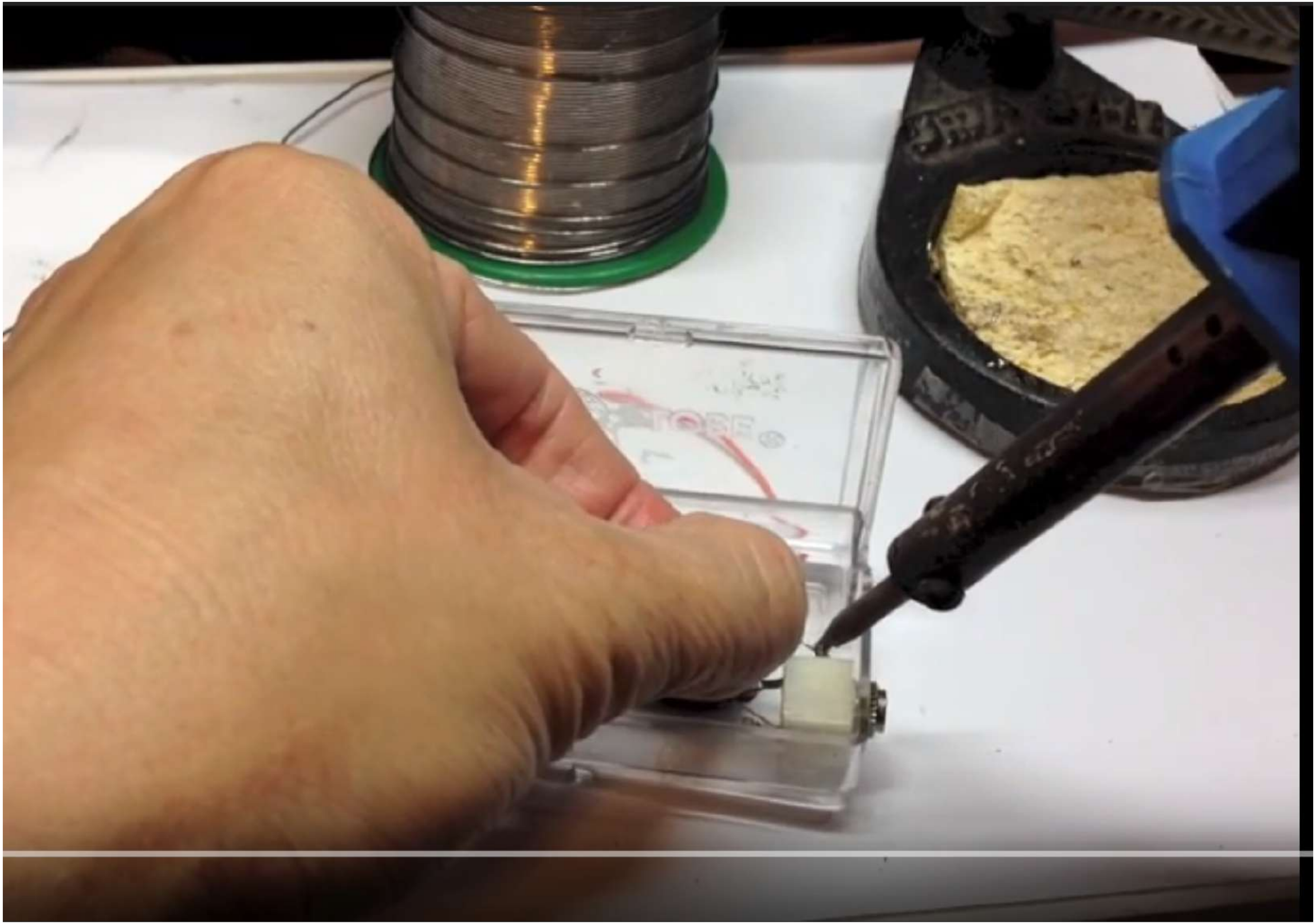

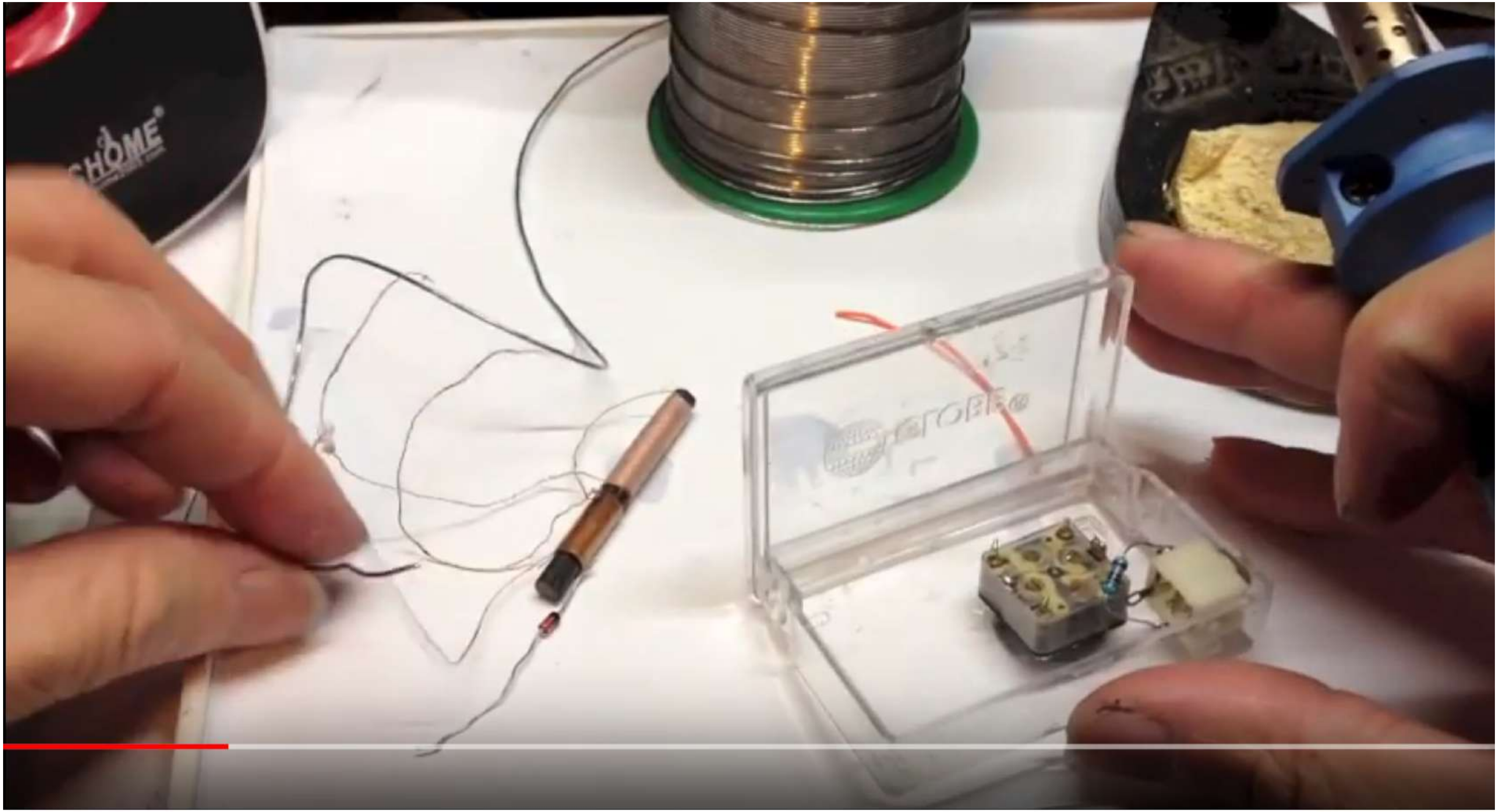

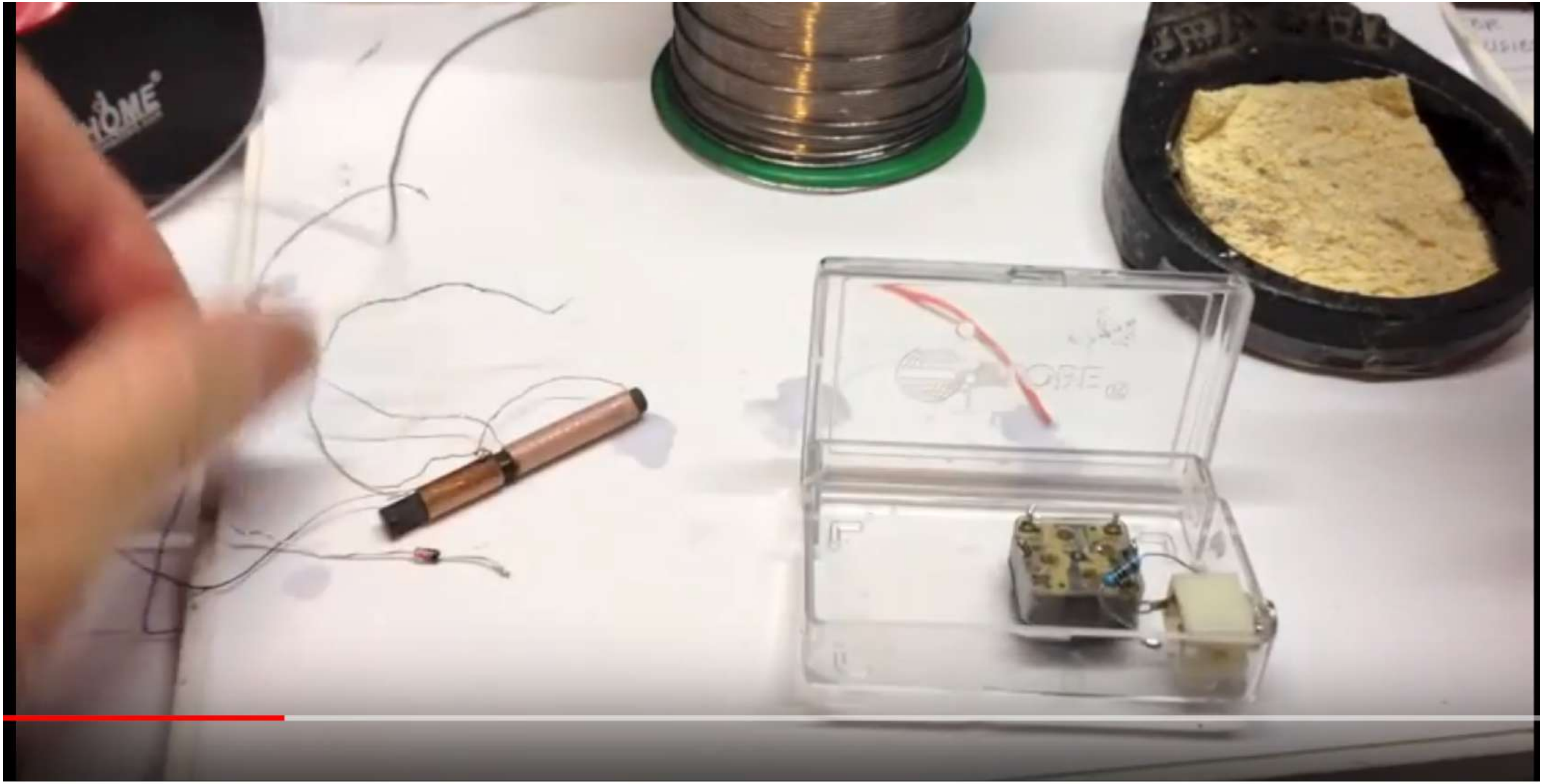
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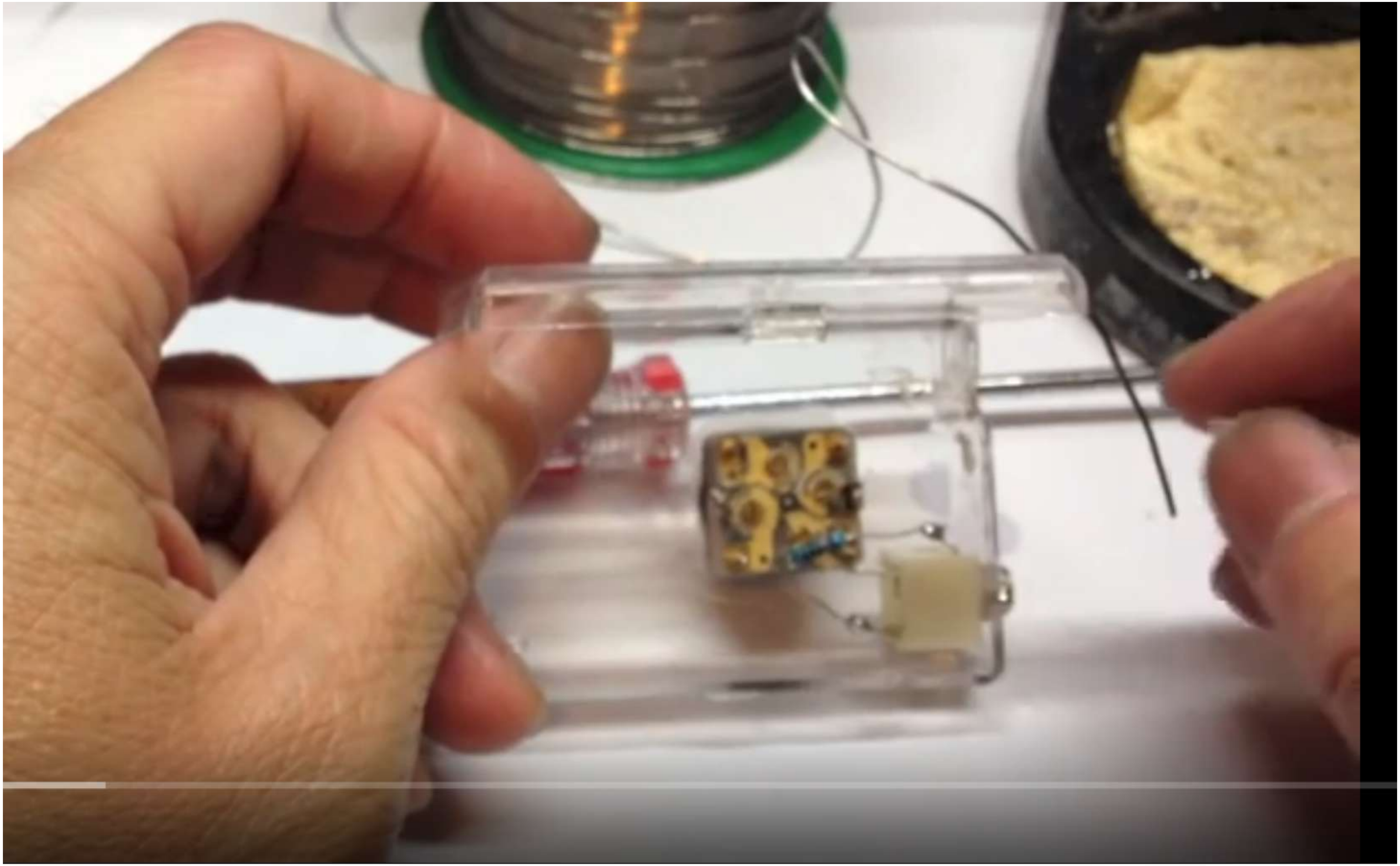

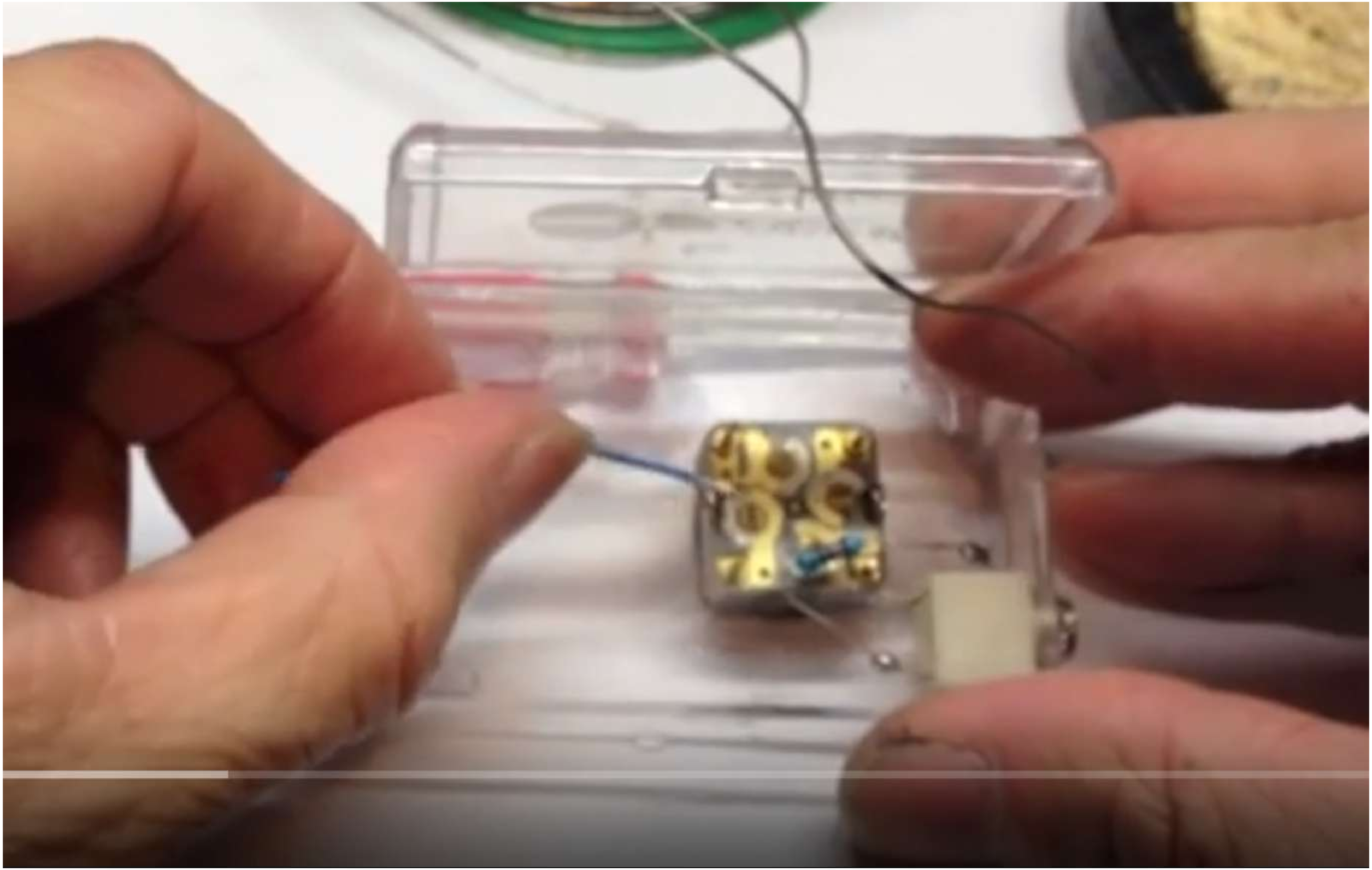

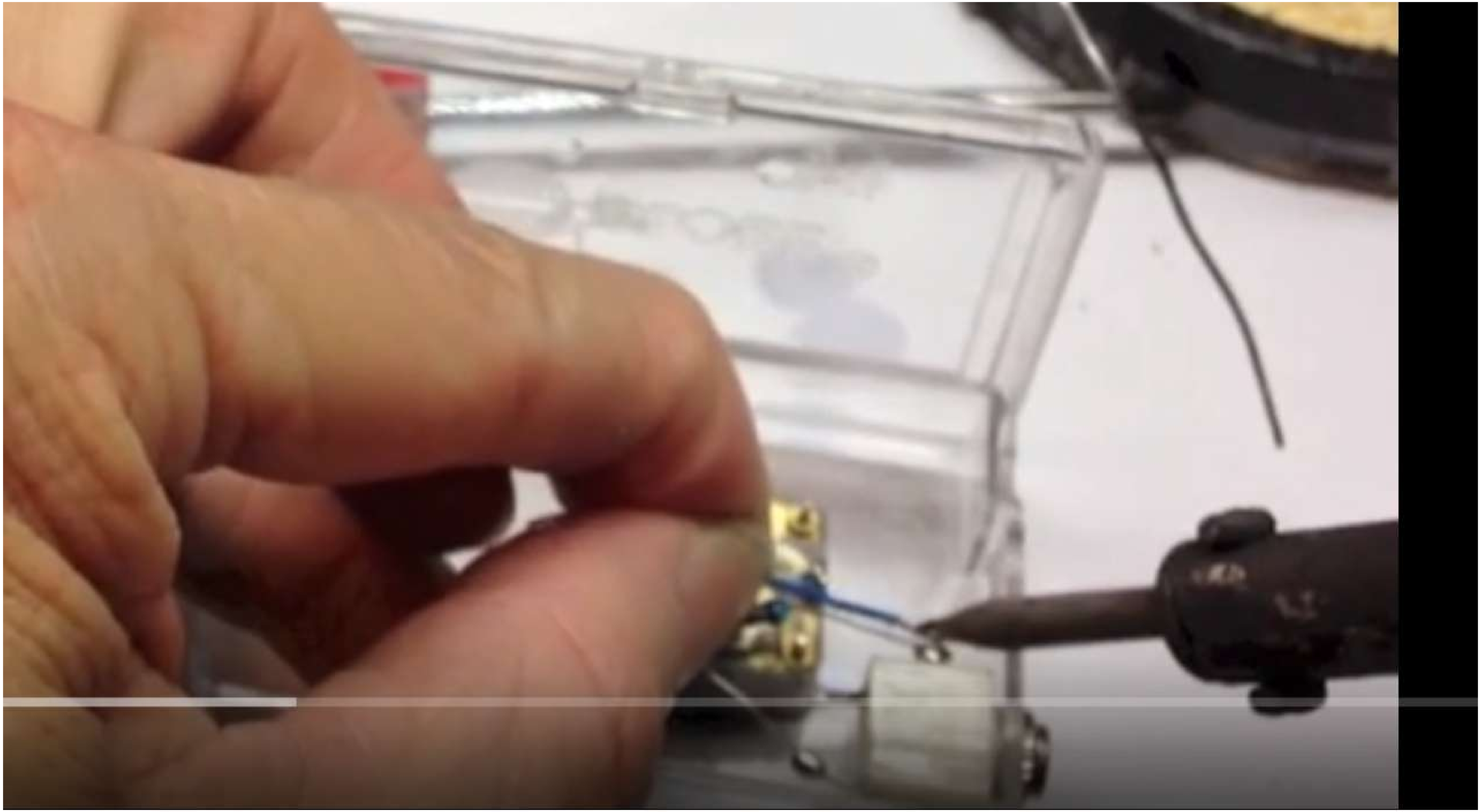

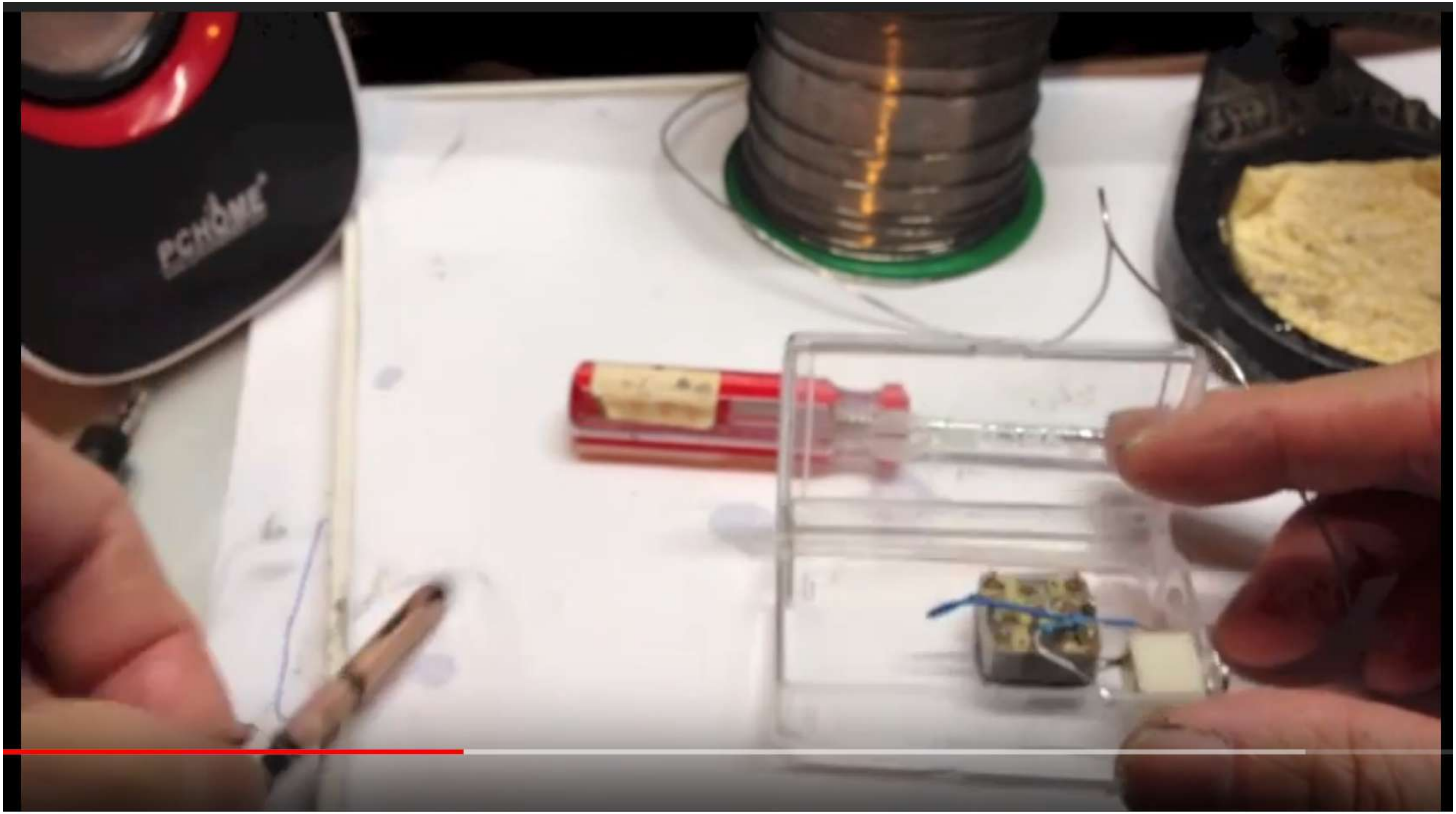
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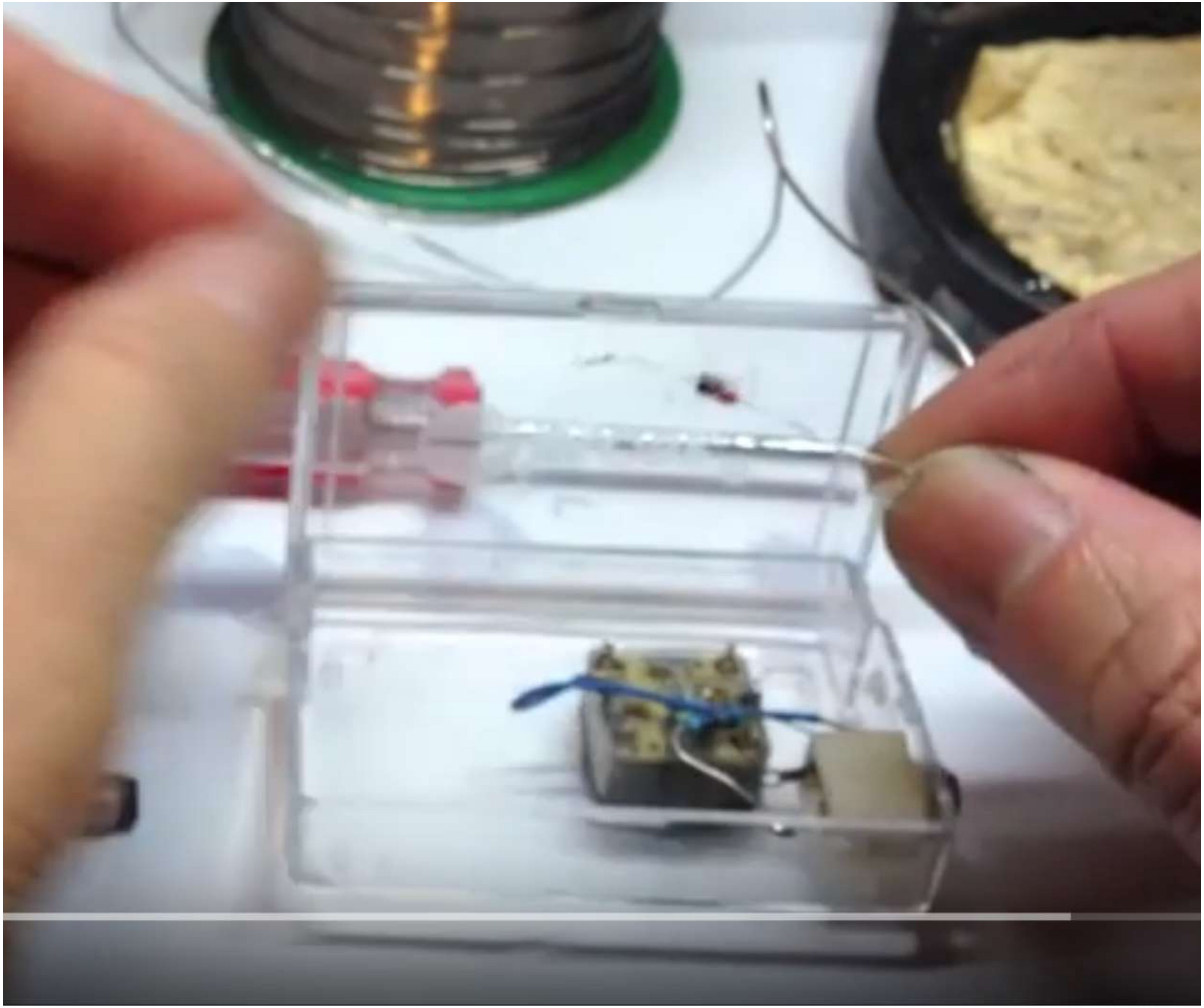

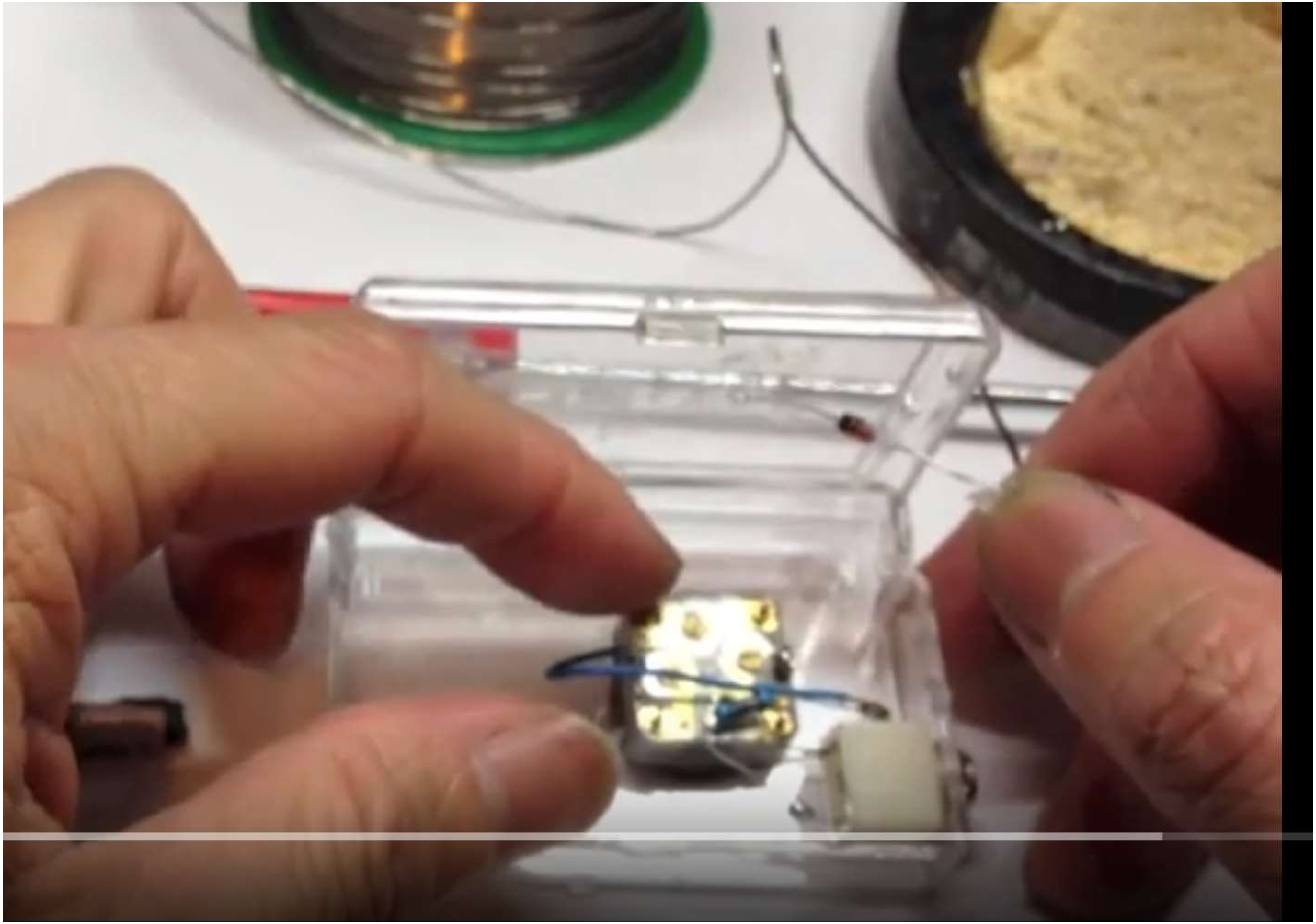

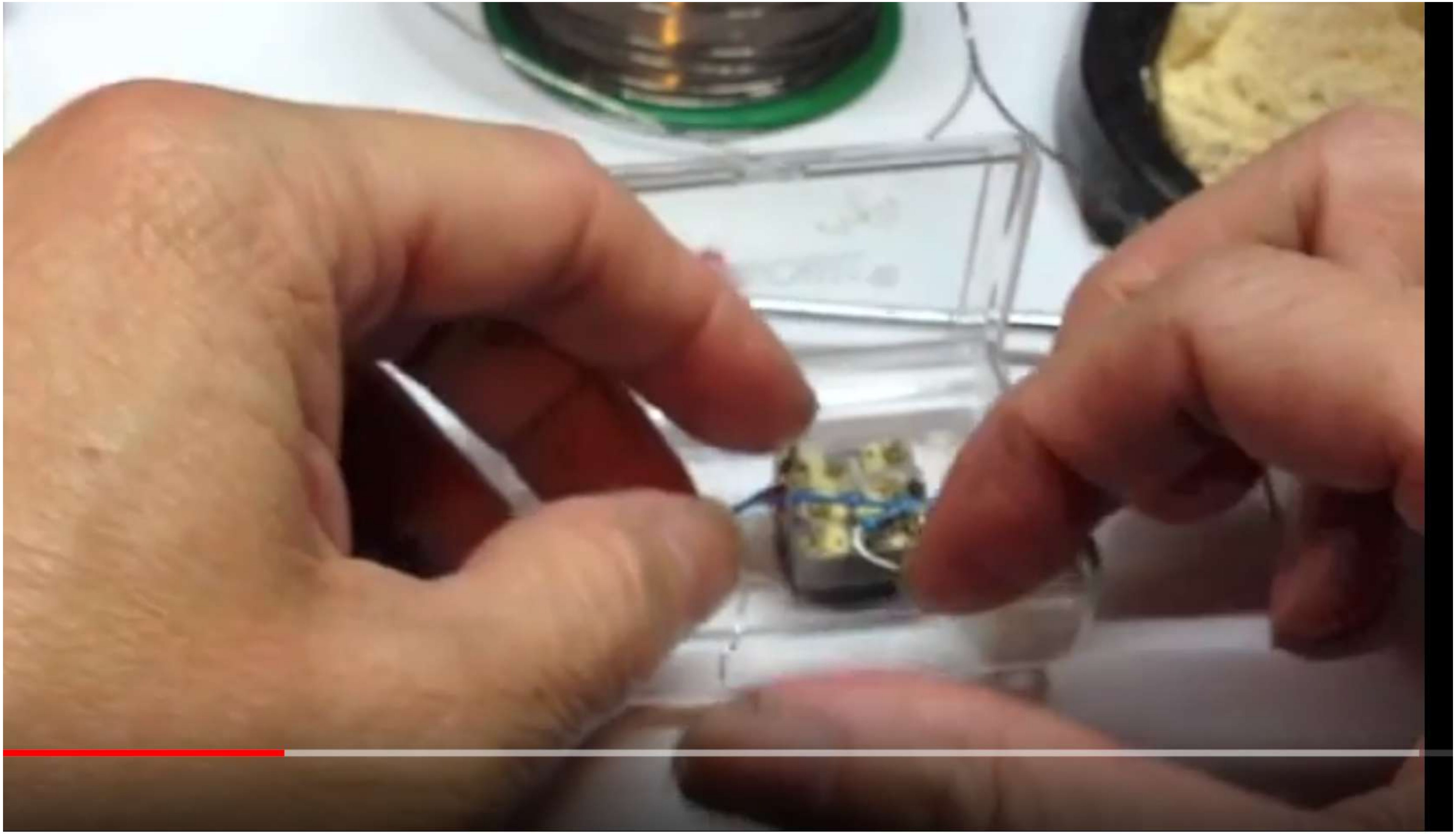

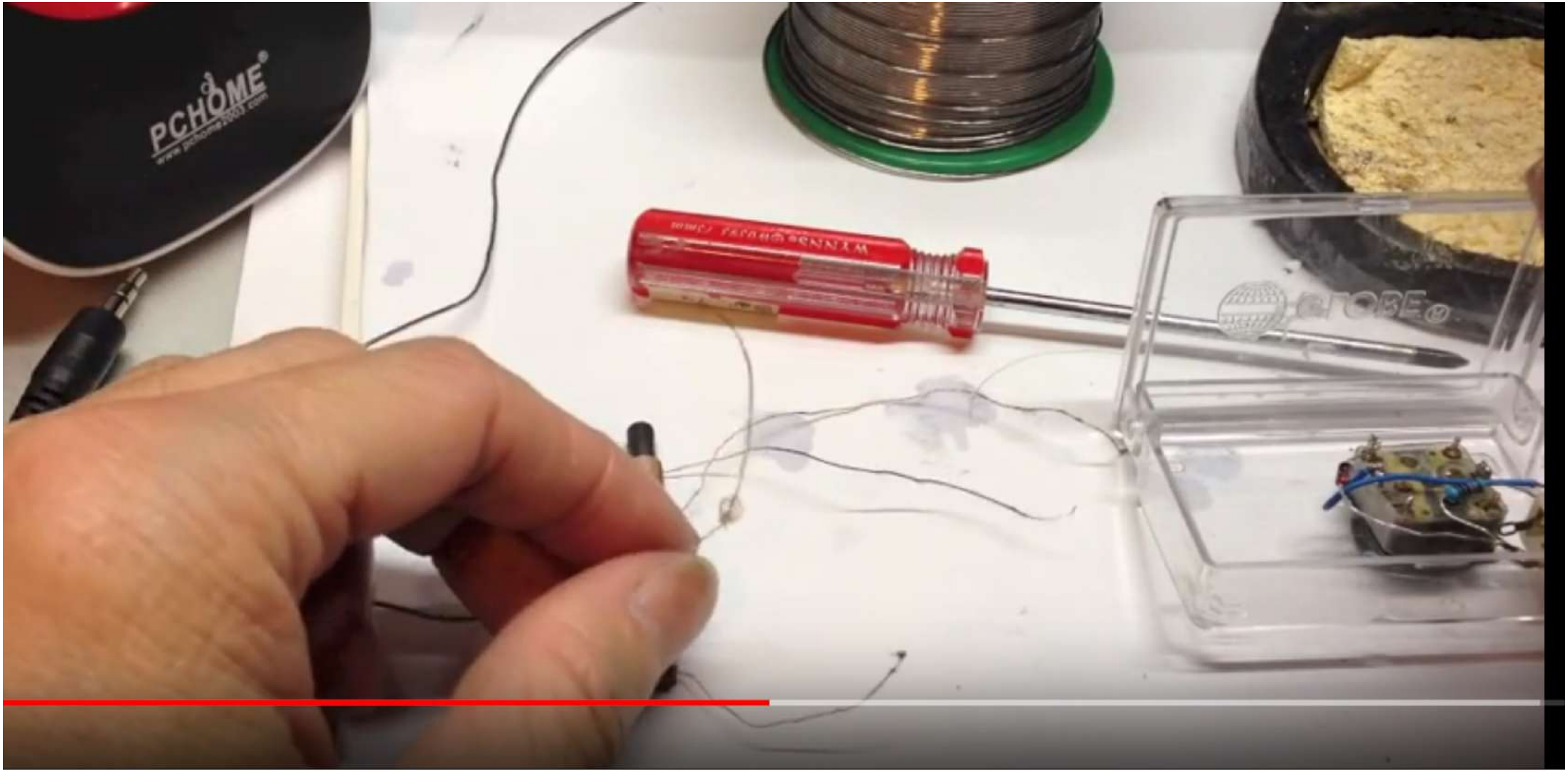
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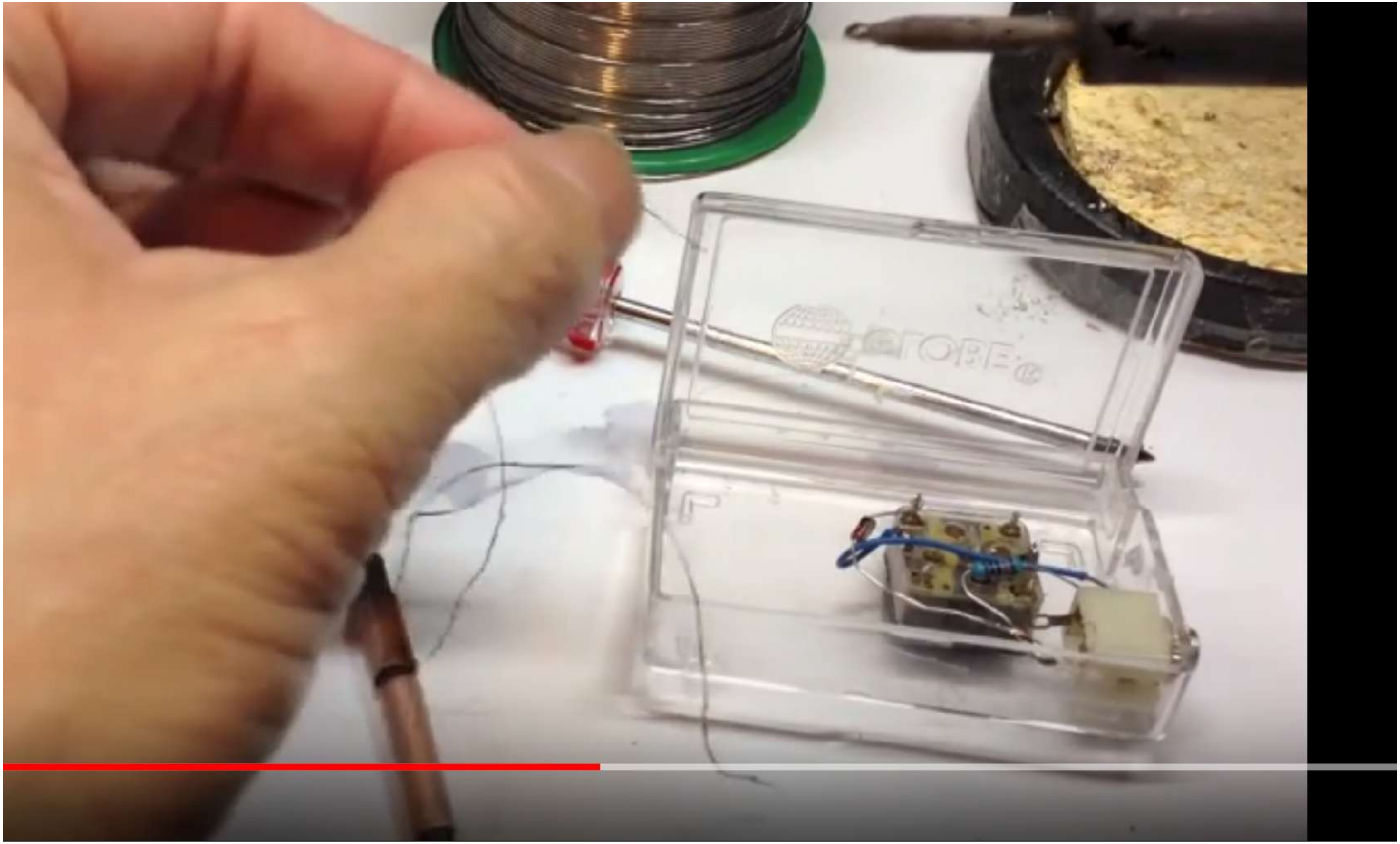
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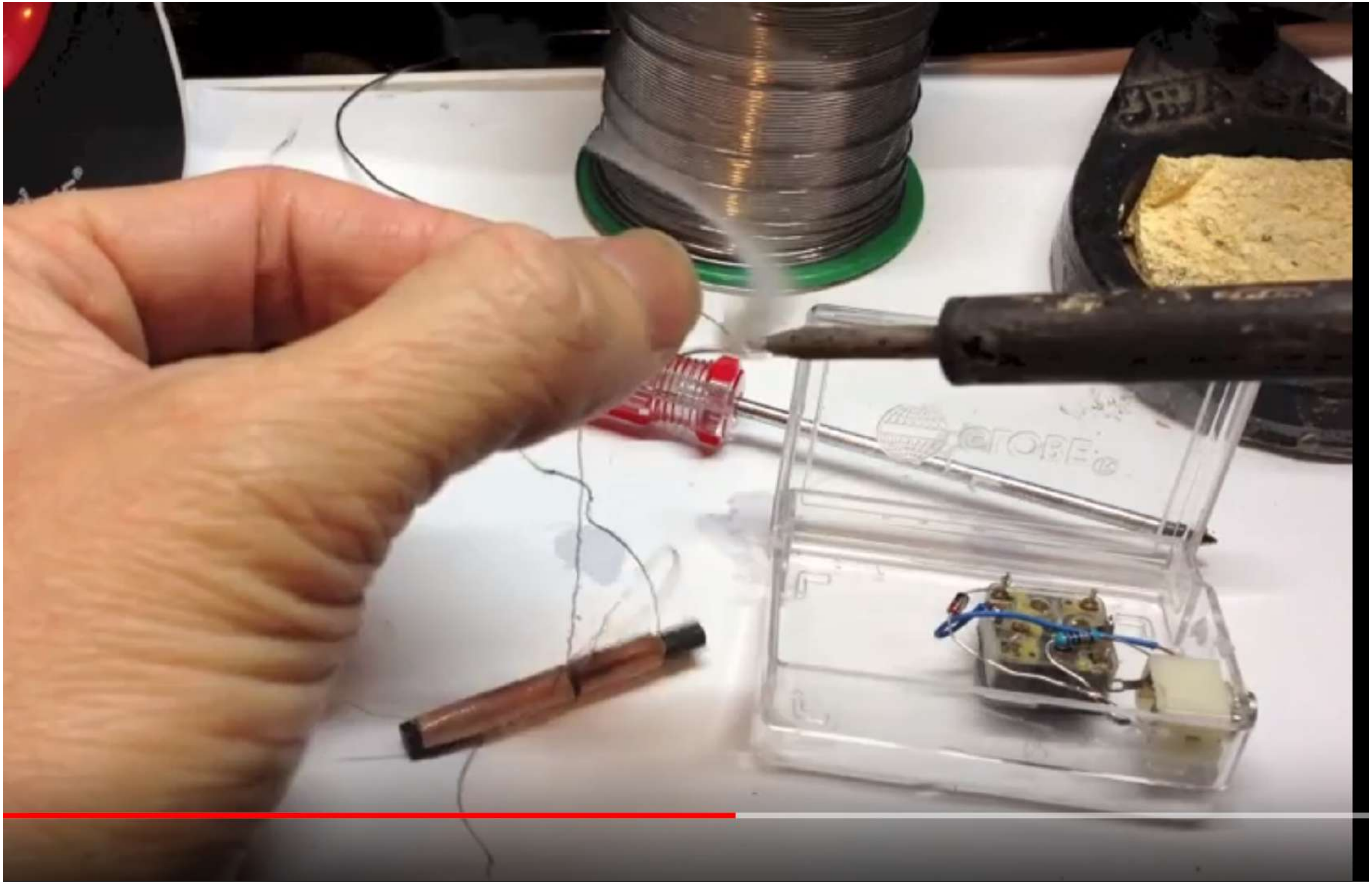

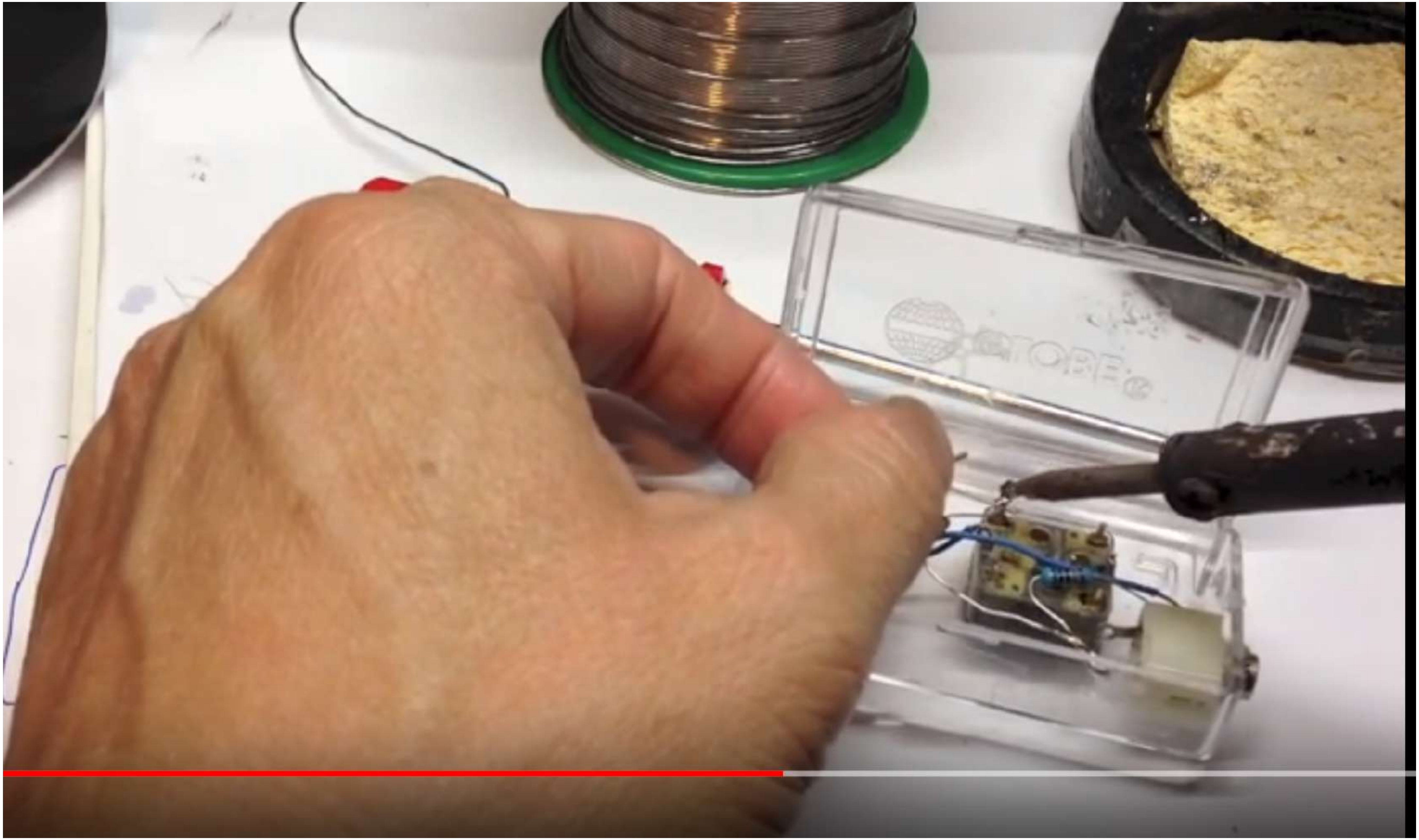

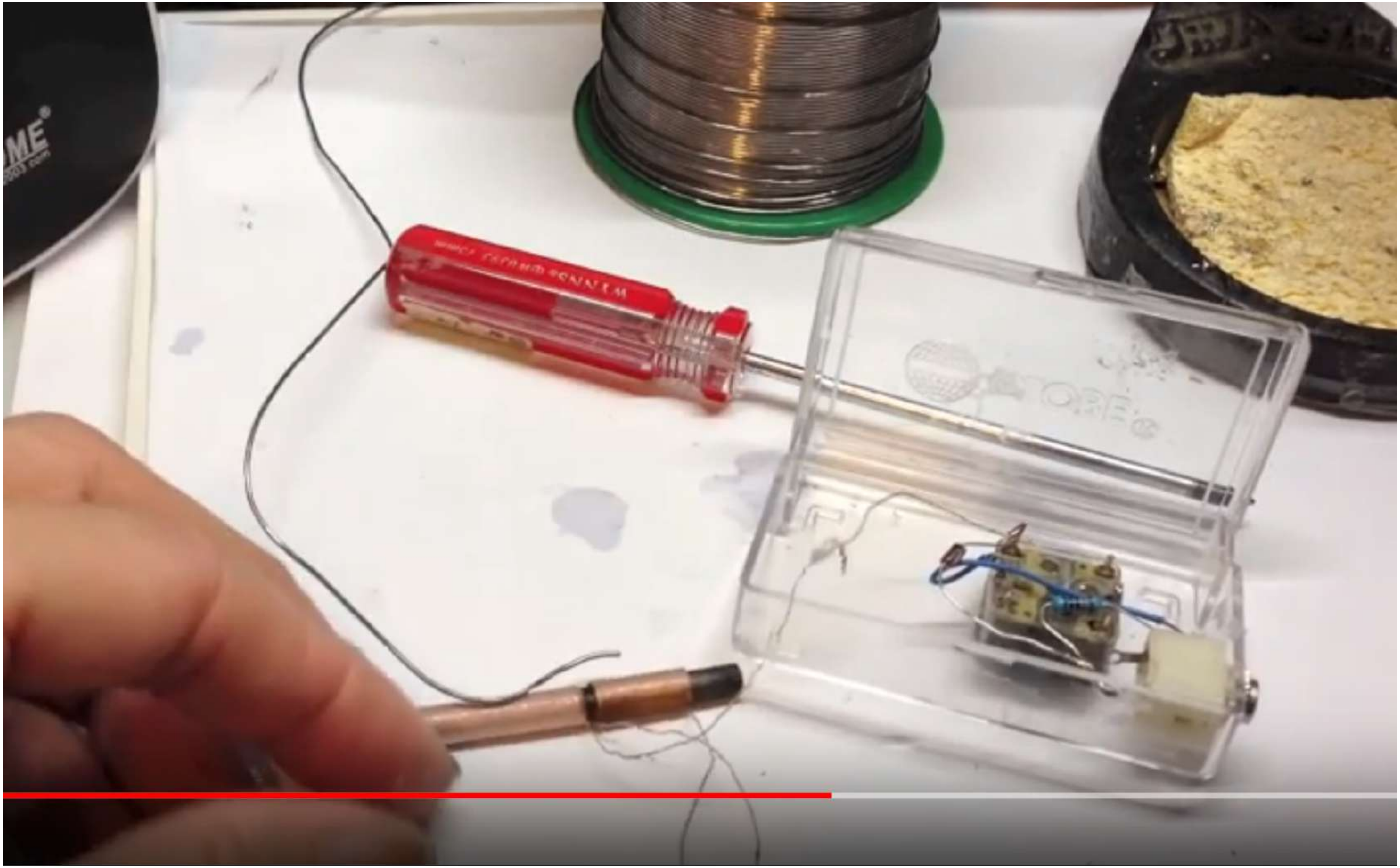

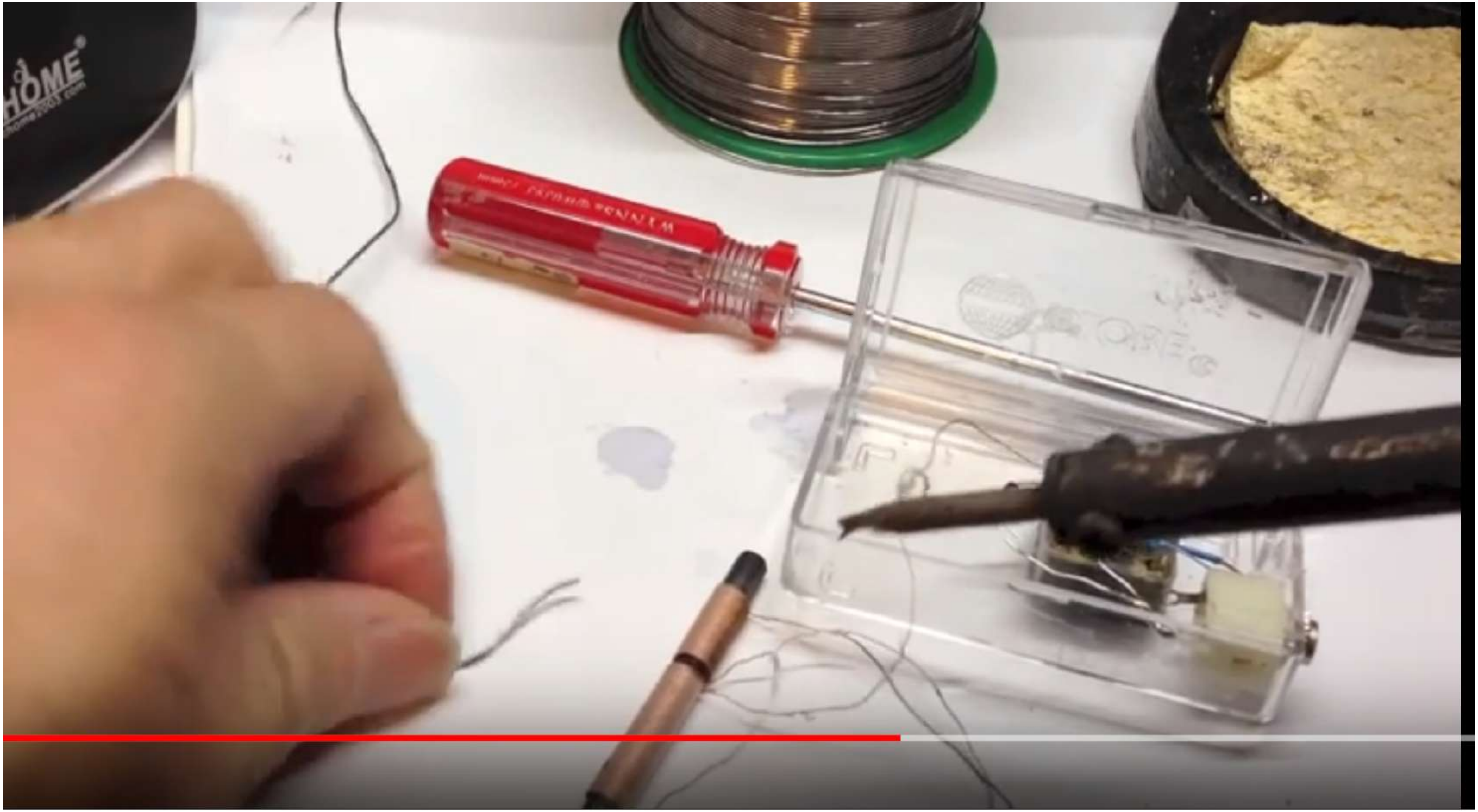
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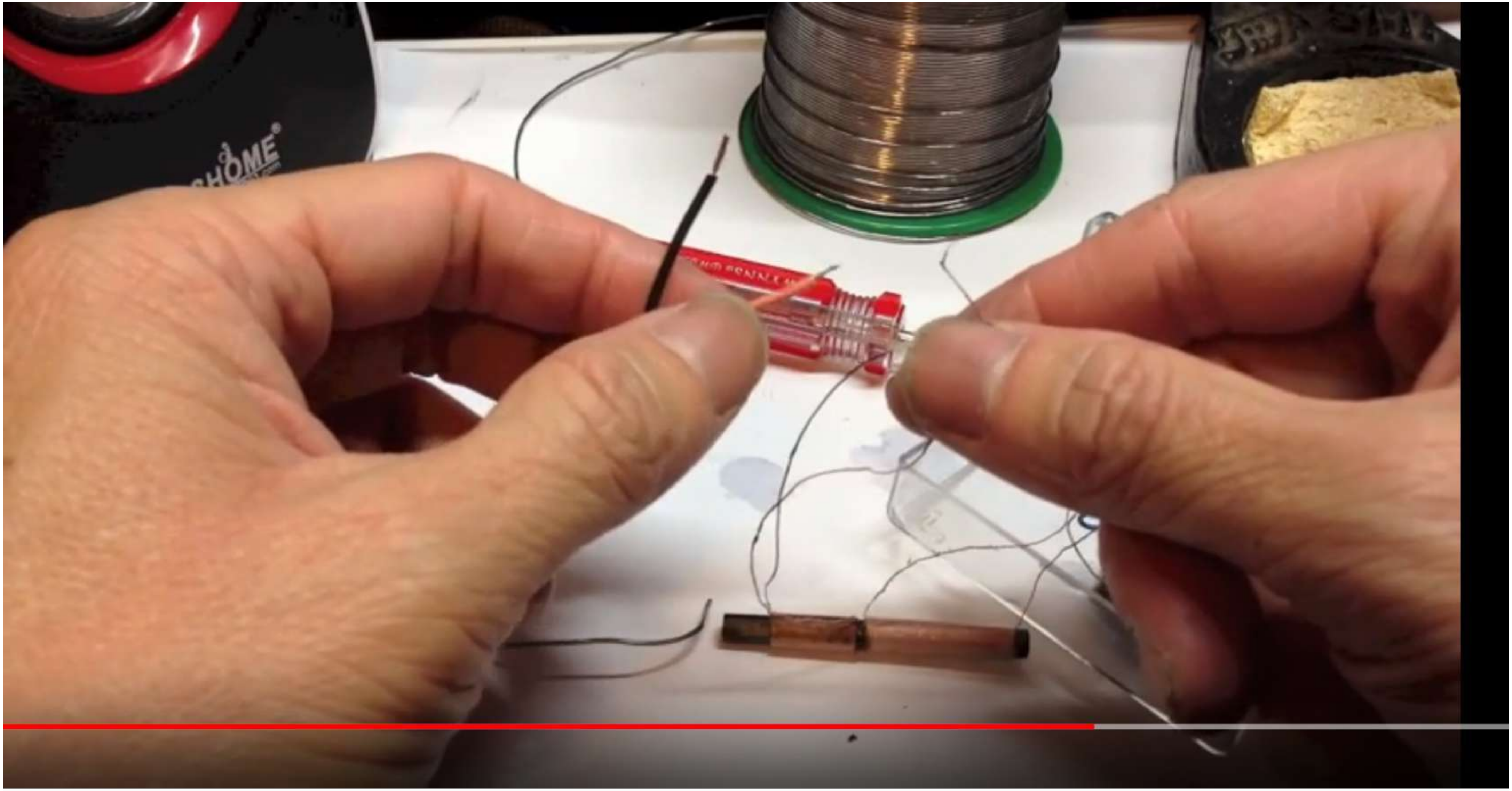
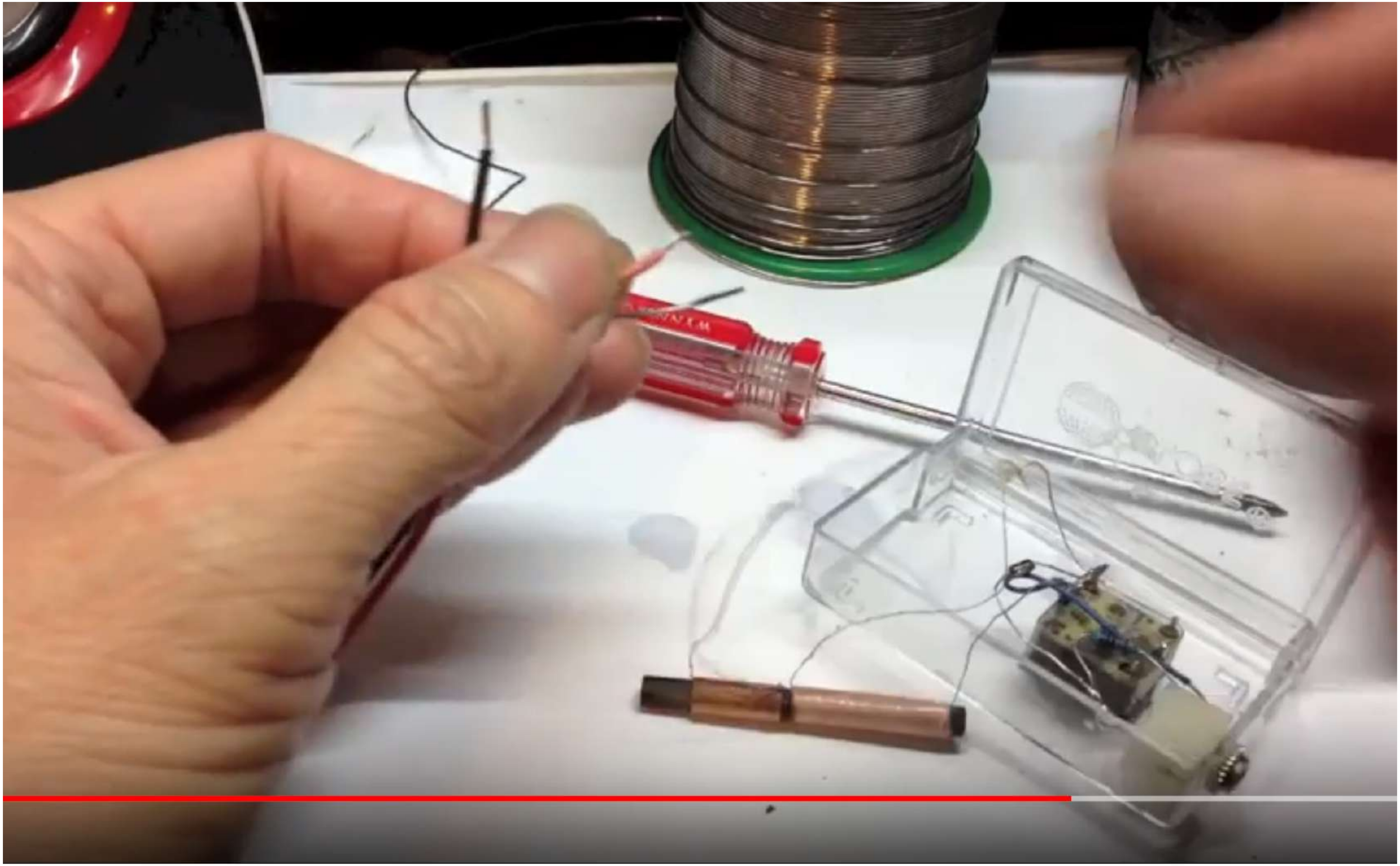
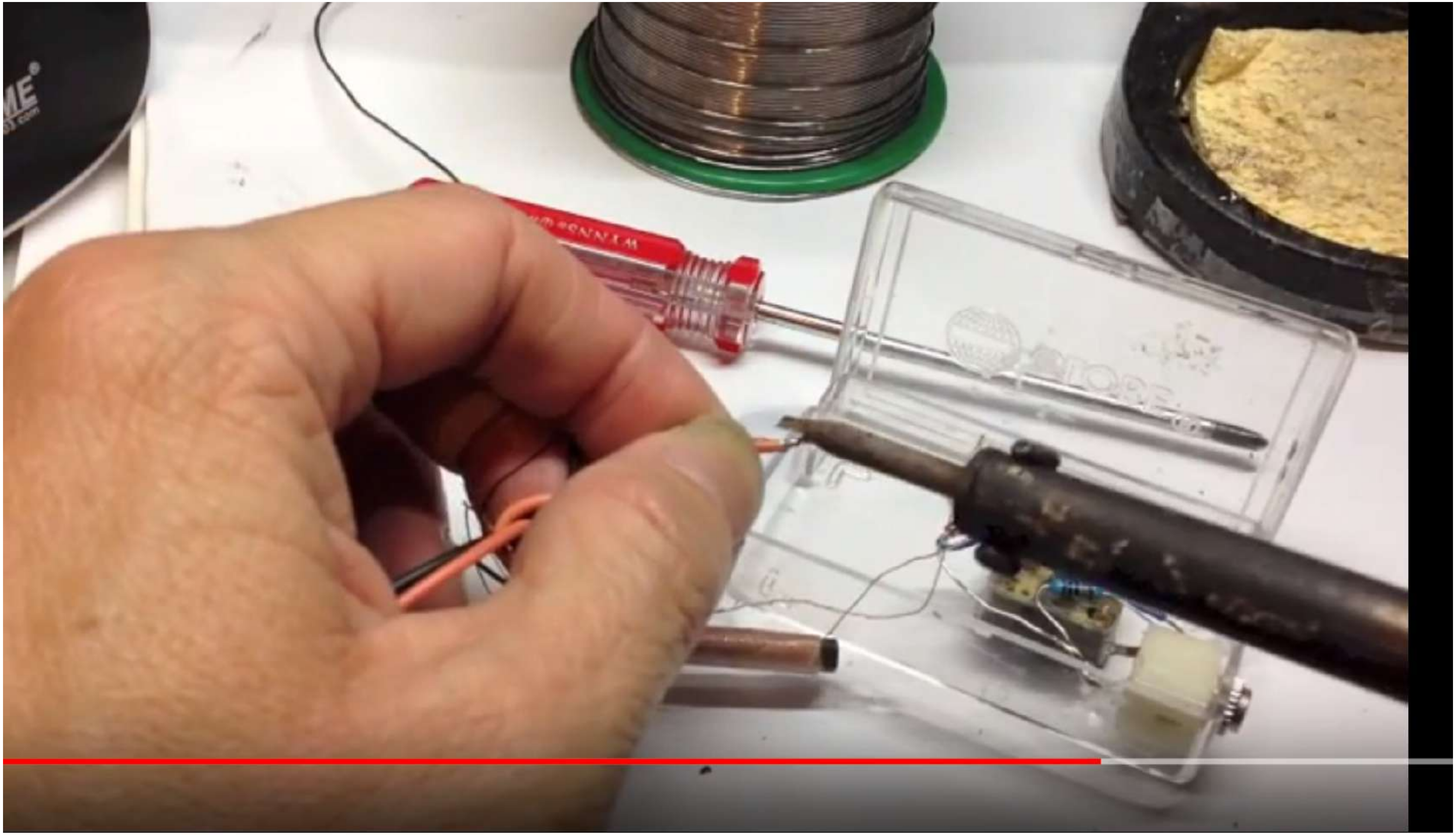
HOME





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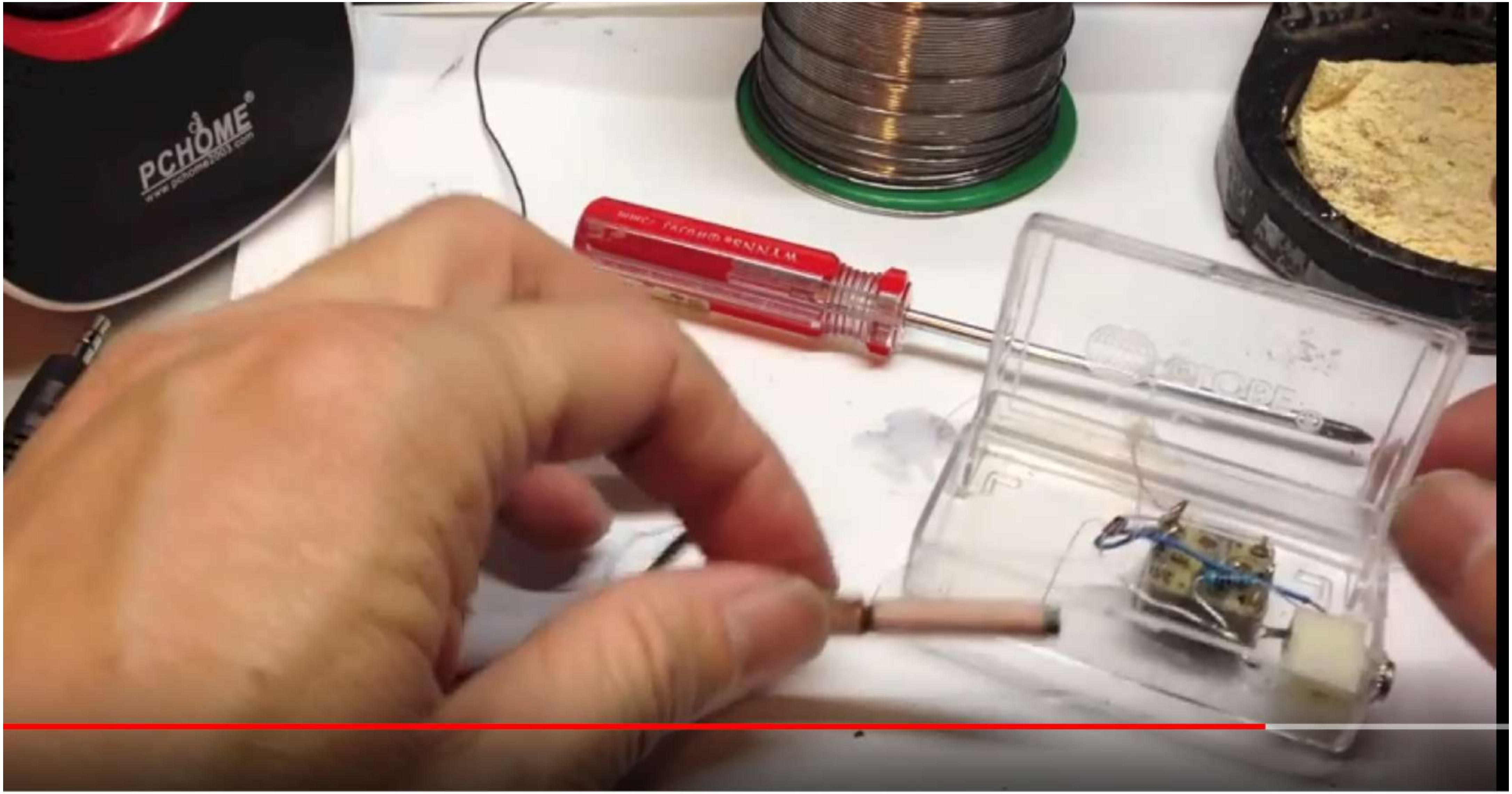
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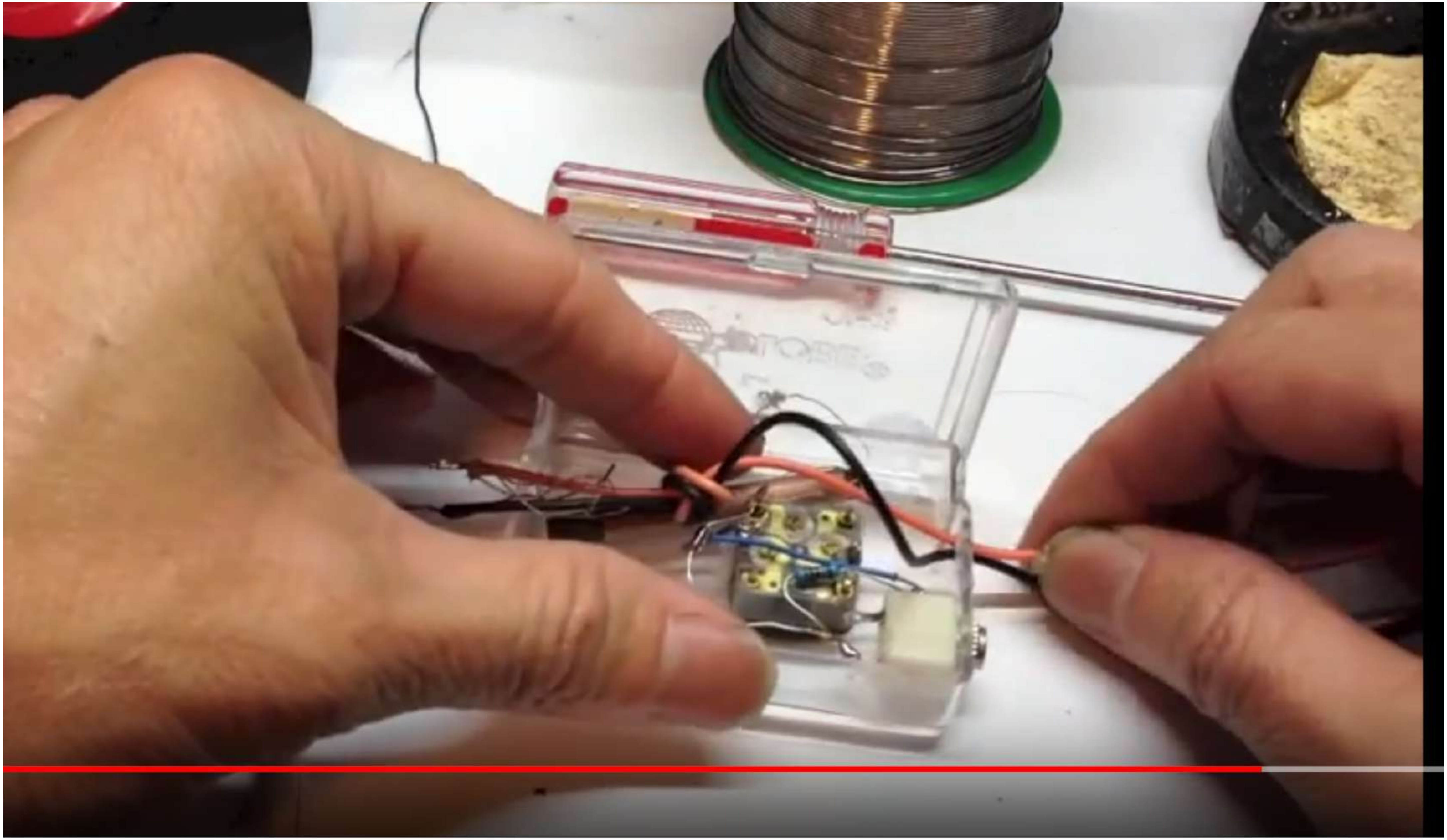

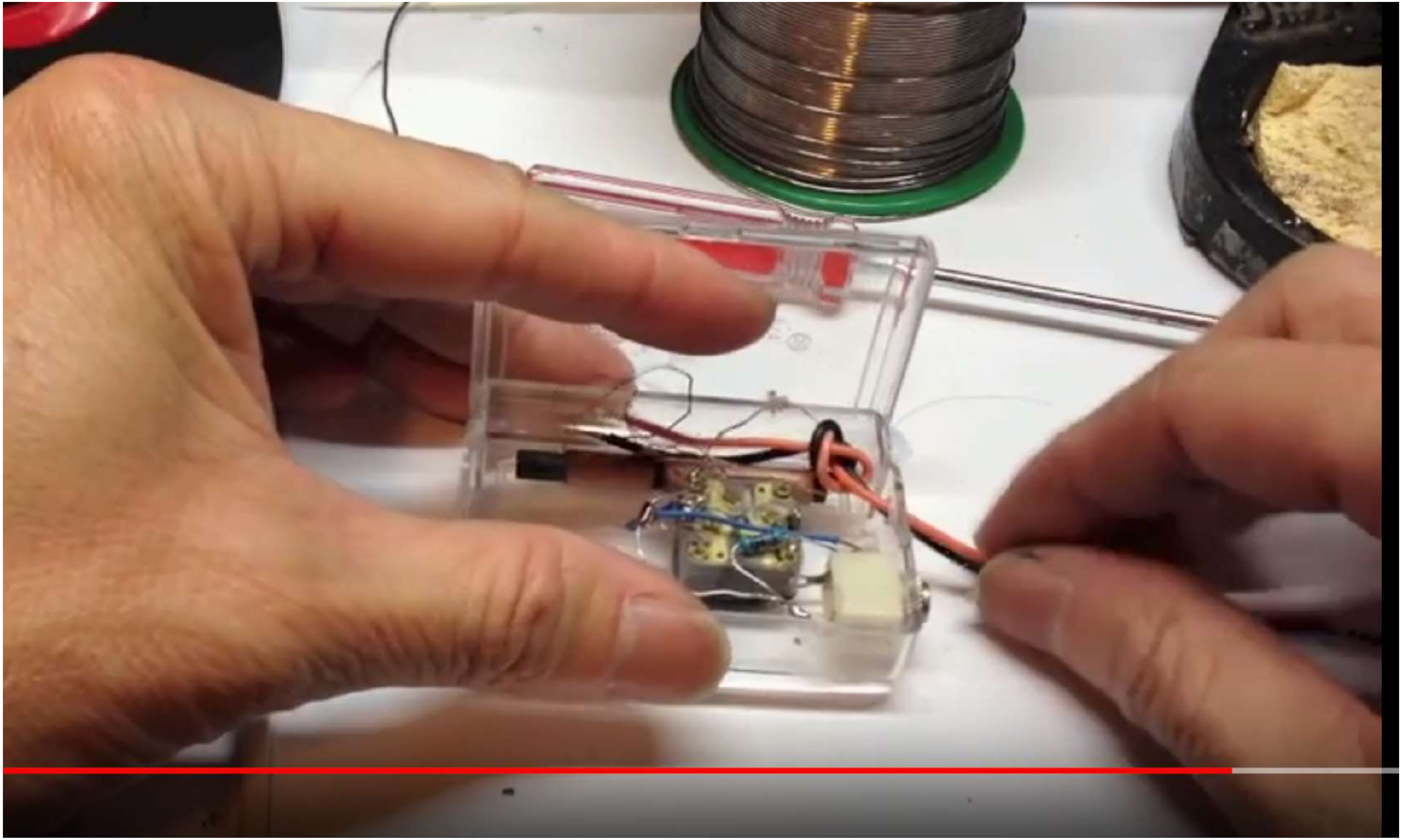

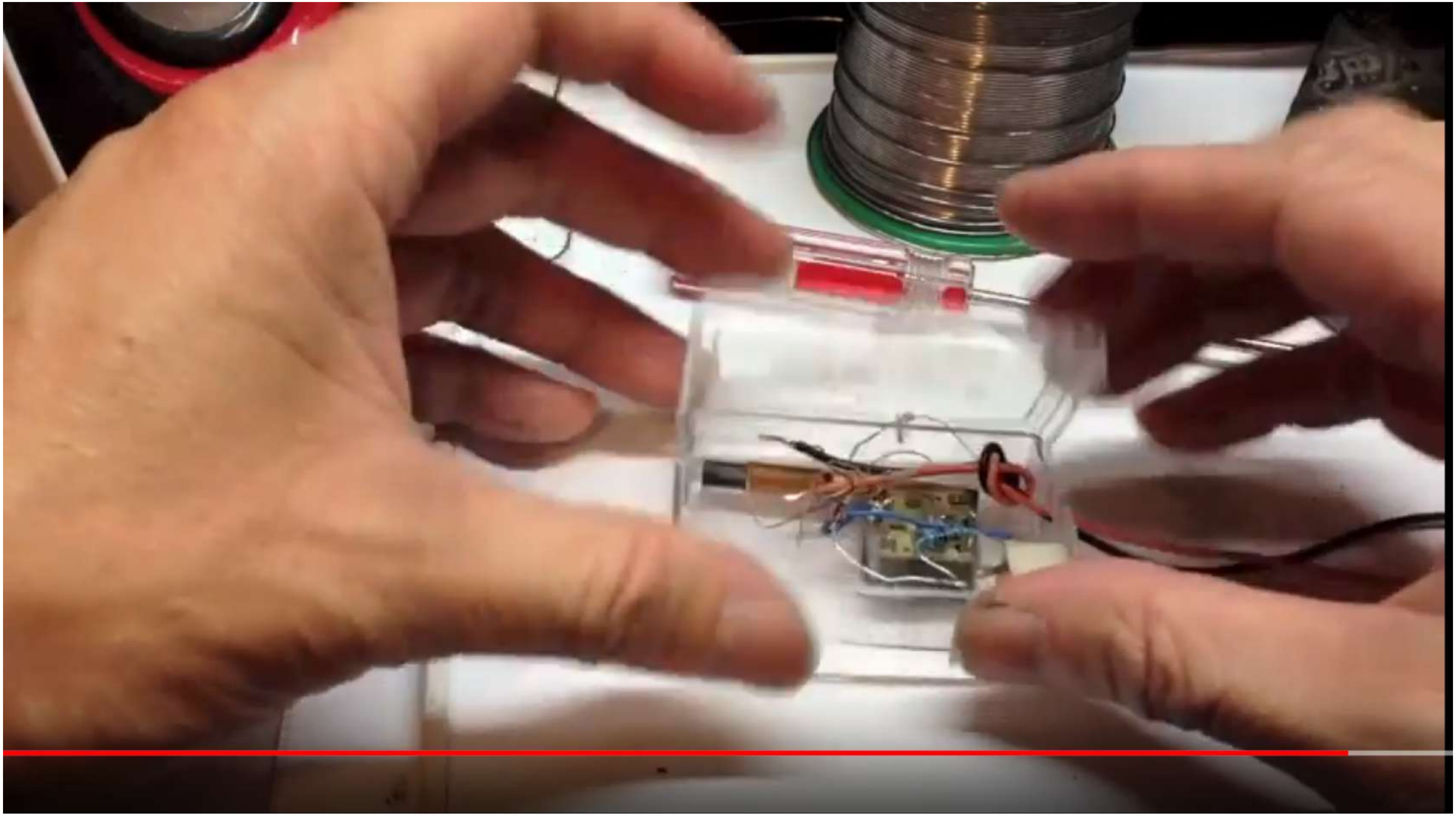

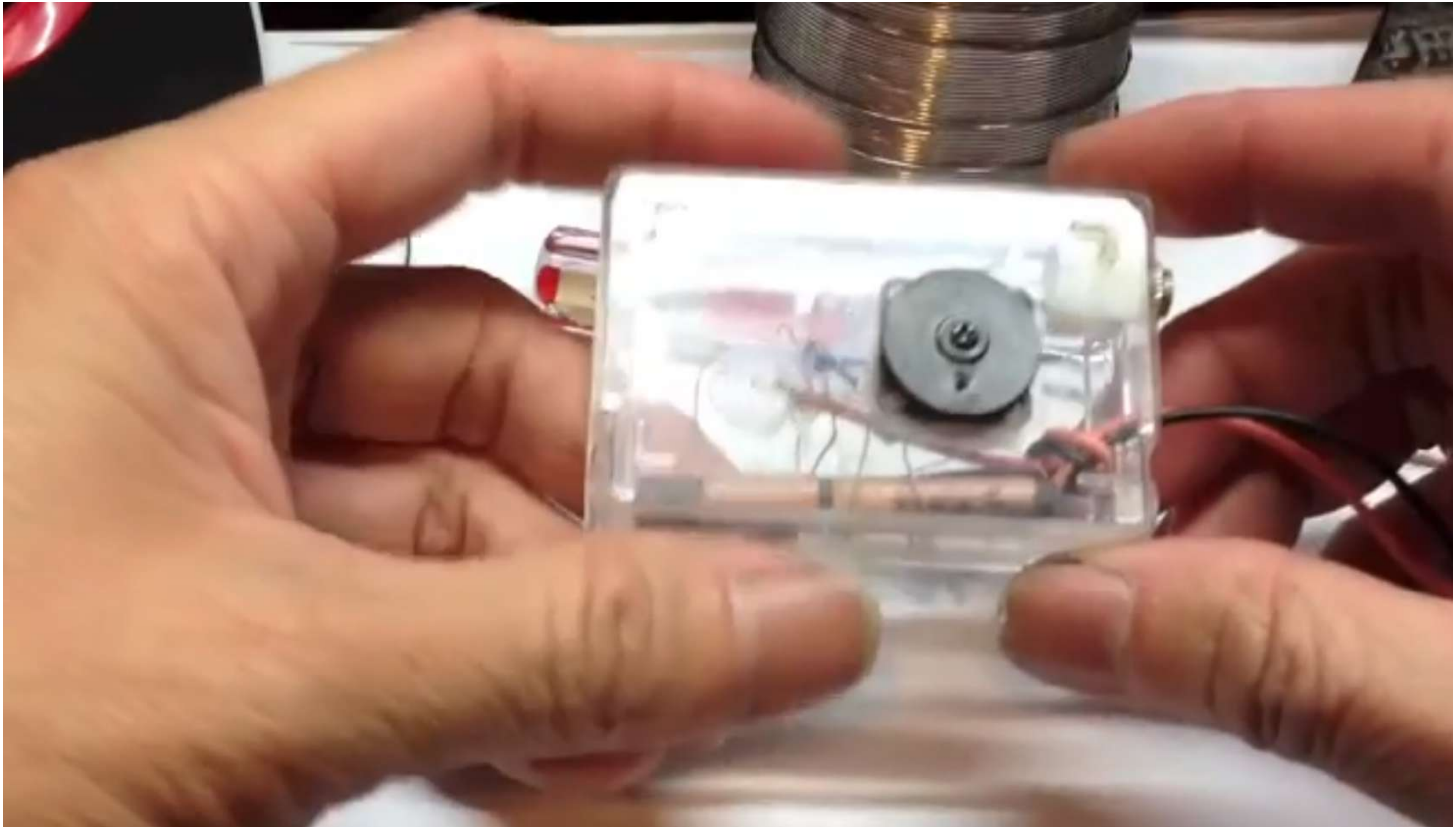

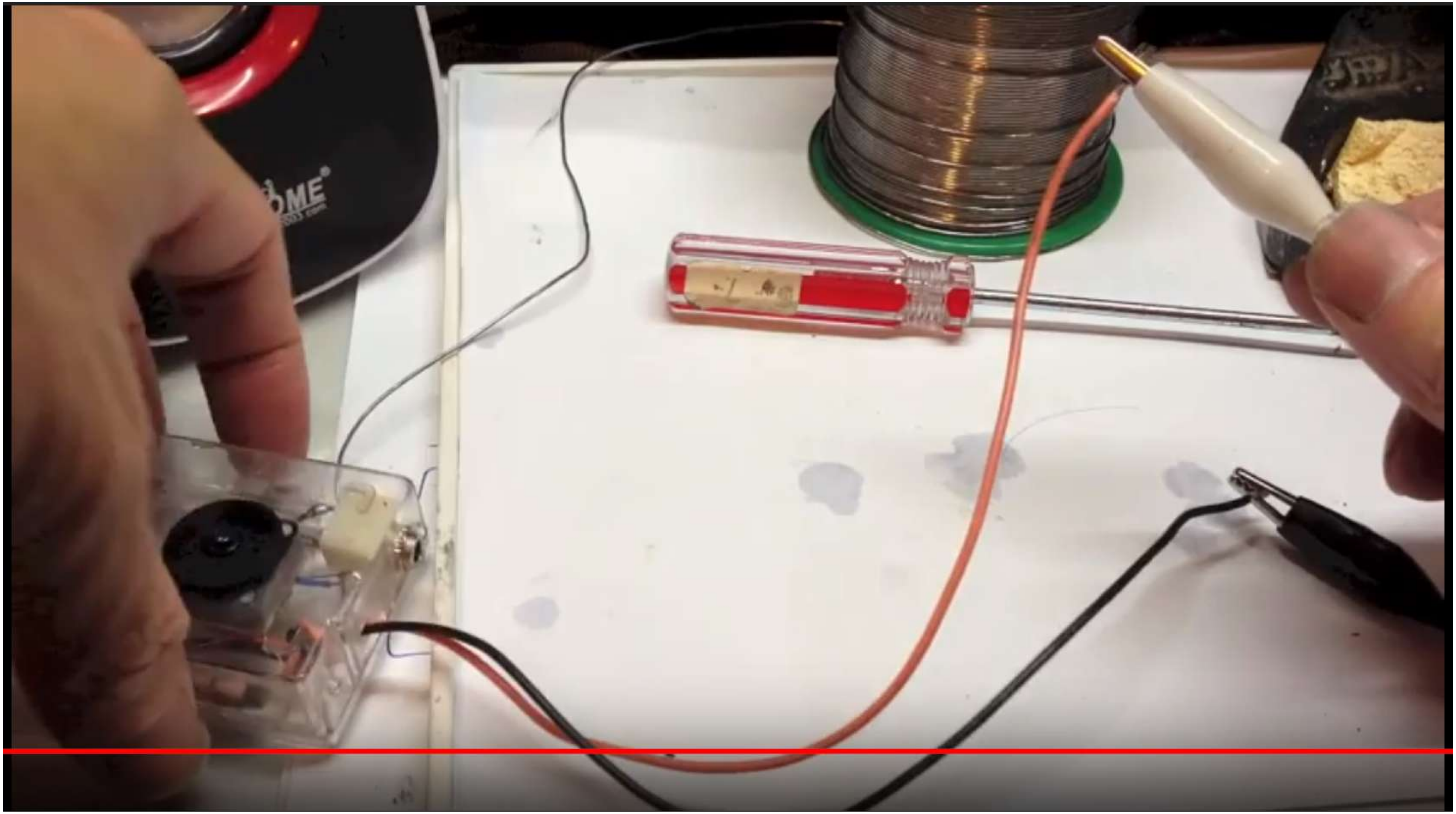

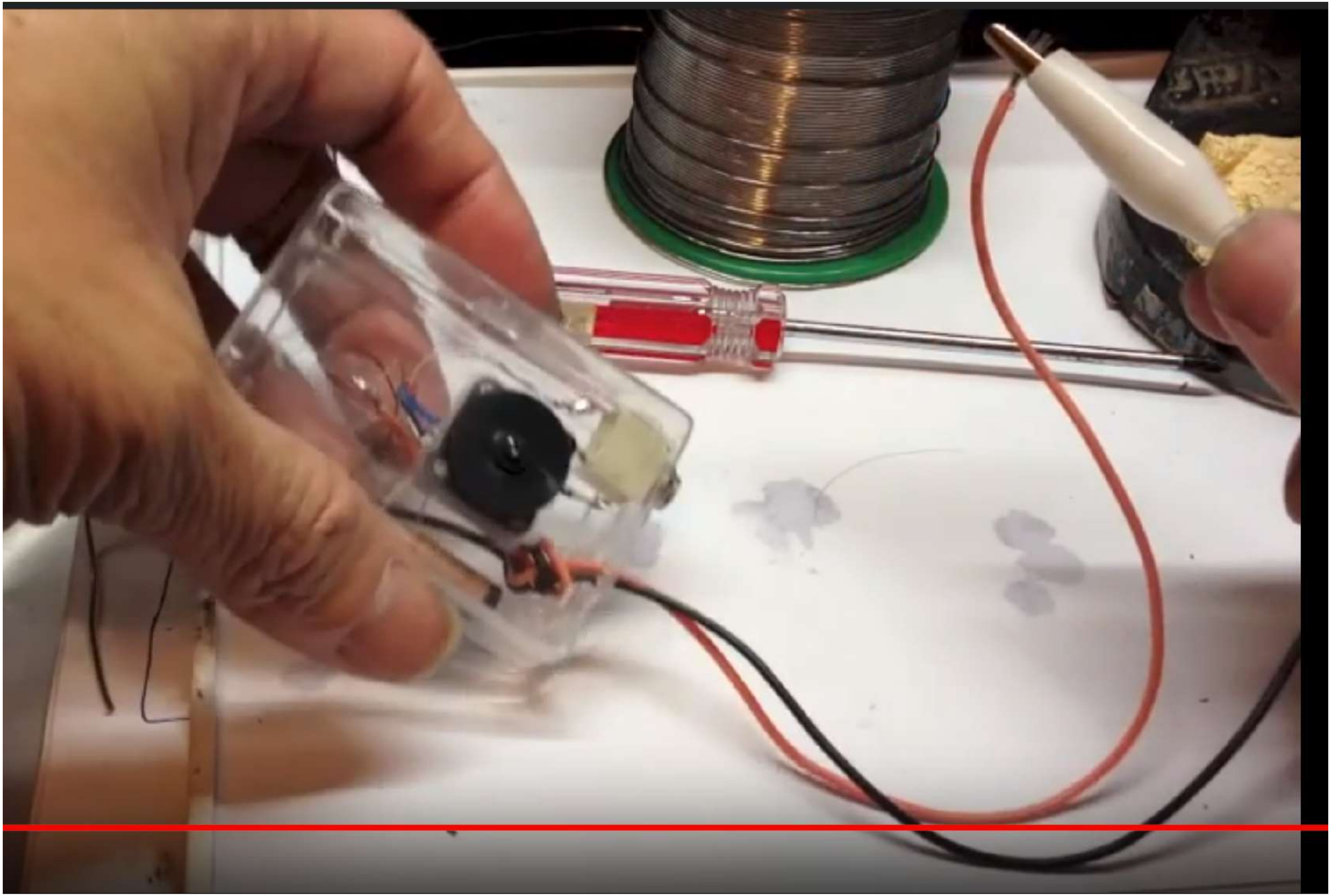

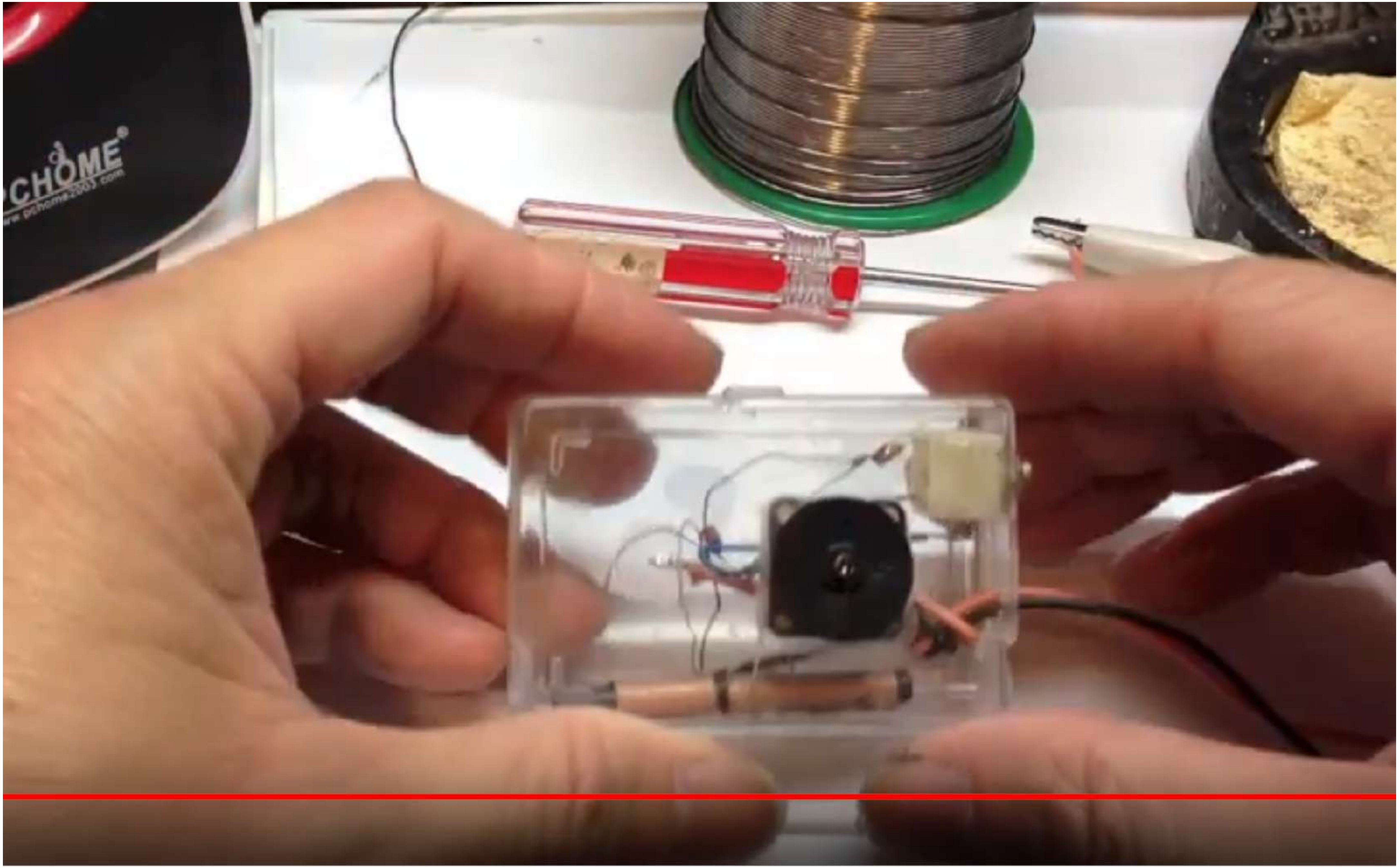
PCHOME
www.pchome2003.com


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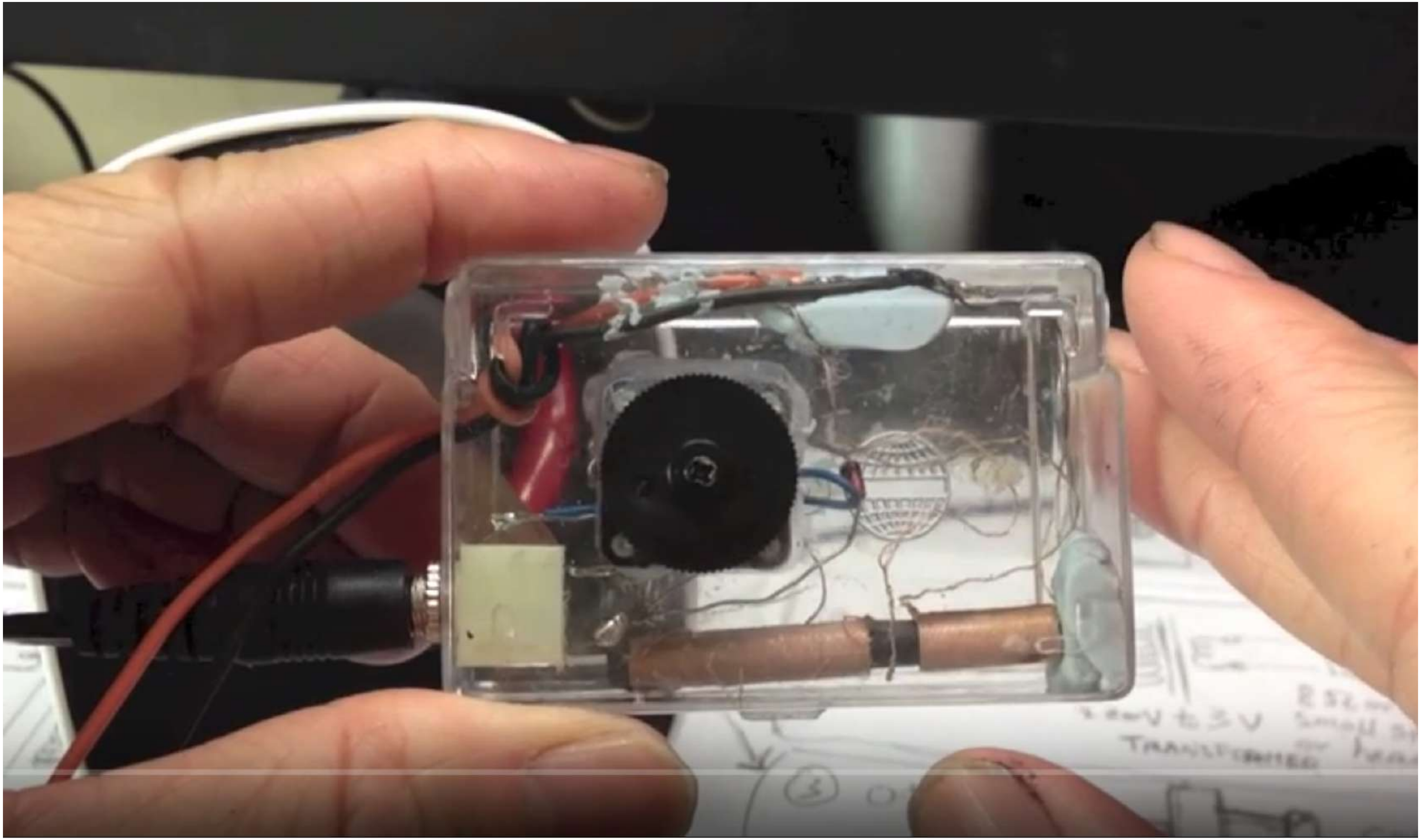
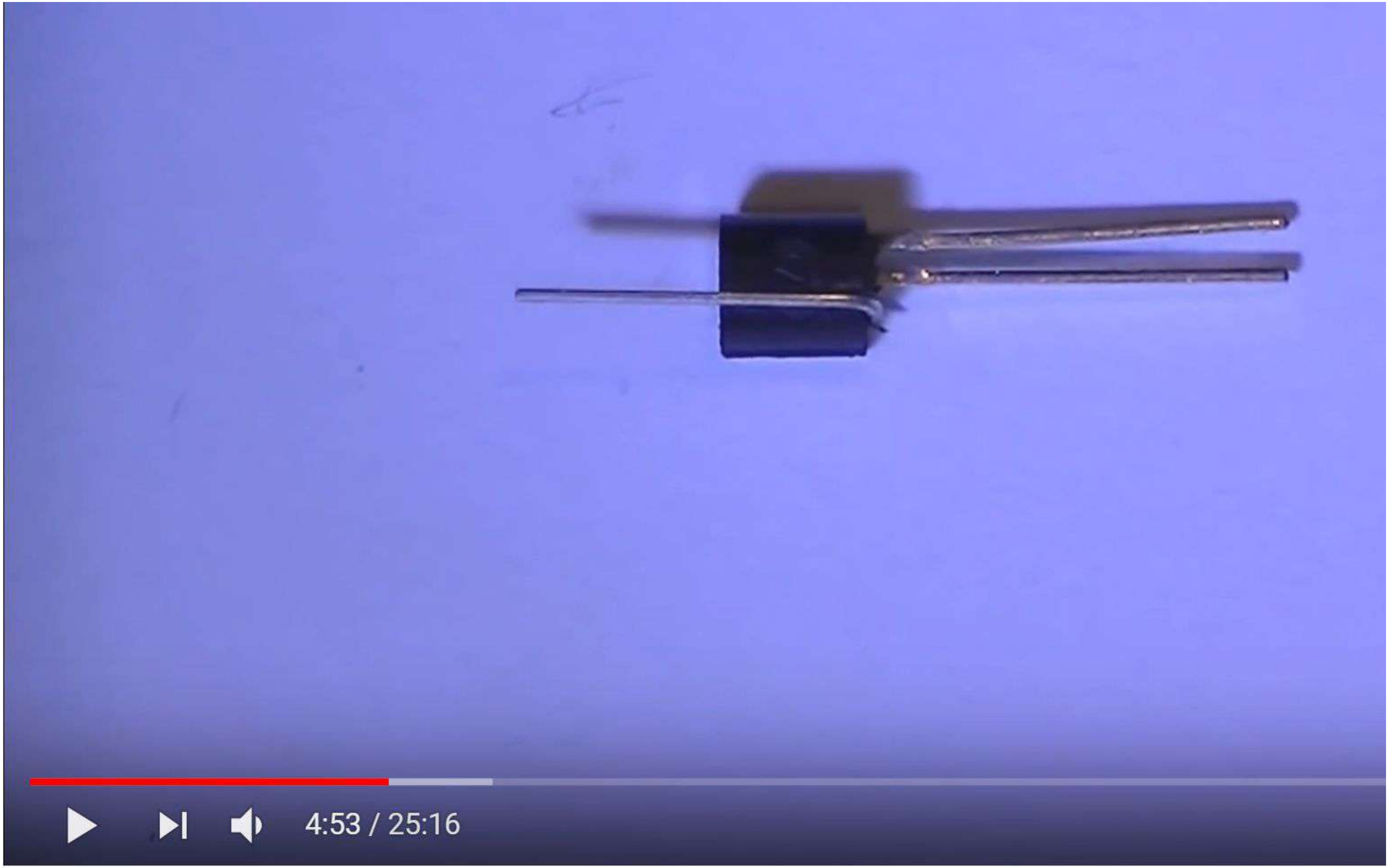




Lets build a RF Pen detector .A good tool for testing small FM transmitters.


Alloy
60/40
Sn/Pb
Weight
100gms
Diameter
0.7mm
Rapid
You can buy FM transmitters from :
www.bug-transmitter.com
5:24 / 25:16

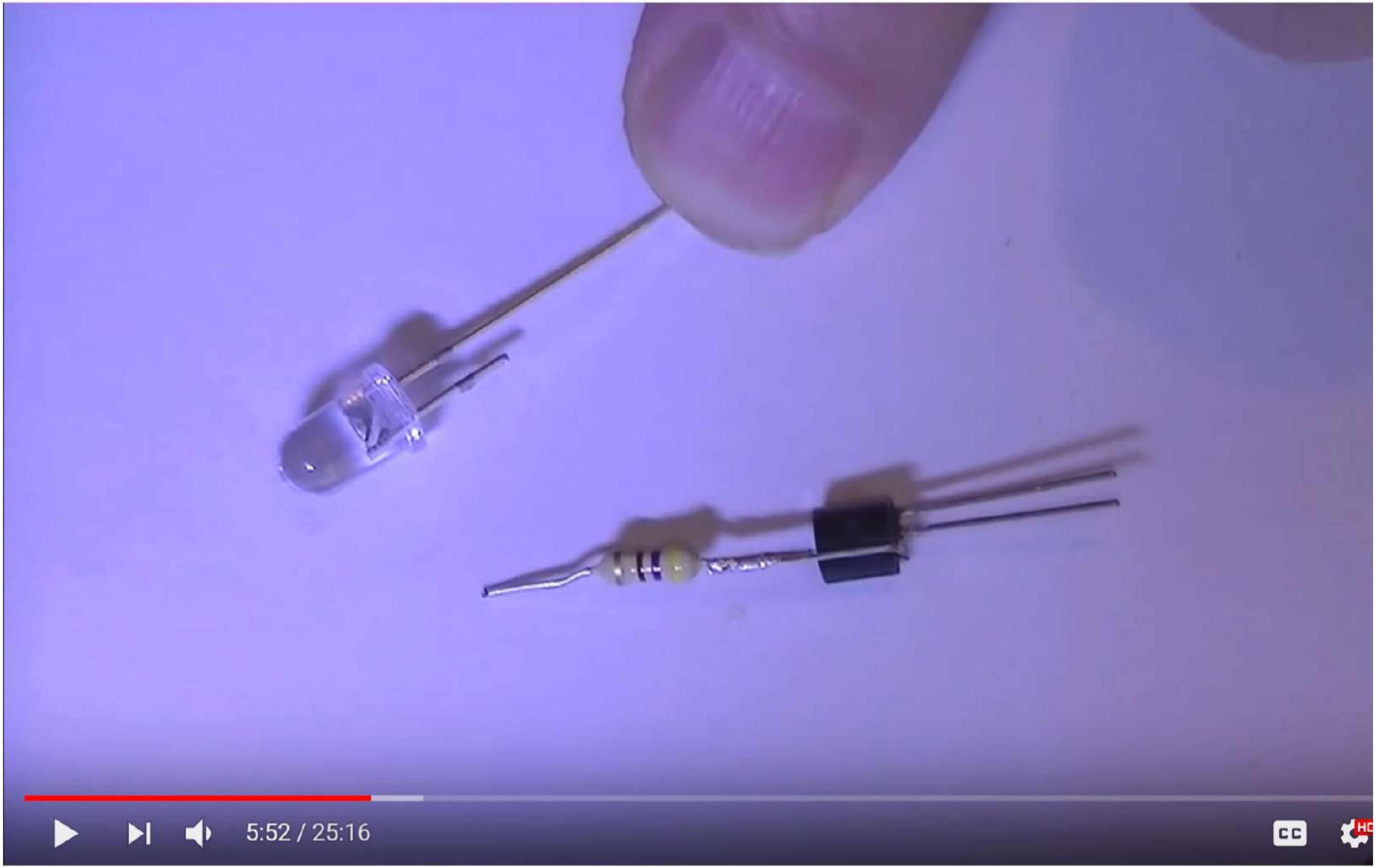
Lets build a RF Pen detector .A good tool for testing small FM transmitters.

48.706 views

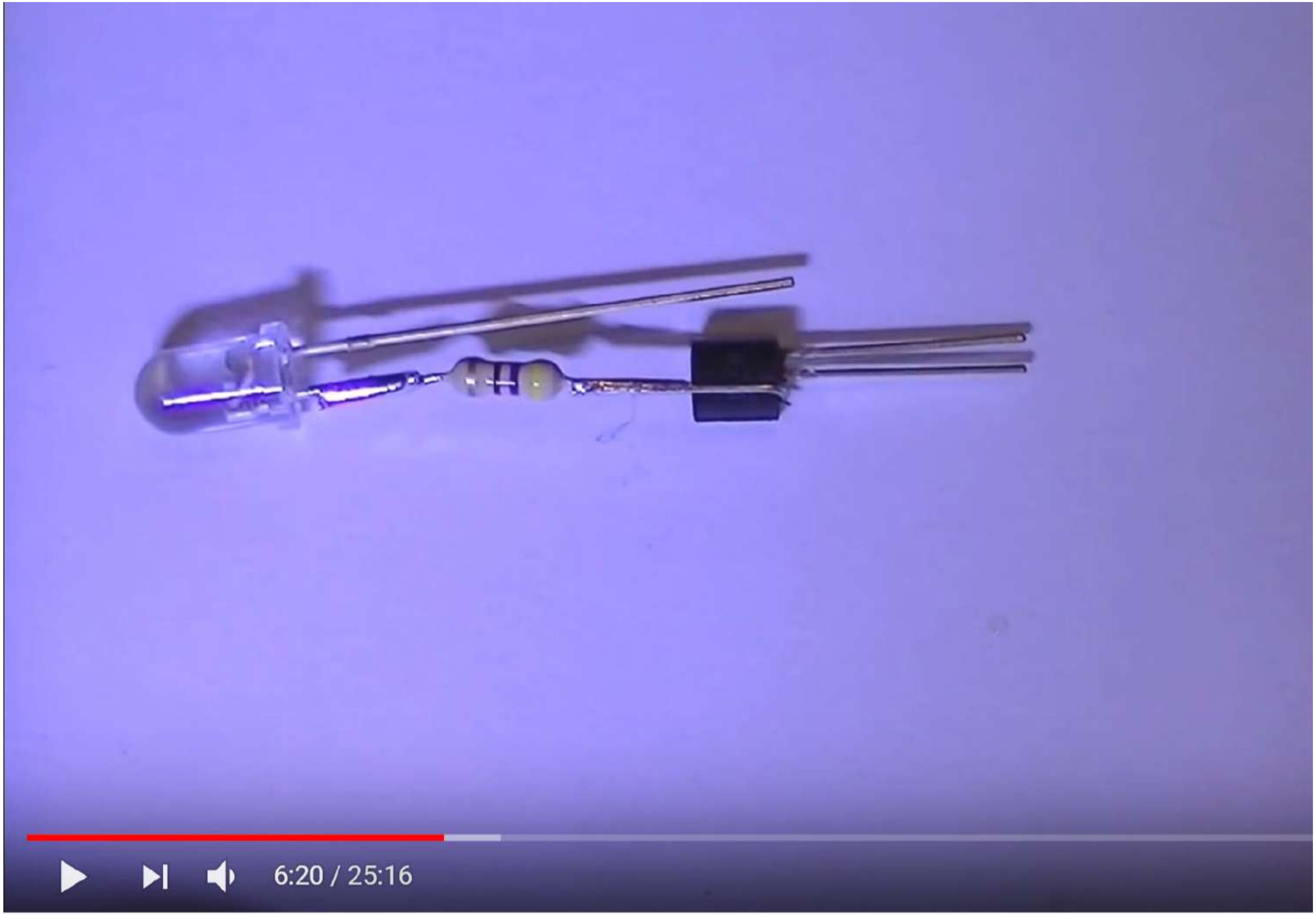
420

ets build a RF Pen detector .A good tool for testing small FM transmitters.

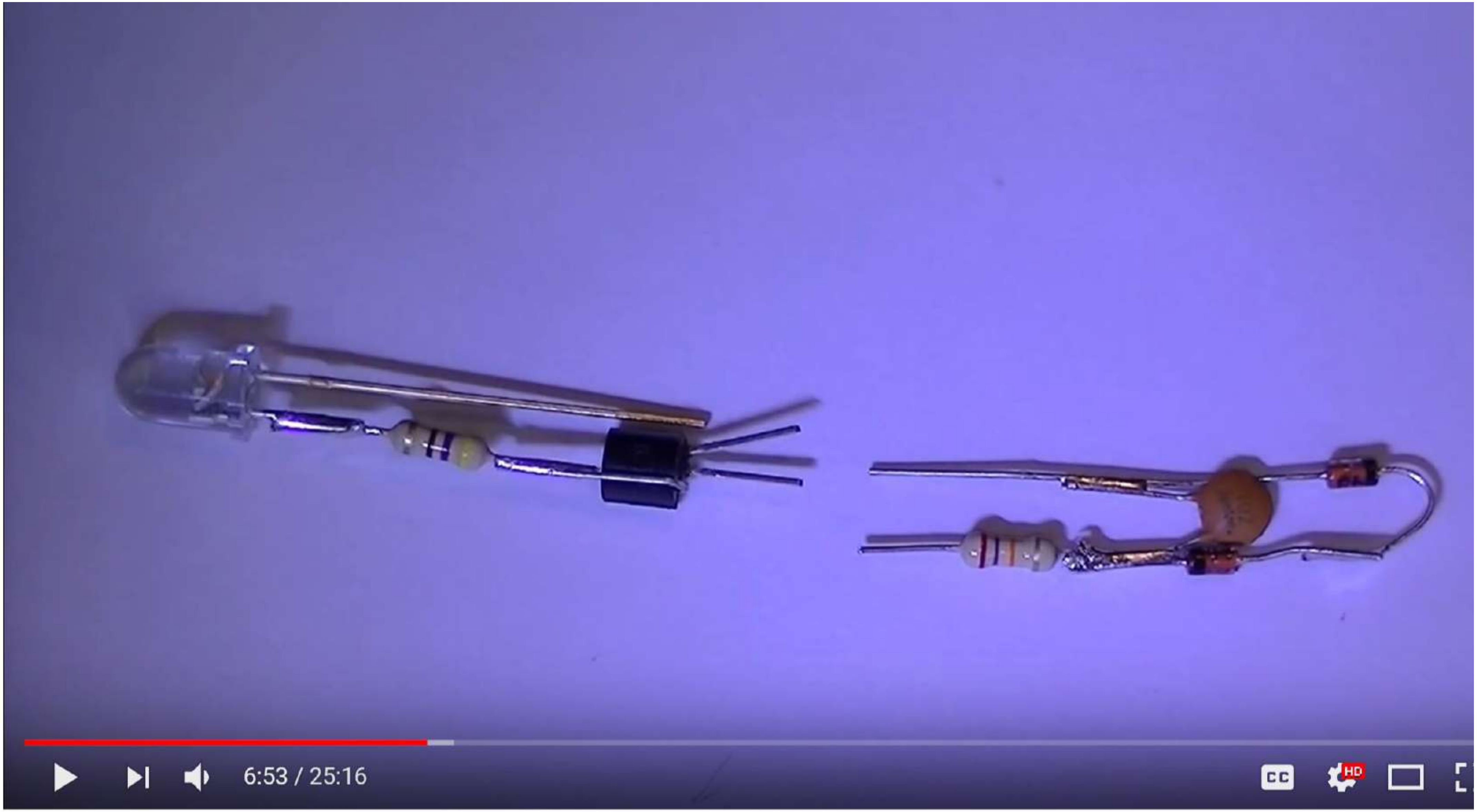
8,706 views



Lets build a RF Pen detector .A good tool for testing small FM transmitters.

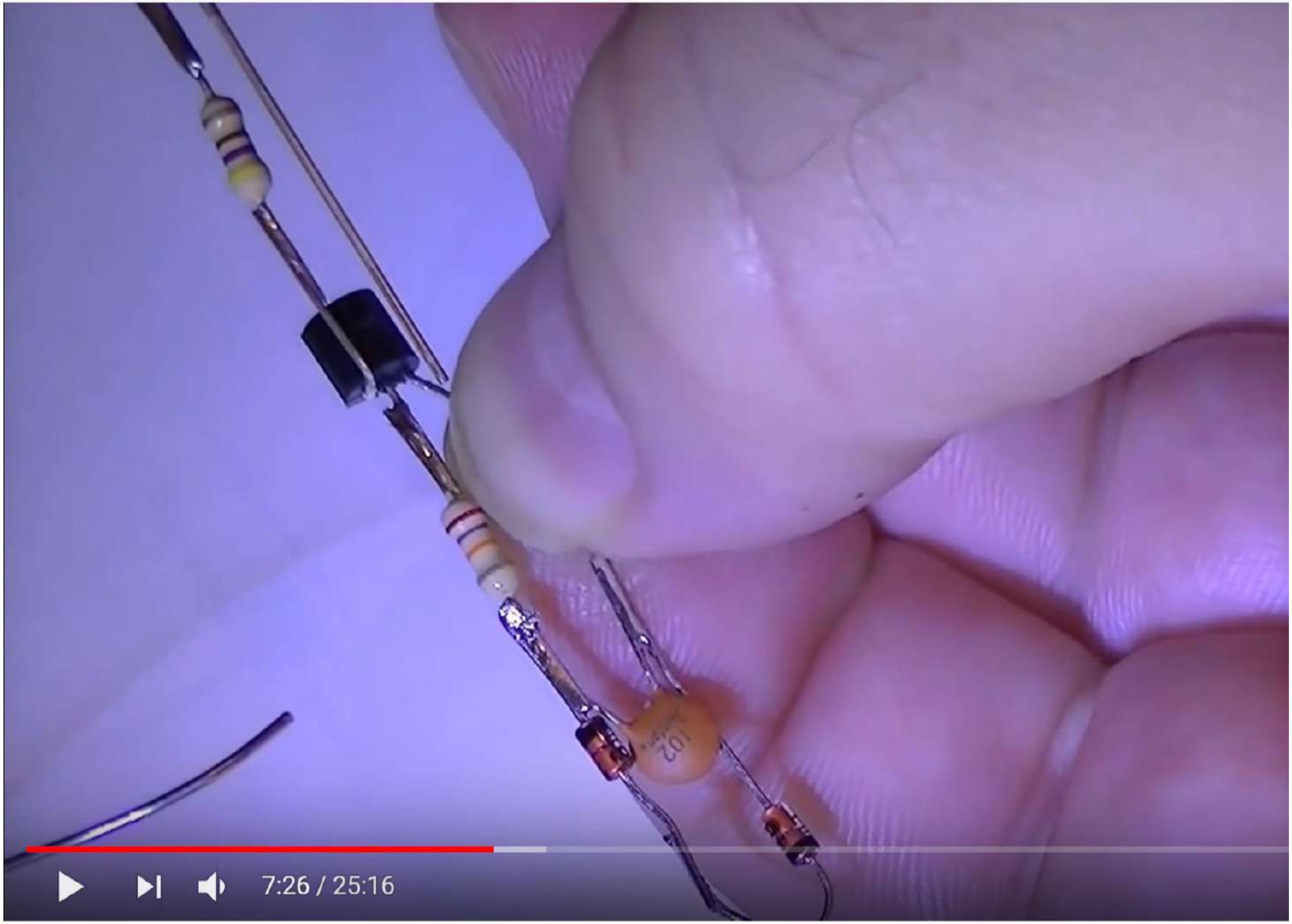


Lets build a RF Pen detector .A good tool for testing small FM transmitters.

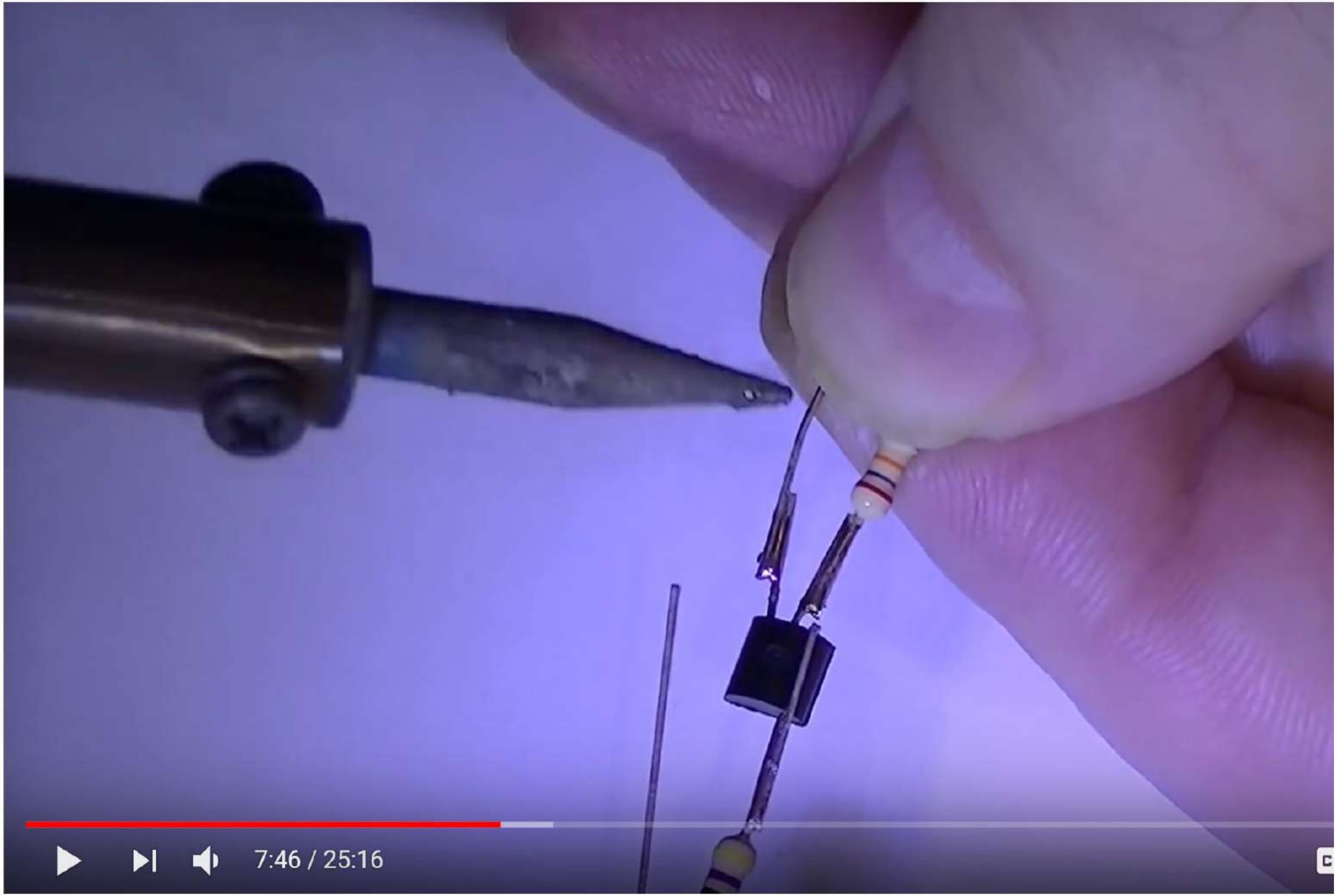


Lets build a RF Pen detector .A good tool for testing small FM transmitters.

48,706 views



Lets build a RF Pen detector .A good tool for testing small FM transmitters.



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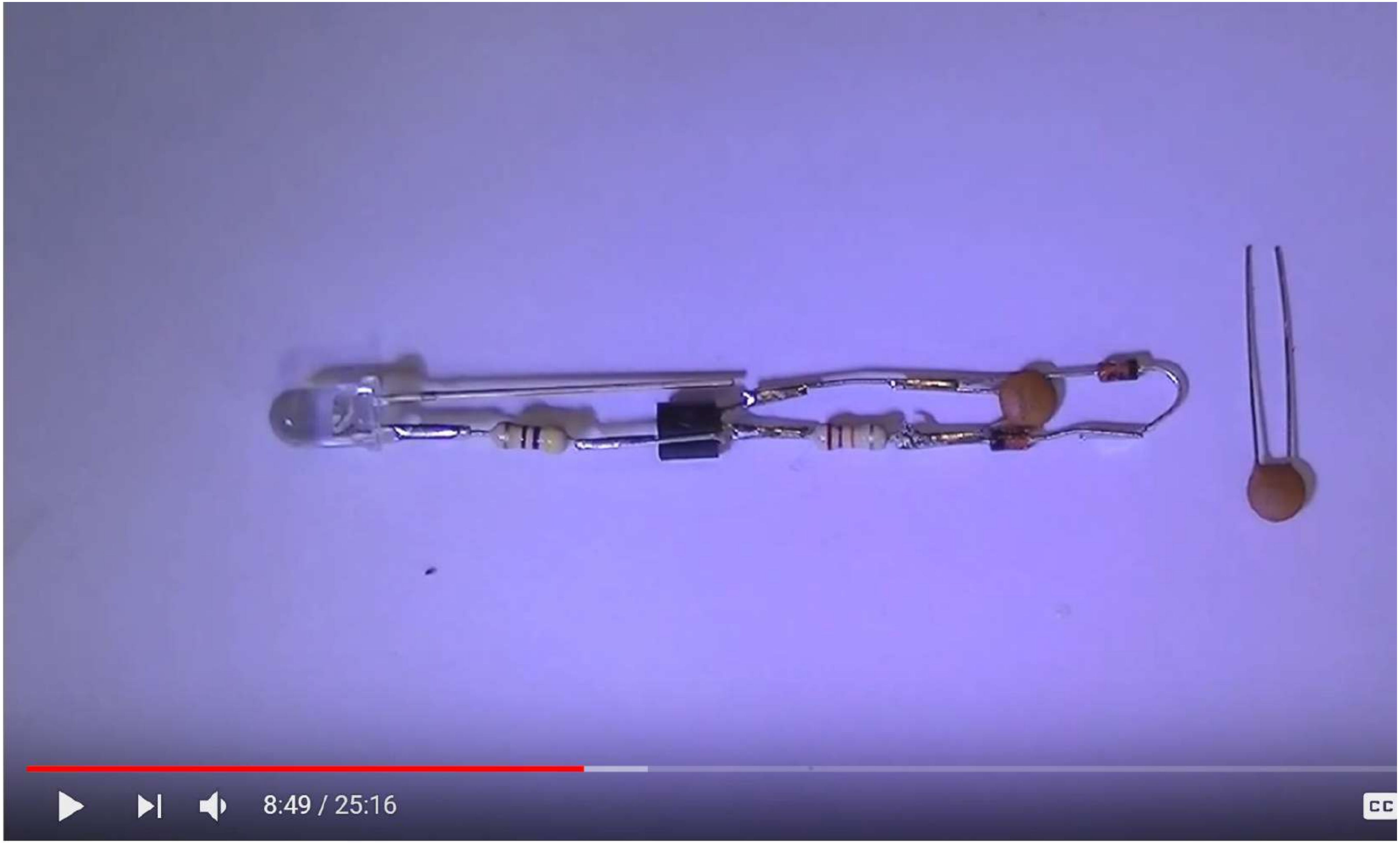
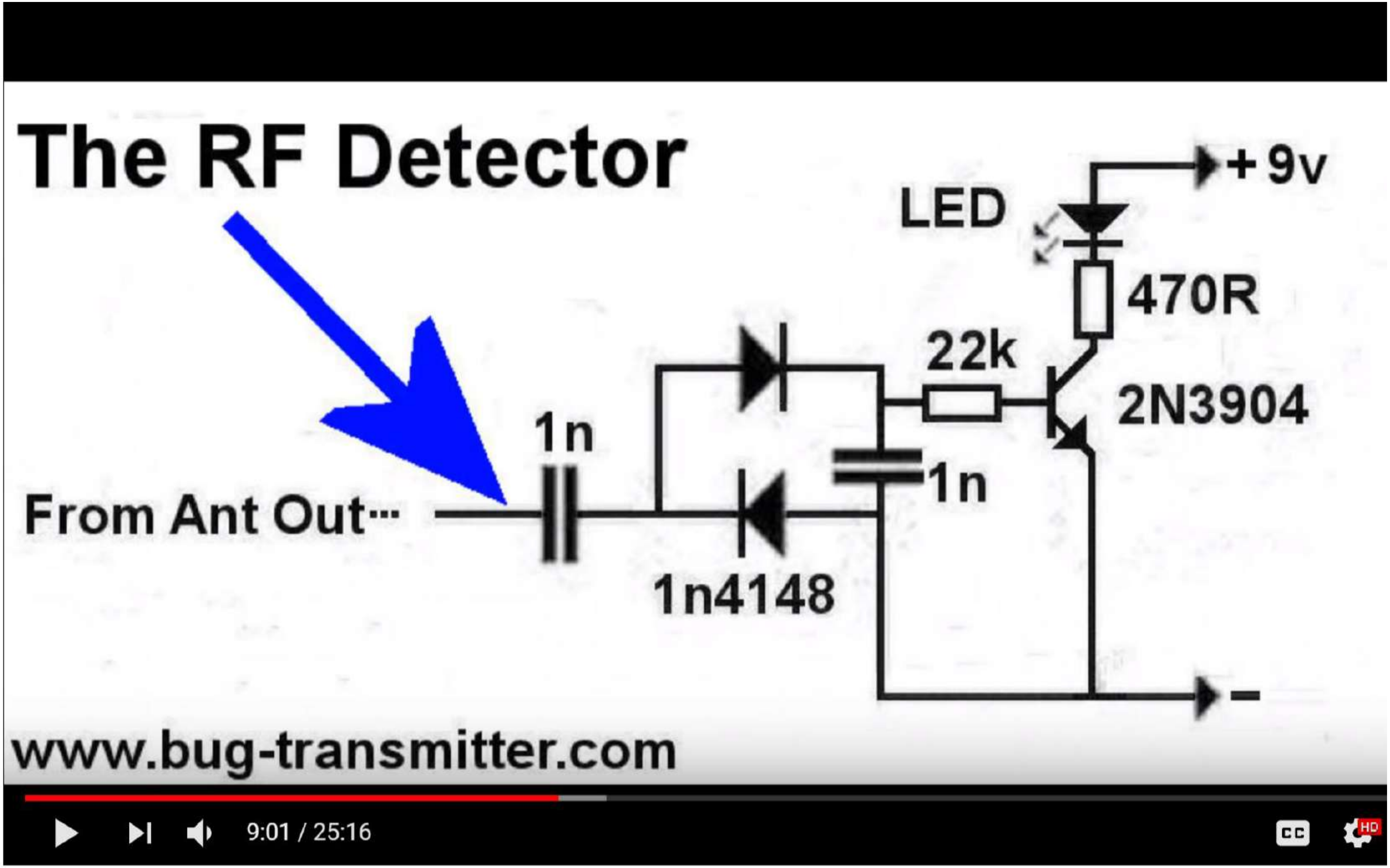


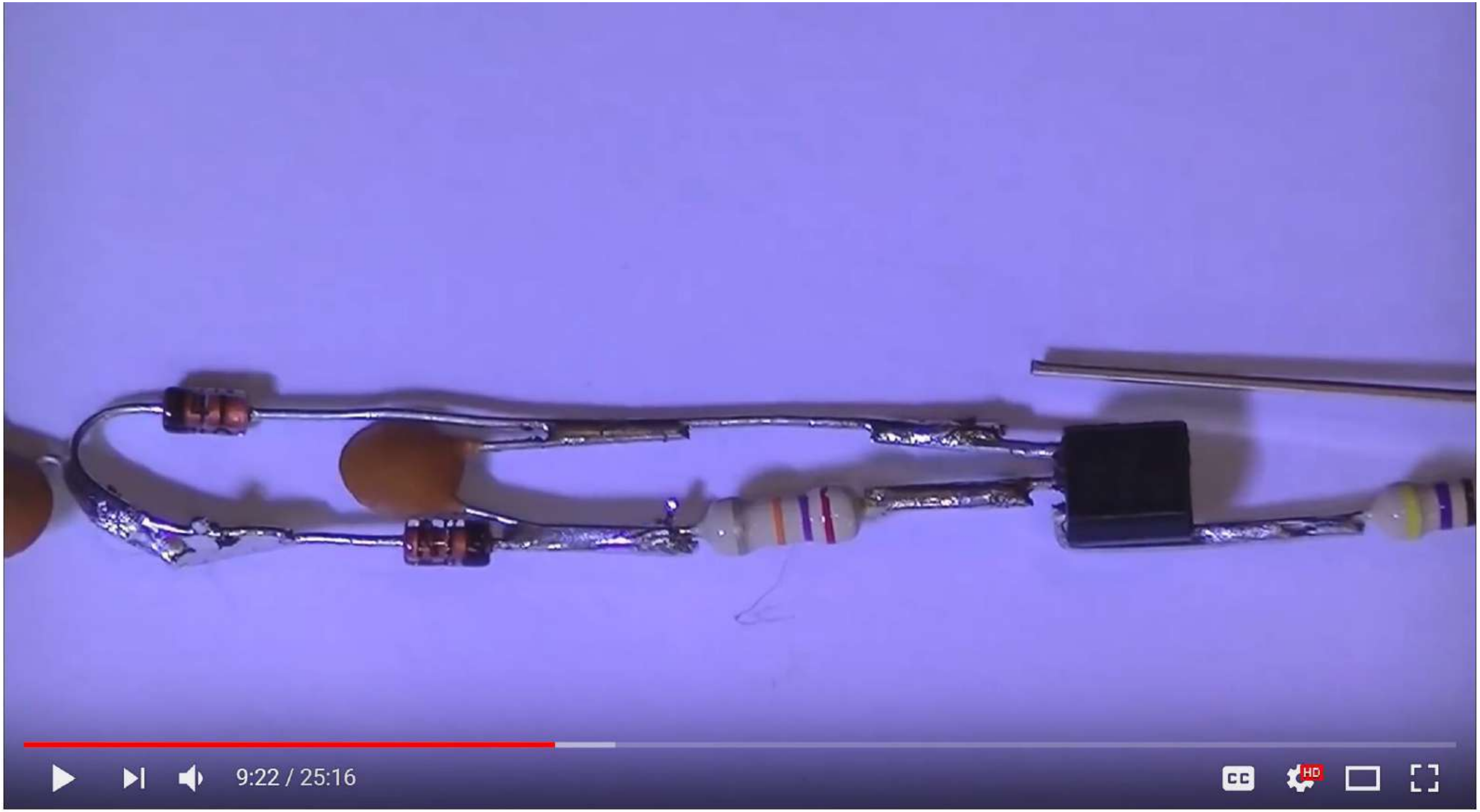
Lets build a RF Pen detector .A good tool for testing small FM transmitters.



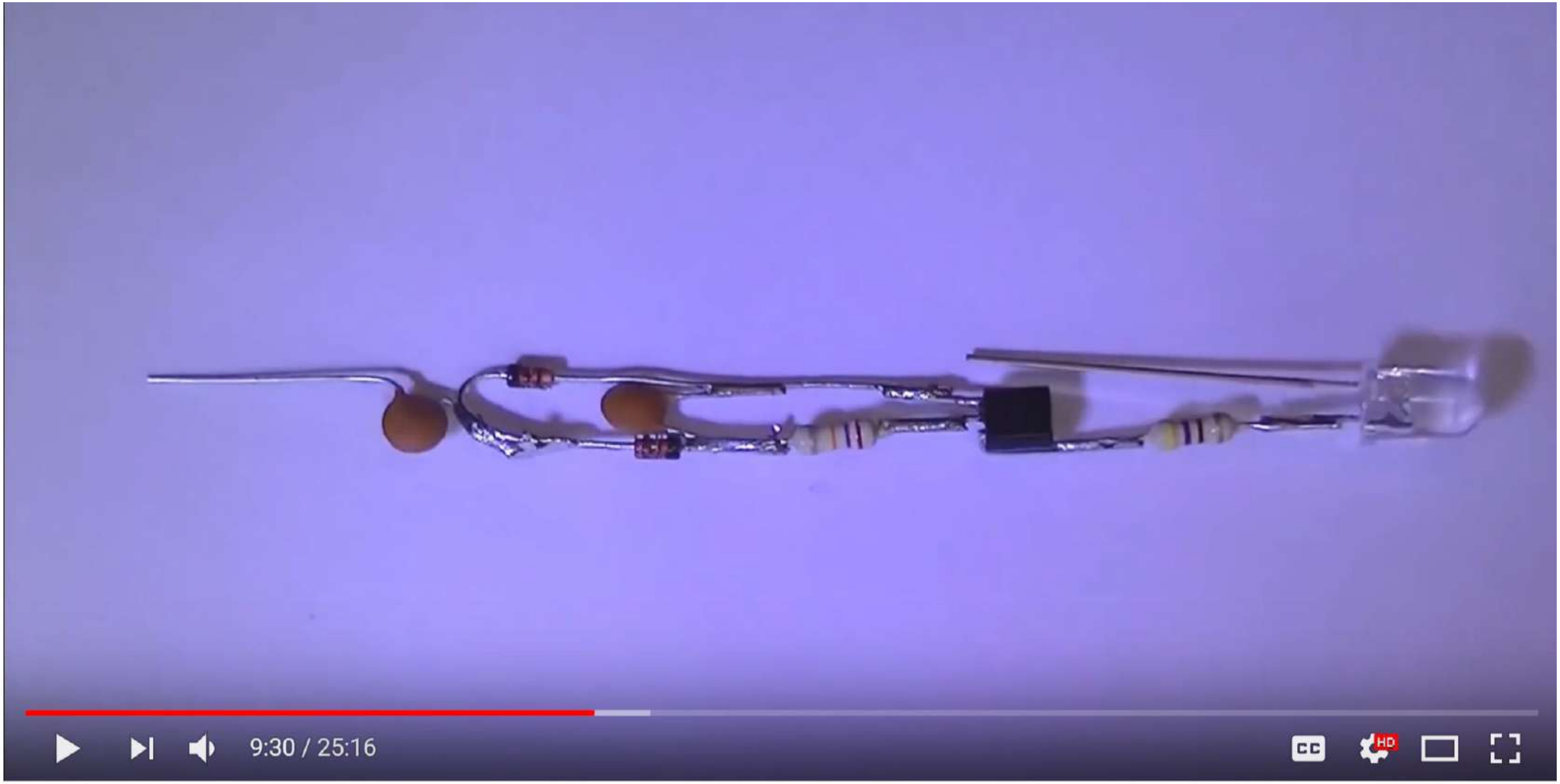
Lets build a RF Pen detector .A good tool for testing small FM transmitters.

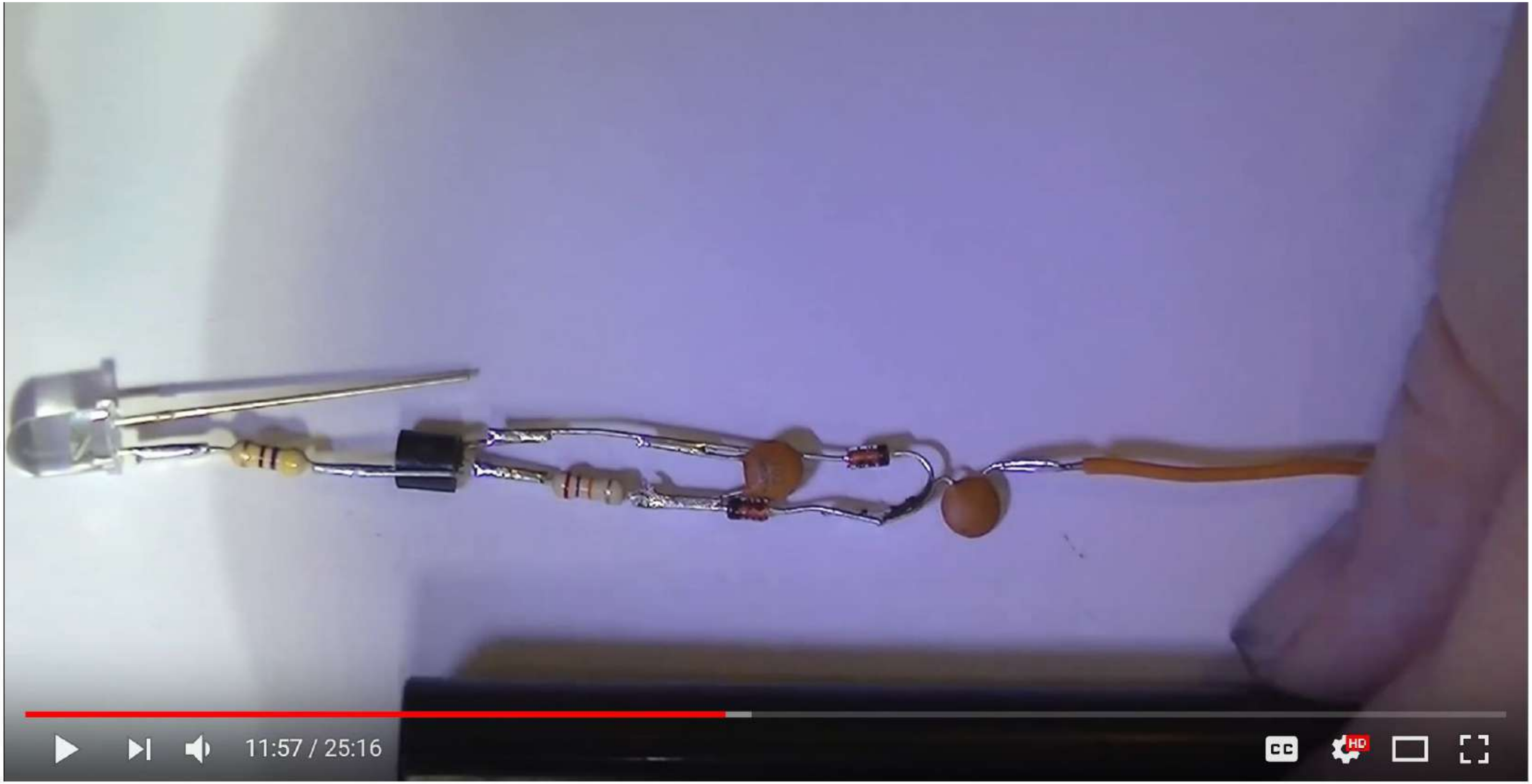
48,706 views 420 18 SHARE


9:11 / 25:16
HD

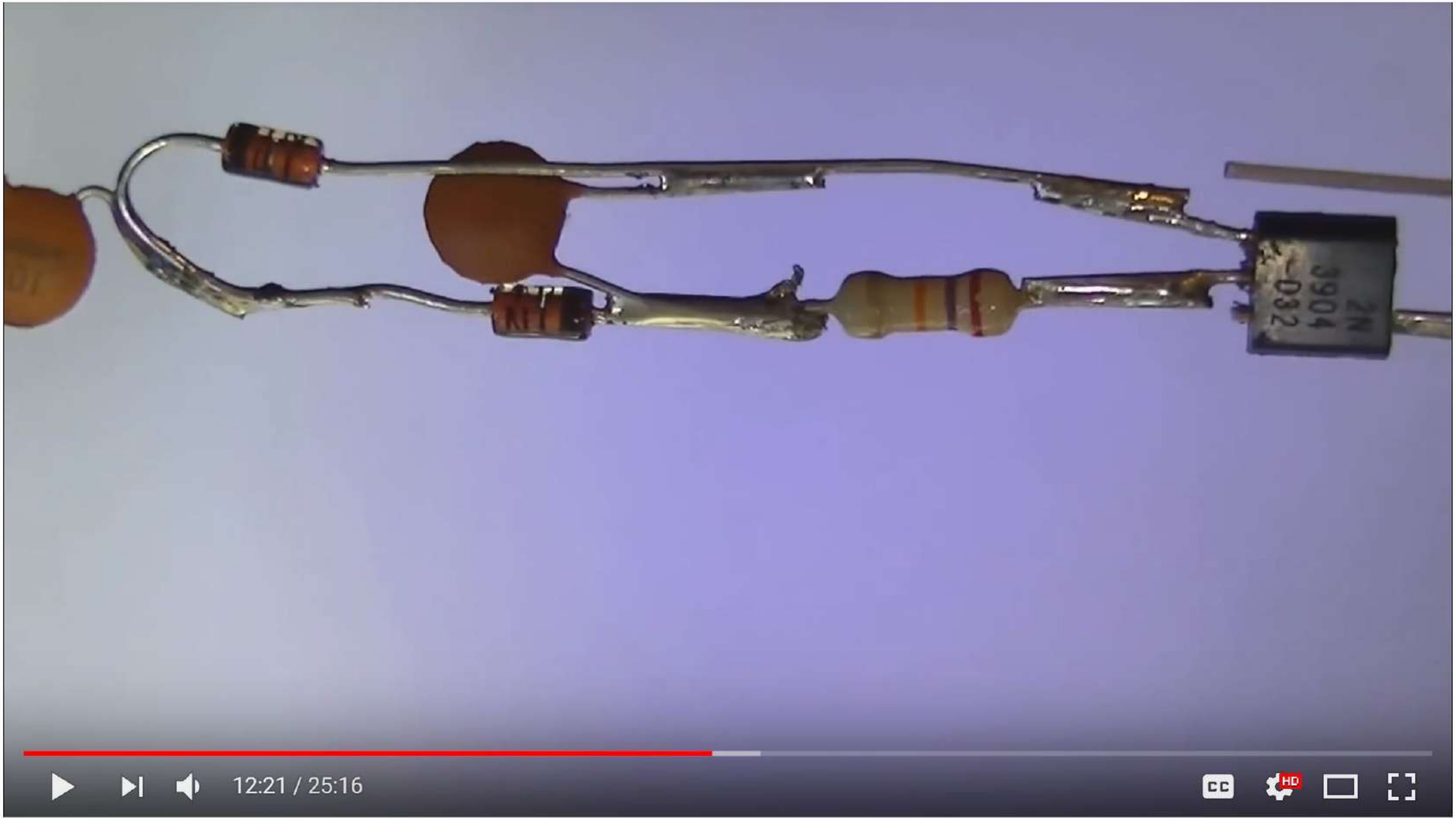


Lets build a RF Pen detector .A good tool for testing small FM transmitters.

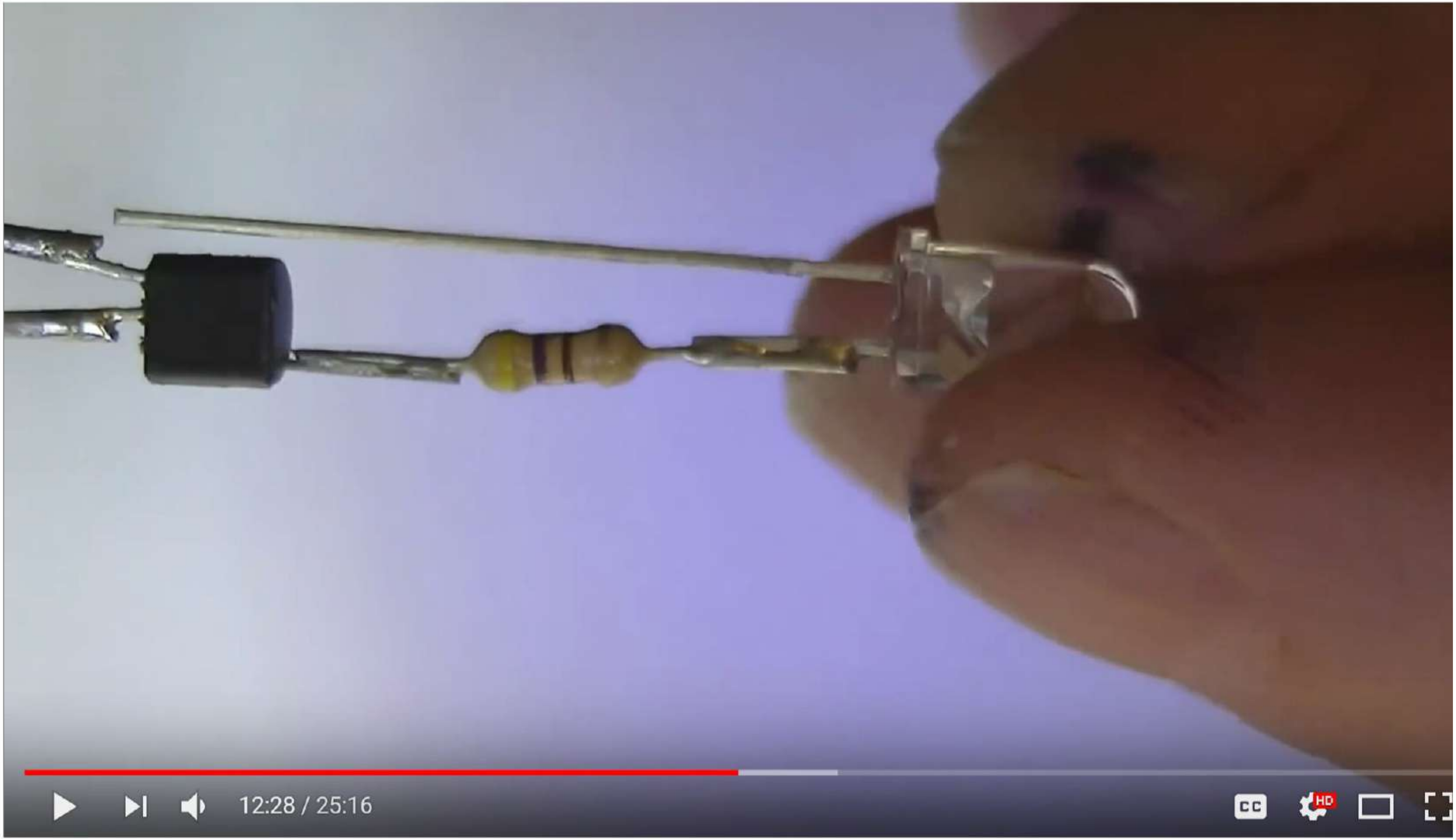

9:30 / 25:16
CC
HD



Lets build a RF Pen detector. A good tool for testing small FM transmitters



Lets build a RF Pen detector .A good tool for testing small FM transmitters.



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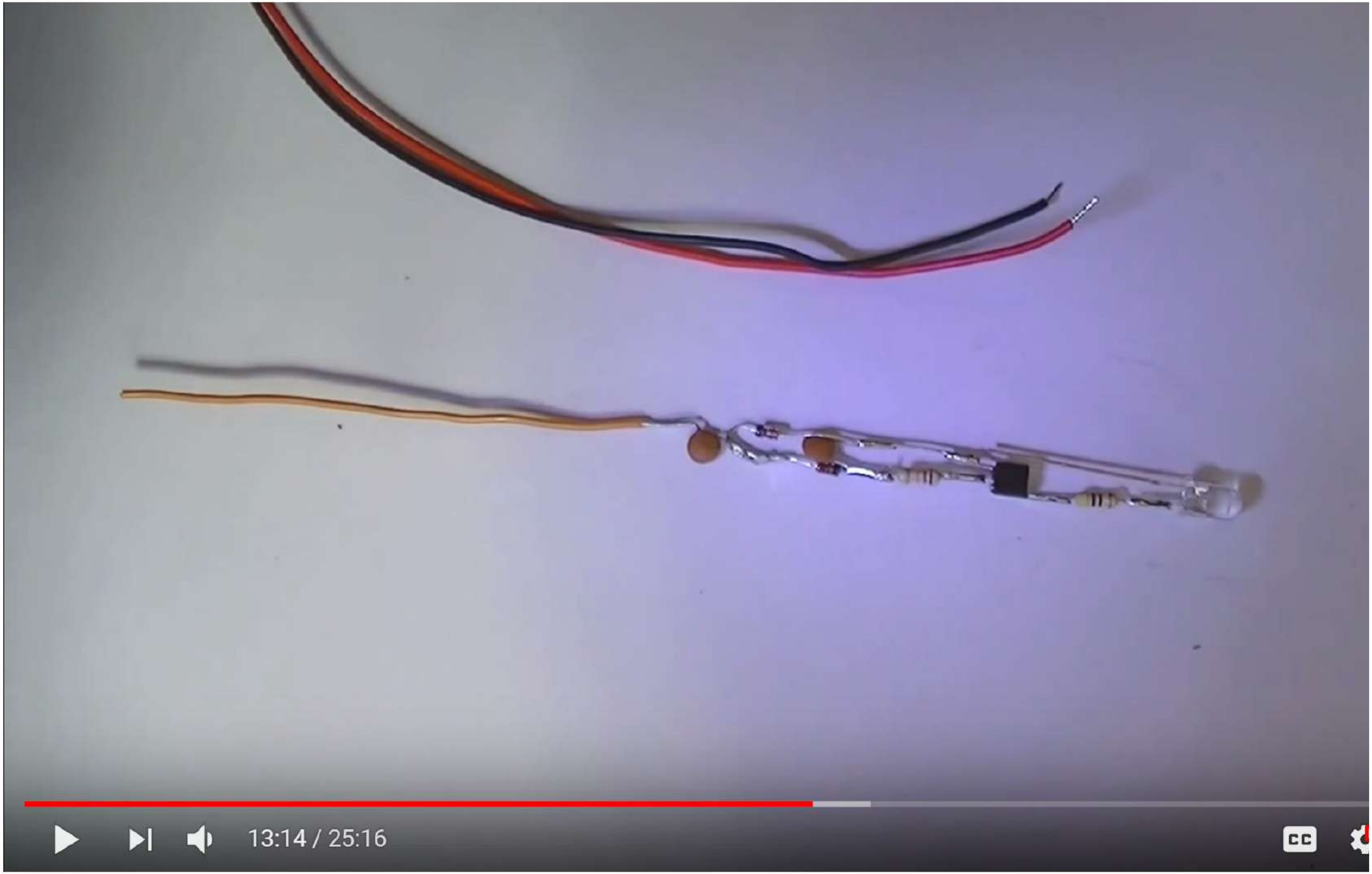

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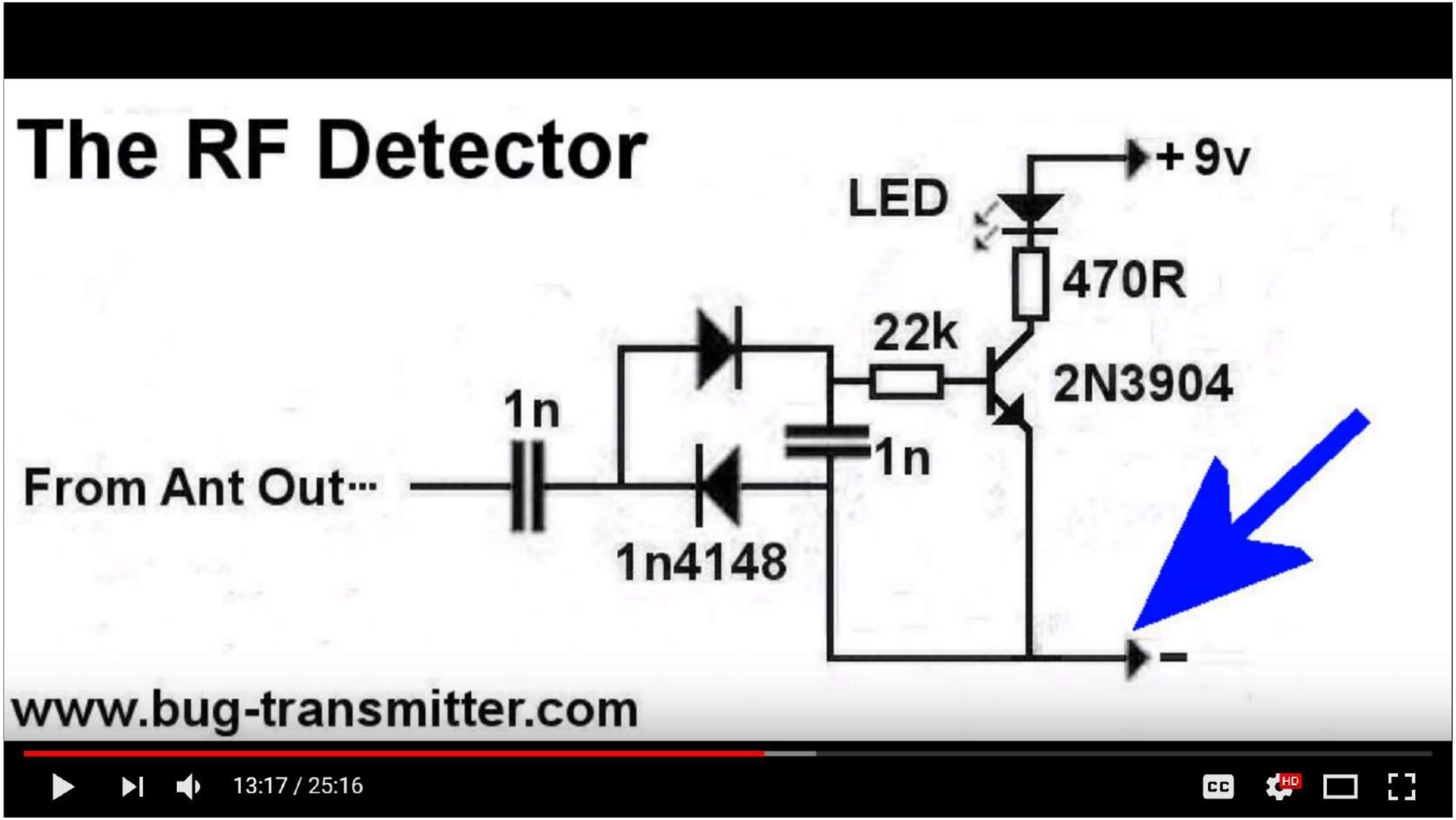
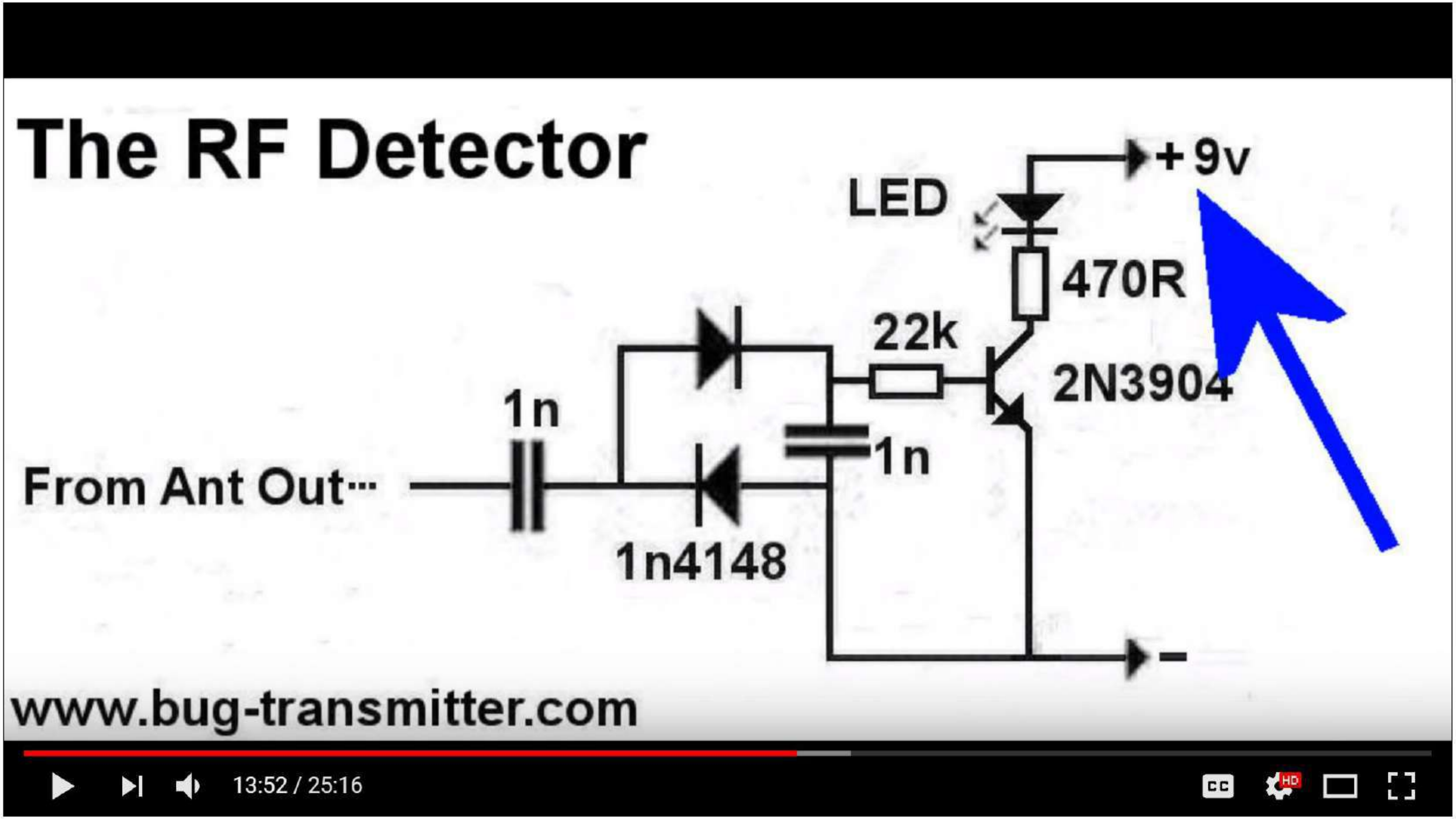
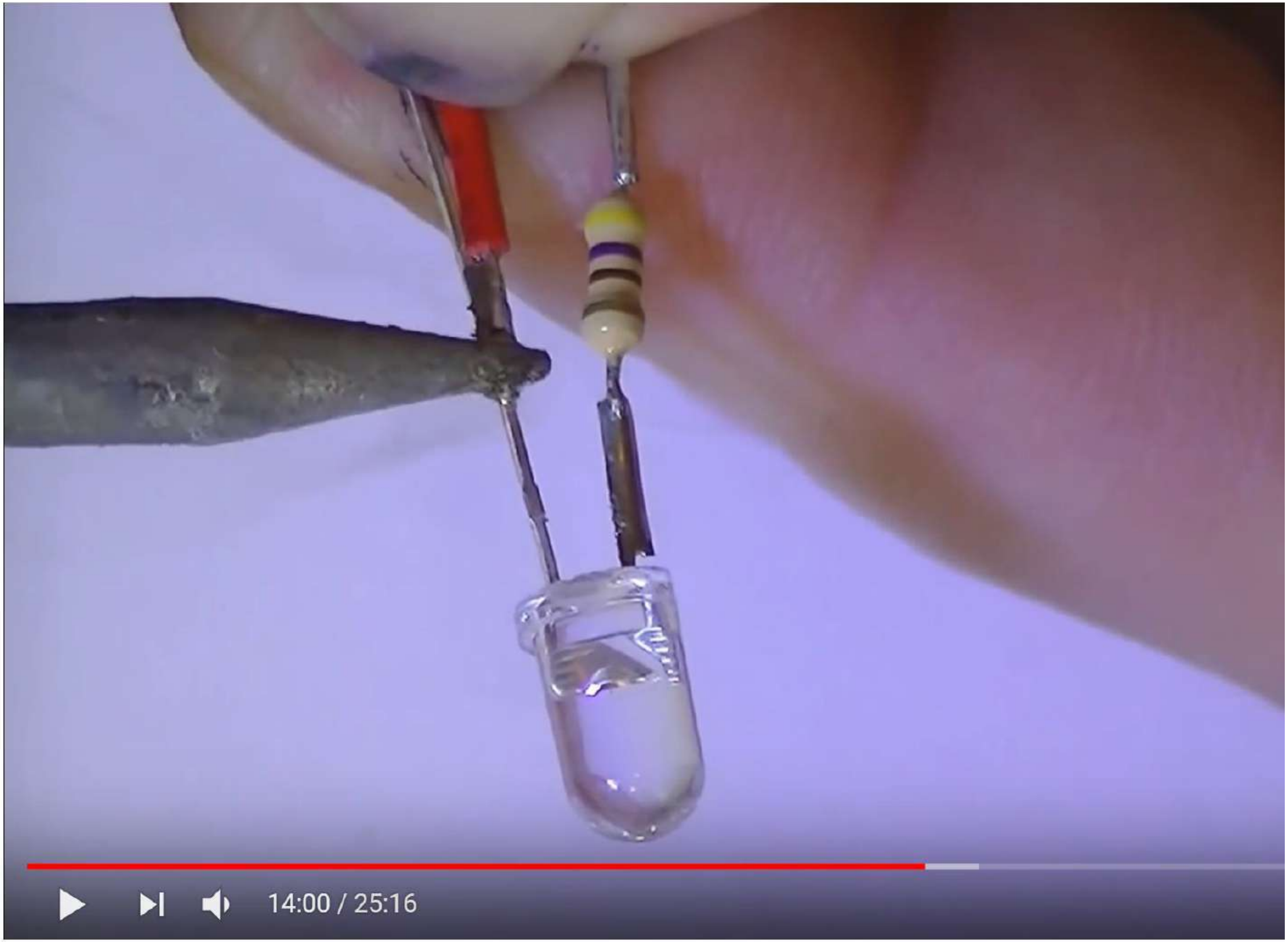


The RF Detector
LED
+ 9v
470R
22k
2N3904
1n
1n
From Ant Out
1n4148
-
www.bug-transmitter.com
13:17 / 25:16

Lets build a RF Pen detector .A good tool for testing small FM transmitters.



The RF Detector
LED
+ 9v
470R
22k
2N3904
1n
1n
From Ant Out
1n4148
-
www.bug-transmitter.com
13:52 / 25:16
HD



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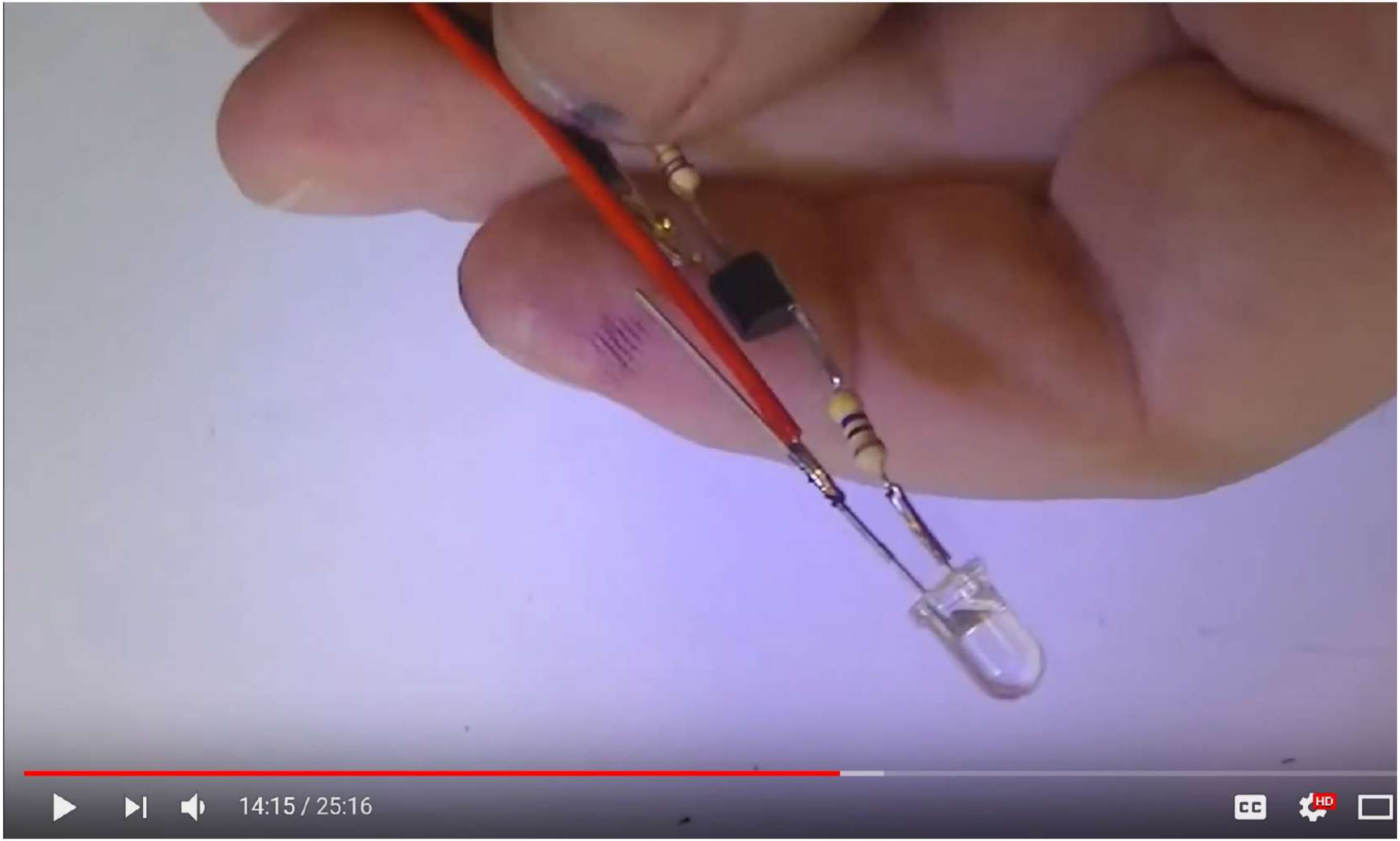

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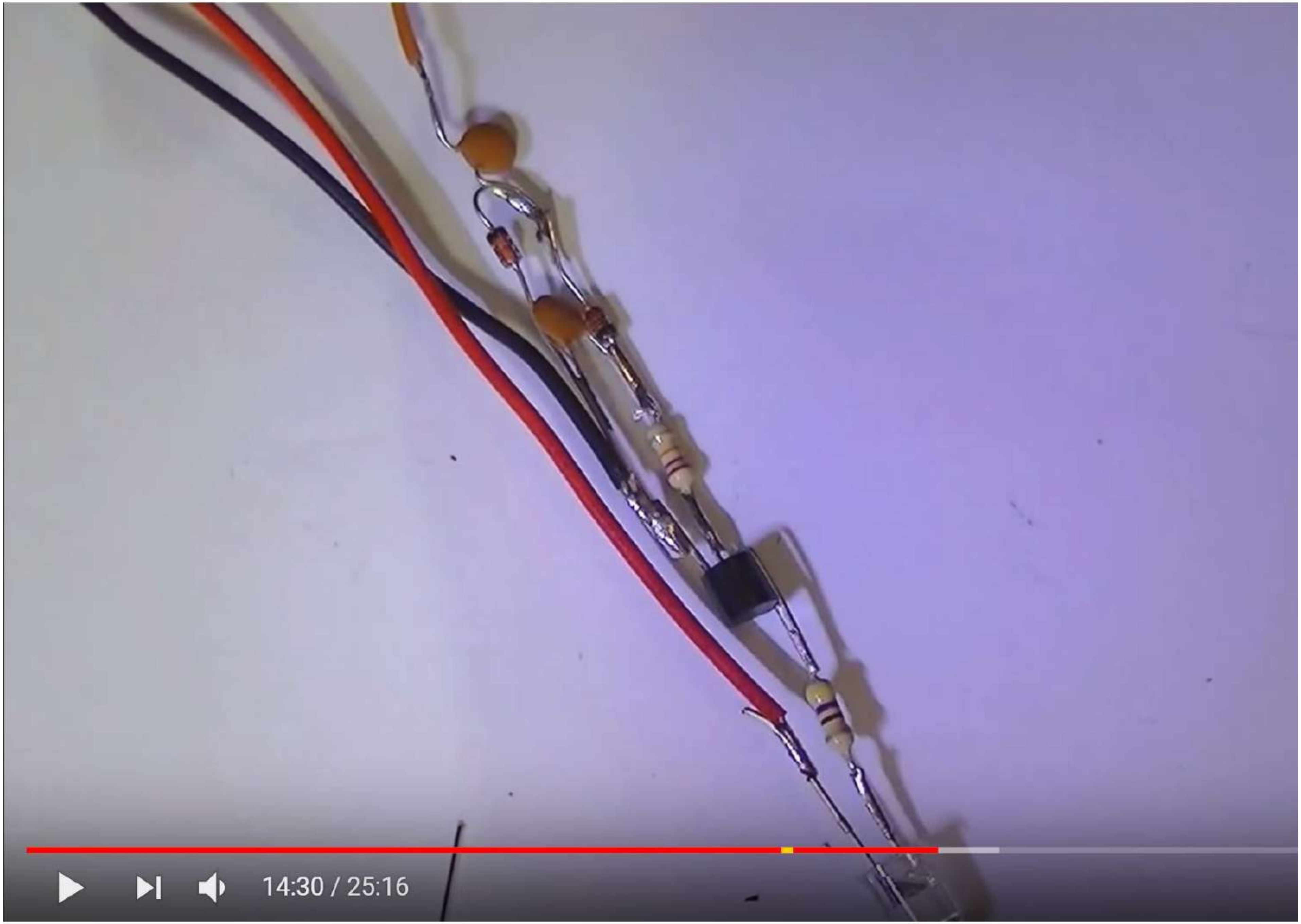

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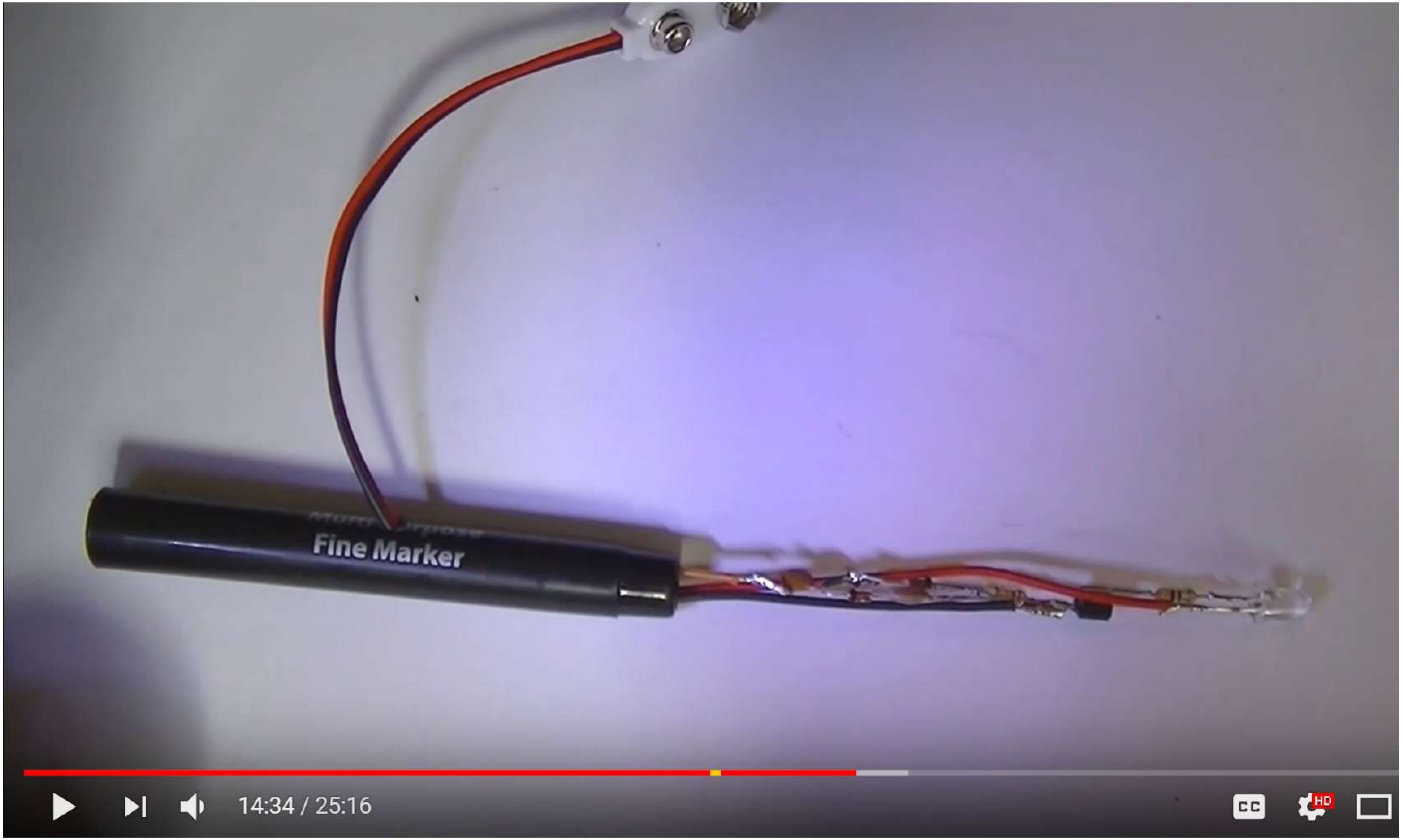
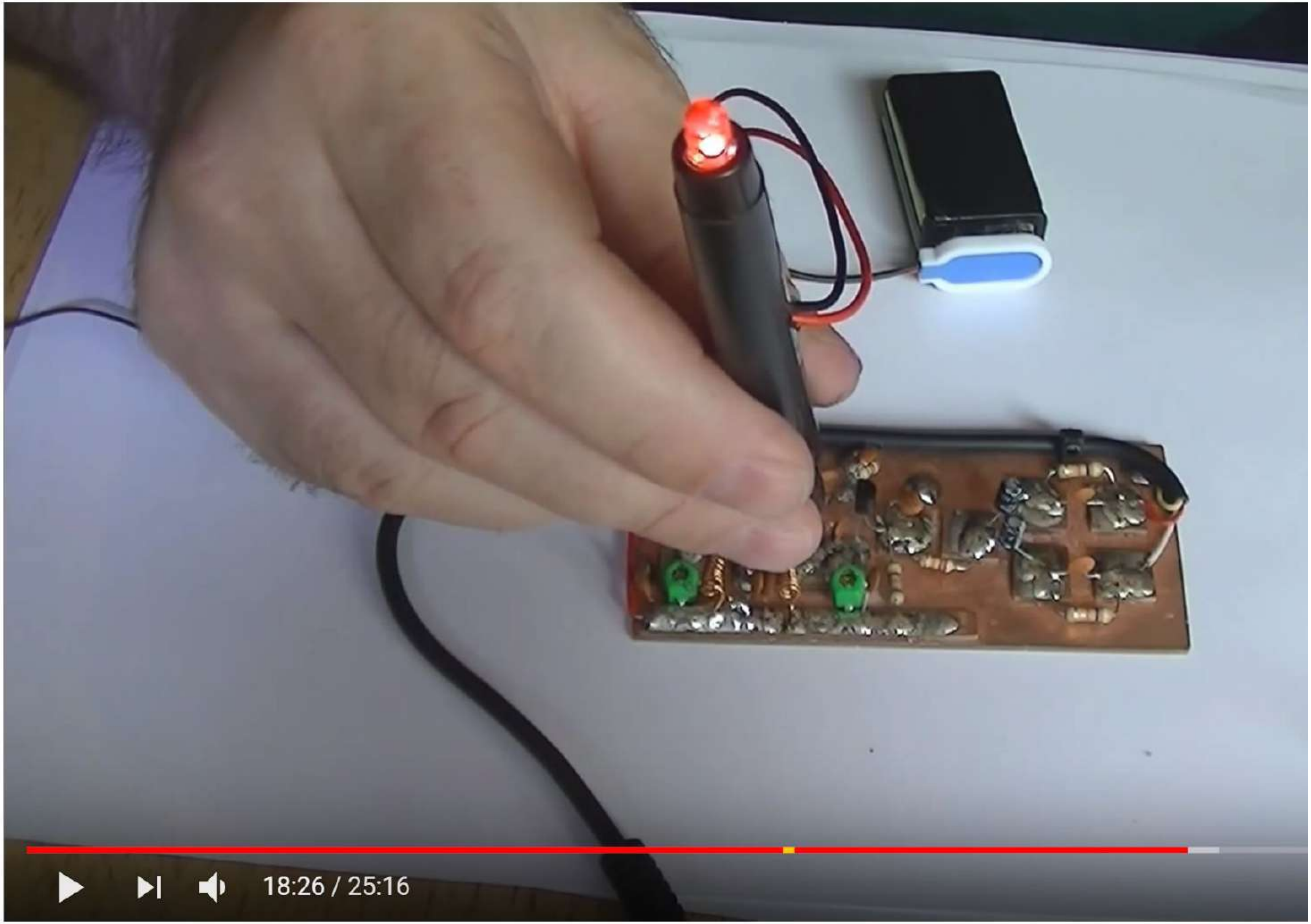


Lets build a RF Pen detector .A good tool for testing small FM transmitters.

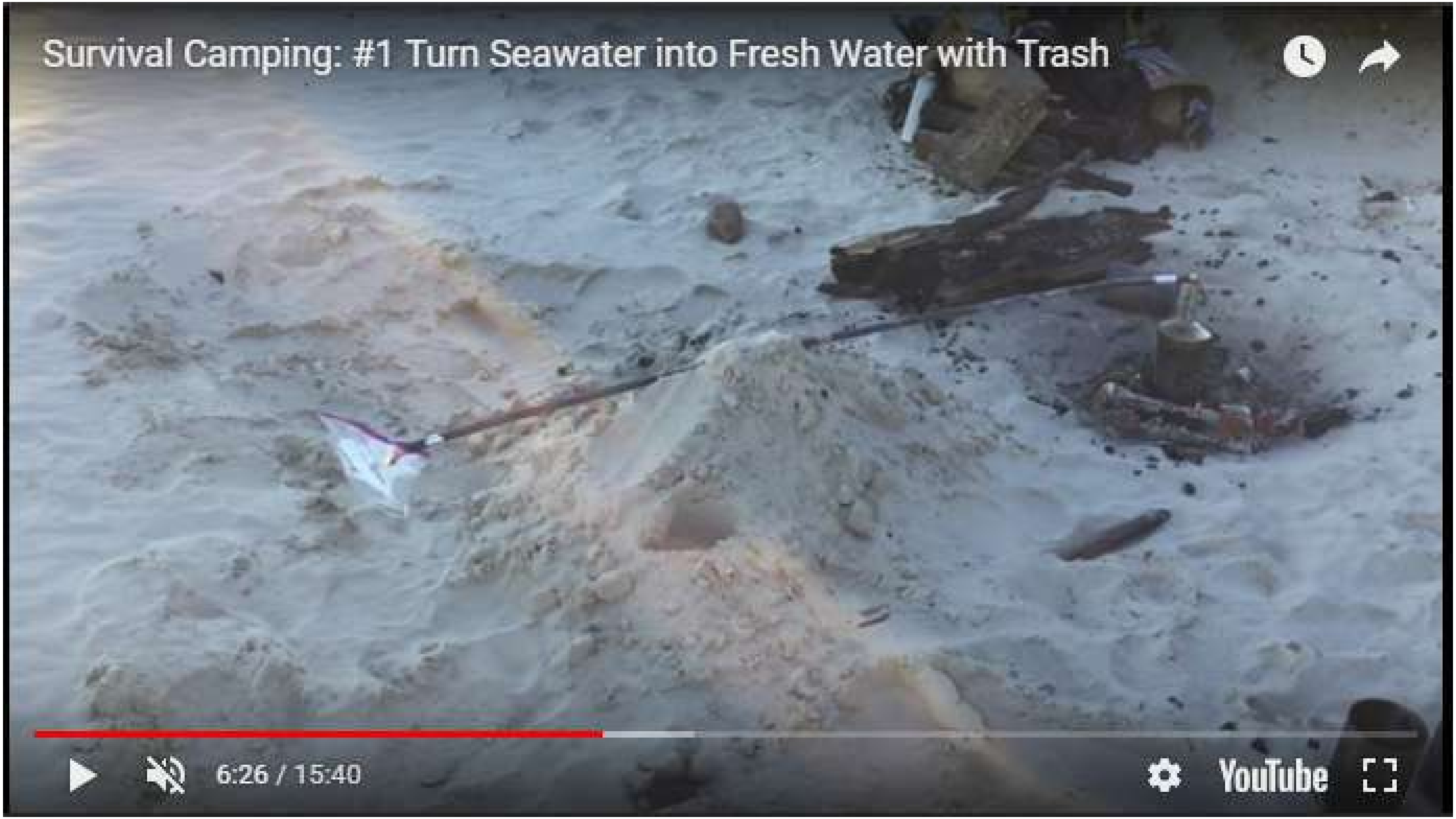


Lets build a RF Pen detector .A good tool for testing small FM transmitters.

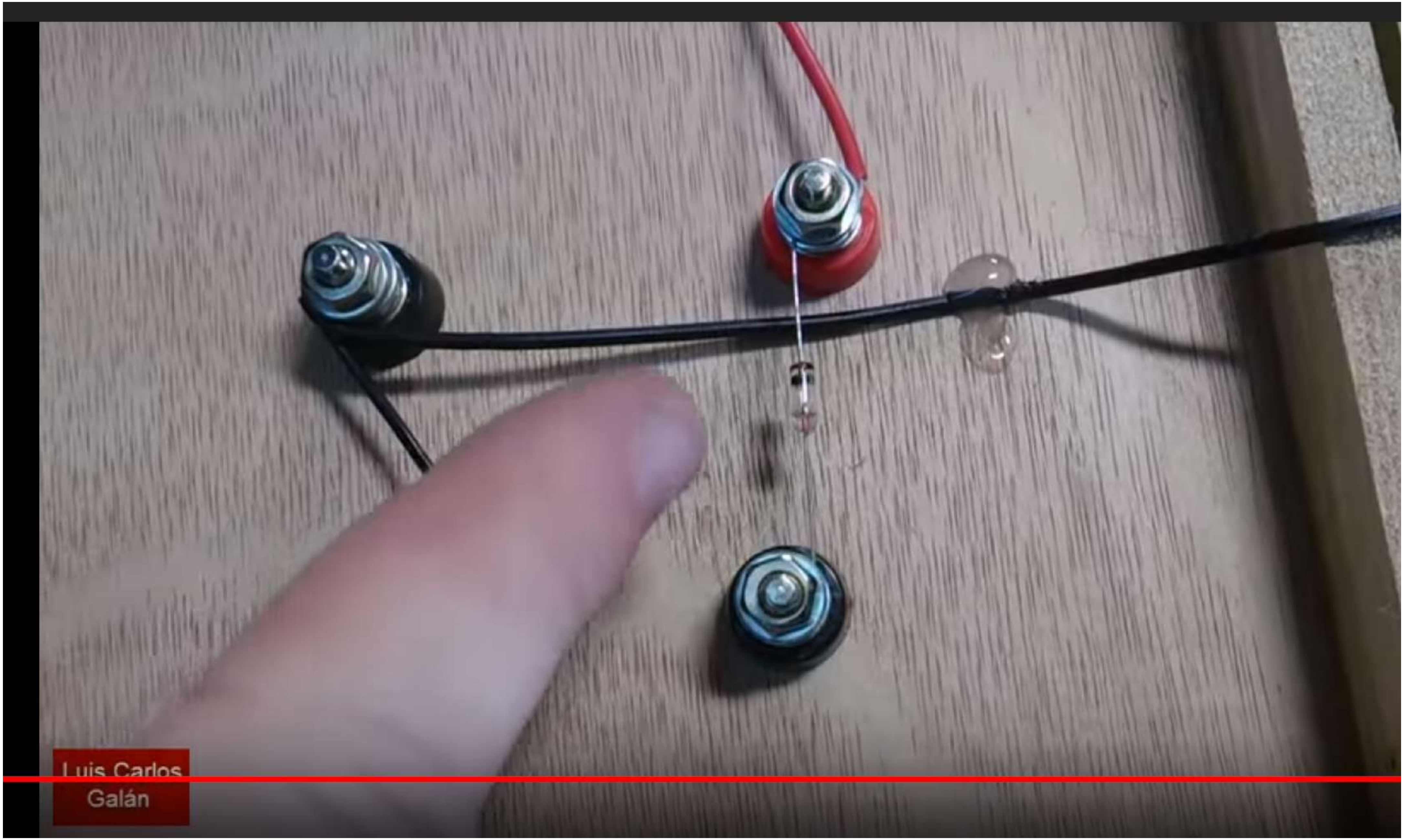
Lets build a RF Pen detector .A good tool for testing small FM transmitters.

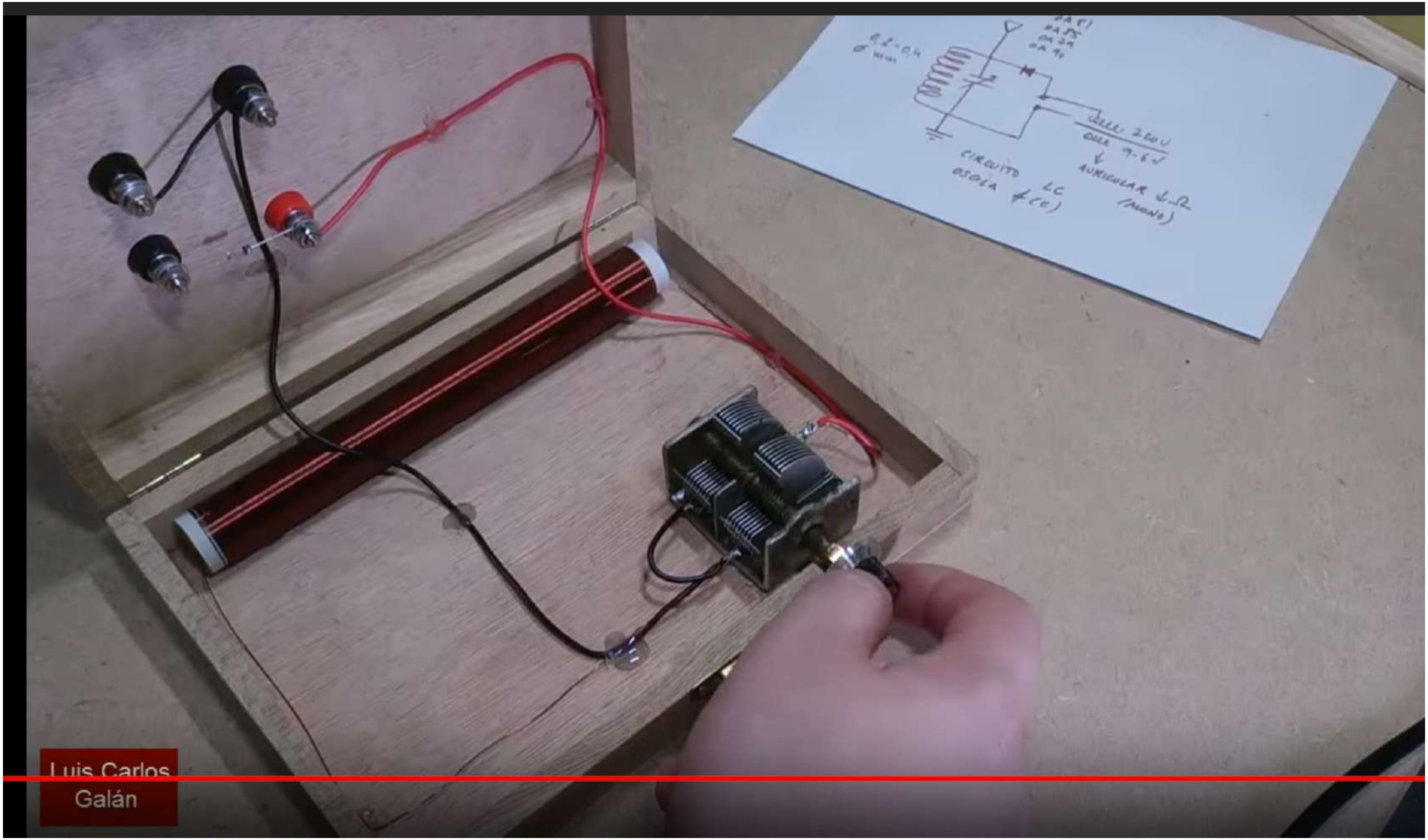

Survival Camping: #1 Turn Seawater into Fresh Water with Trash
5:30 / 15:40
YouTube

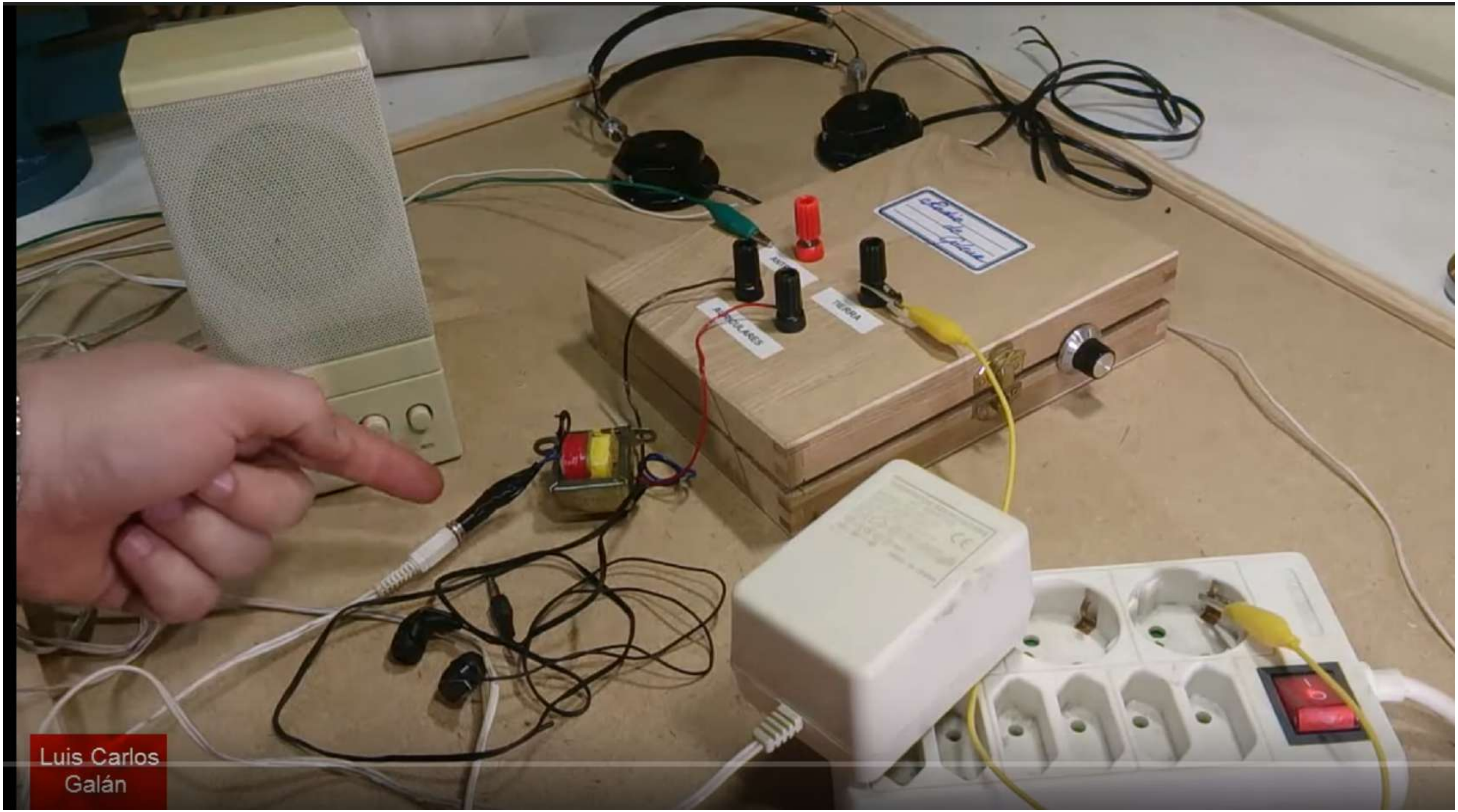

Survival Camping: #1 Turn Seawater into Fresh Water with Trash
5:37 / 15:40
YouTube

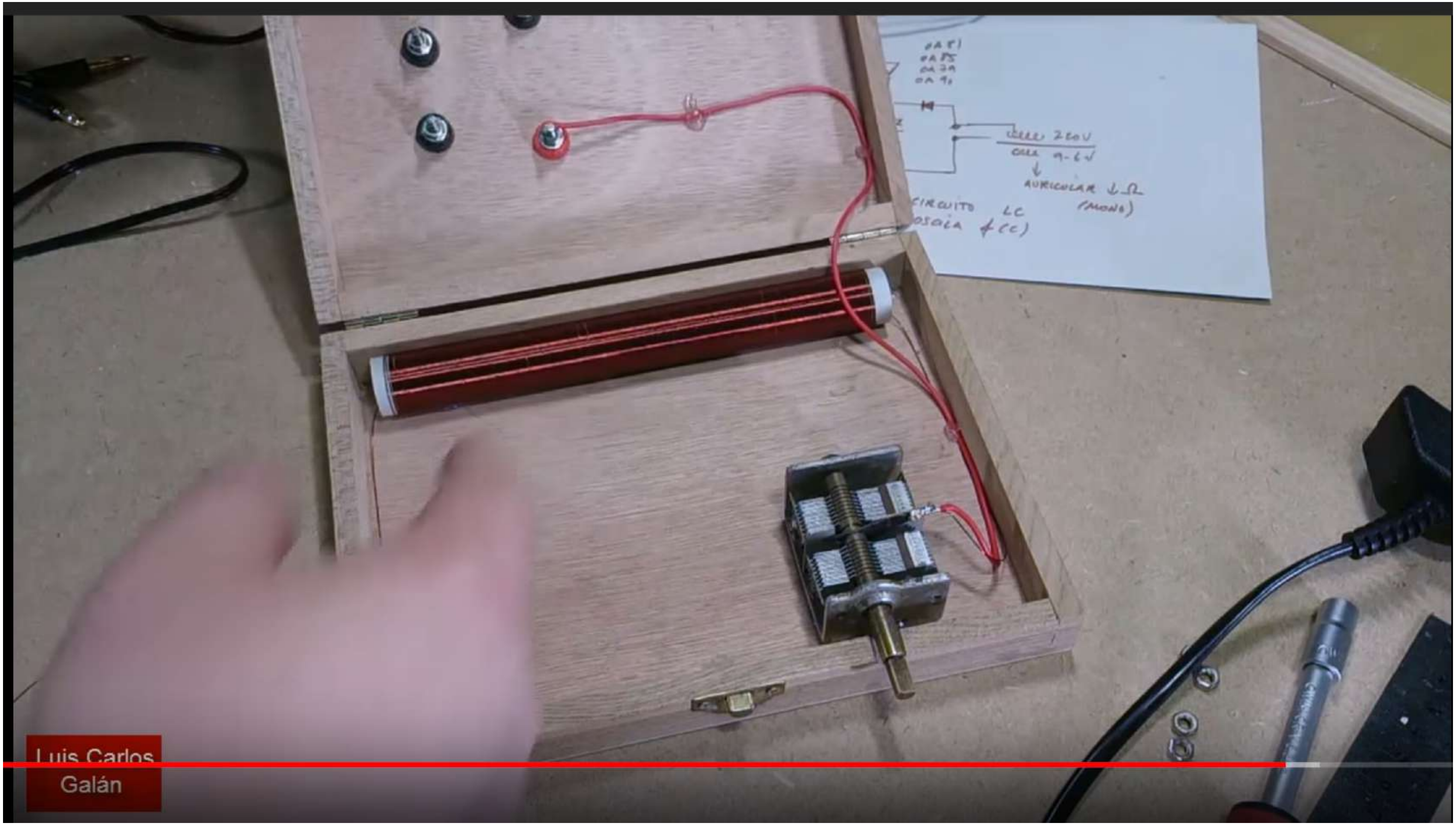

Survival Camping: #1 Turn Seawater into Fresh Water with Trash
6:26 / 15:40
YouTube

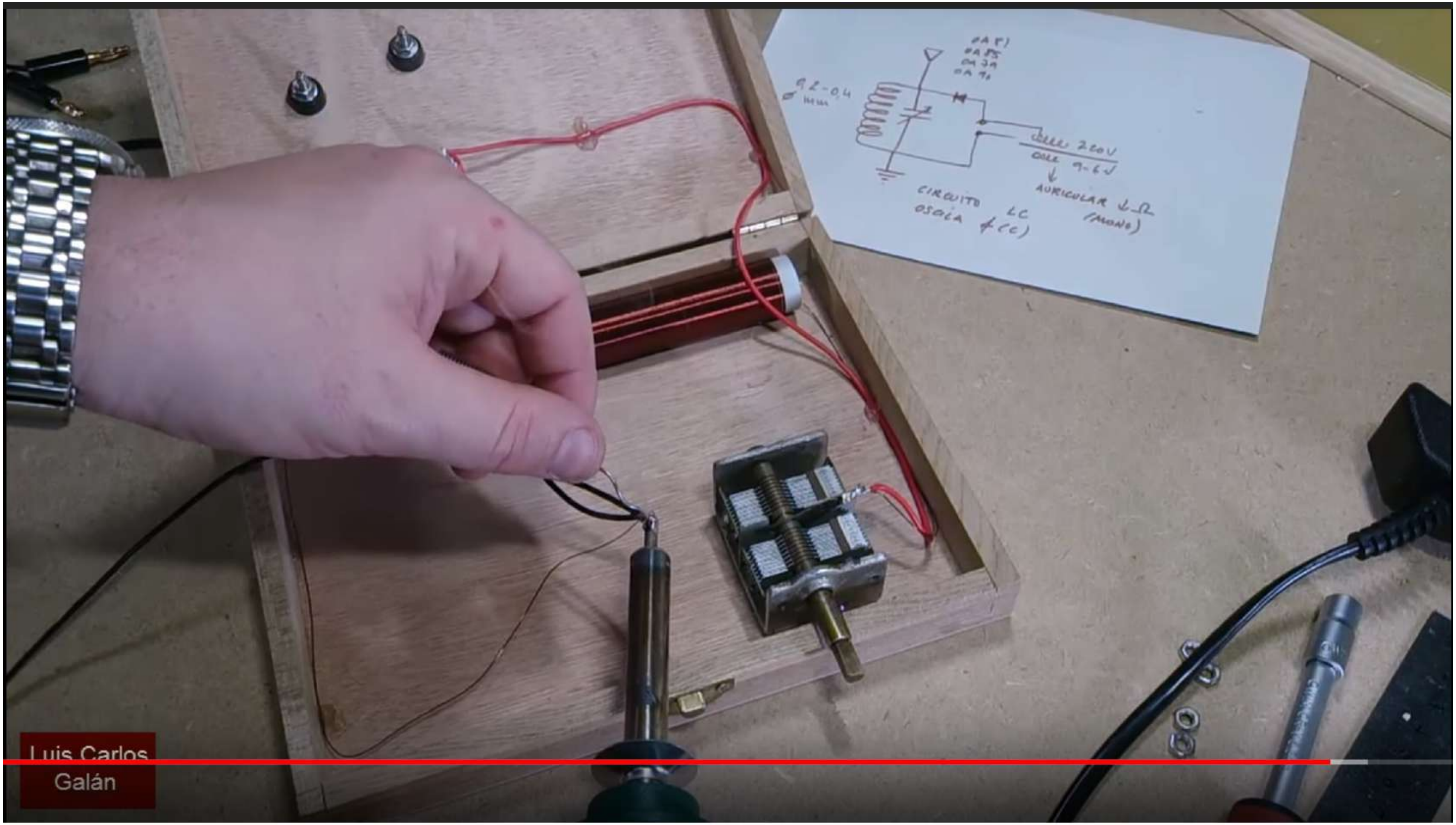

Survival Camping: #1 Turn Seawater into Fresh Water with Trash
6:34 / 15:40
YouTube

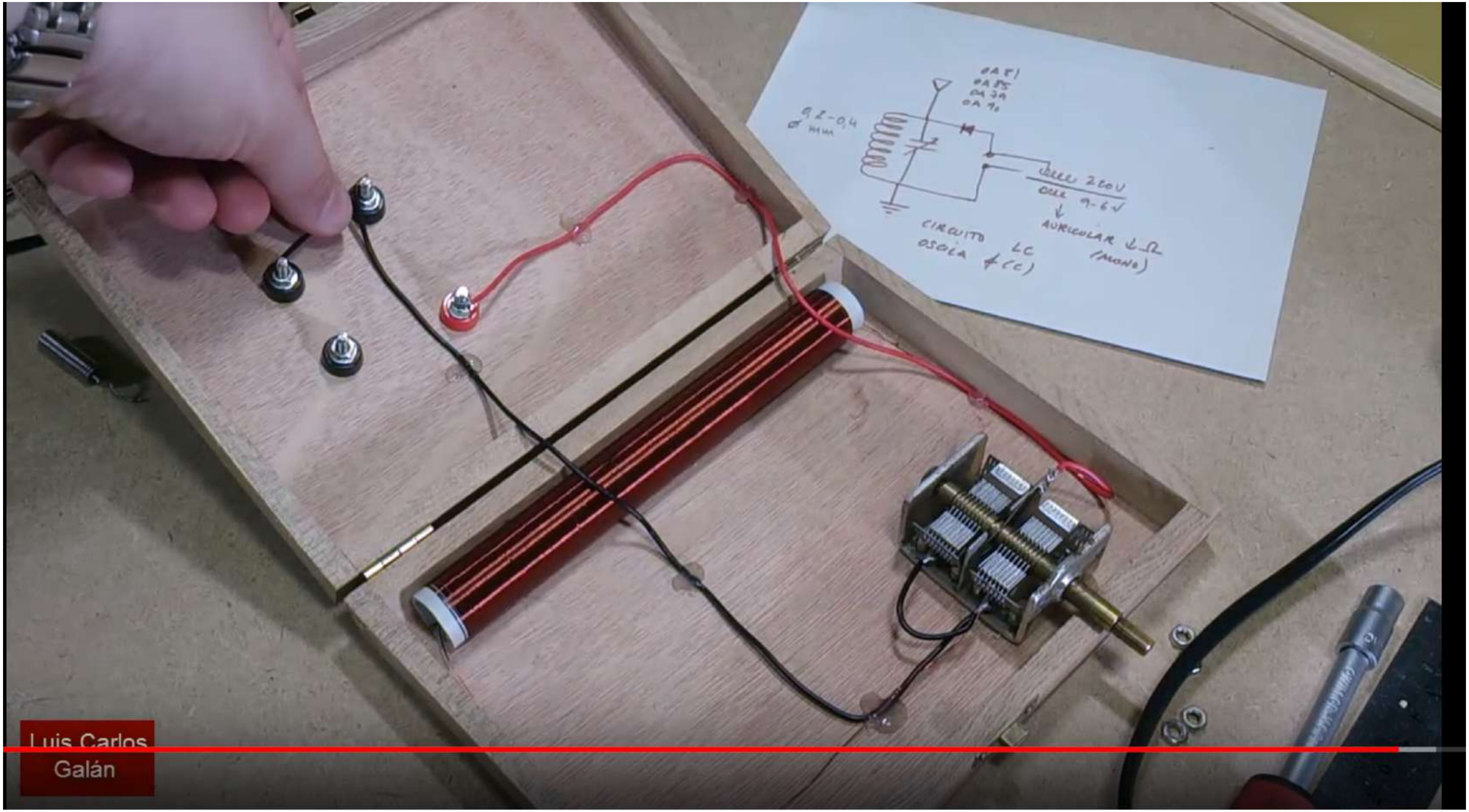

Luis Carlos
Galán

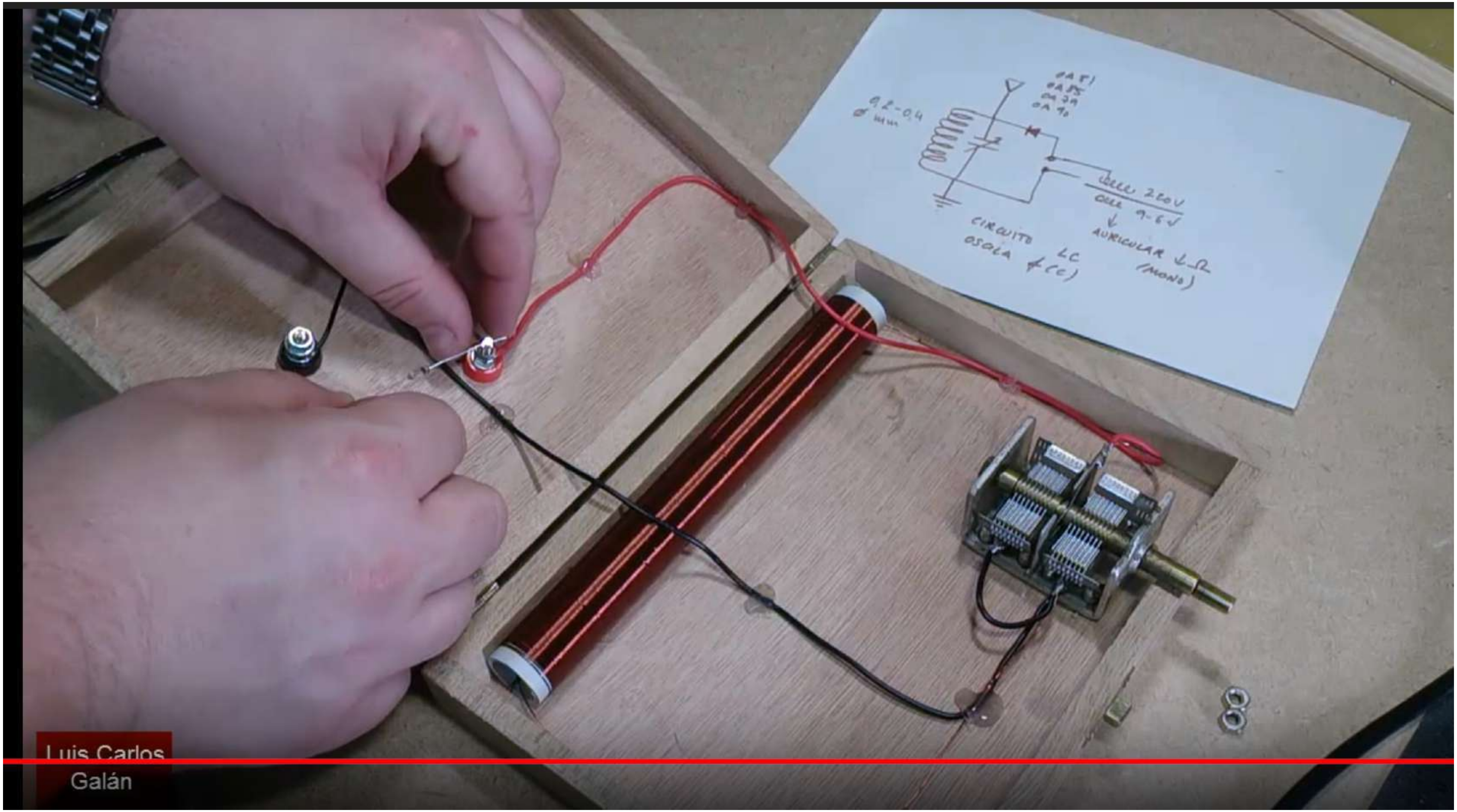

CIRCUITO LC
OSCILA
AURICULAR
(MONO)
Luis Carlos
Galán

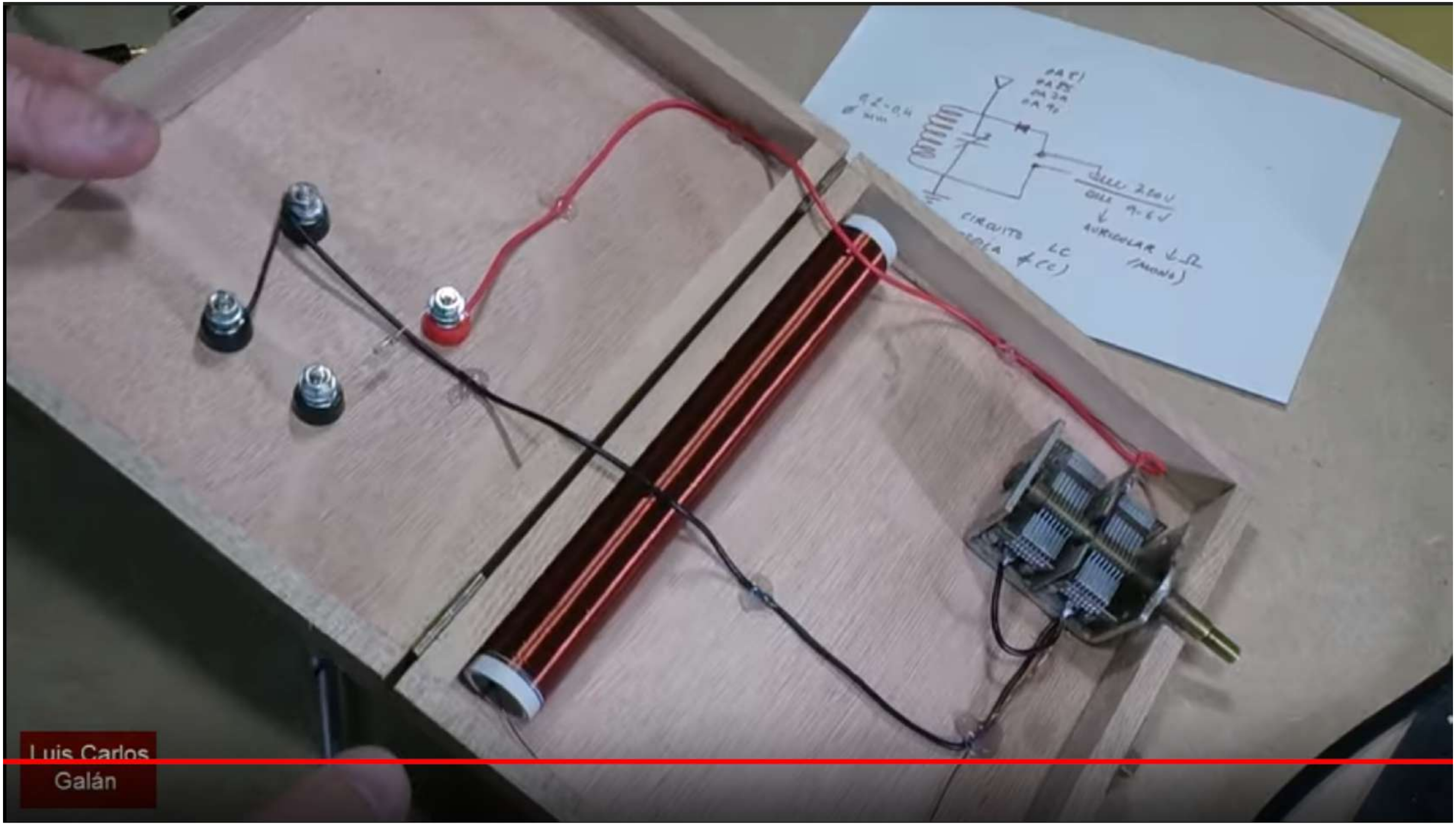

TIERRA
Luis Carlos
Galán

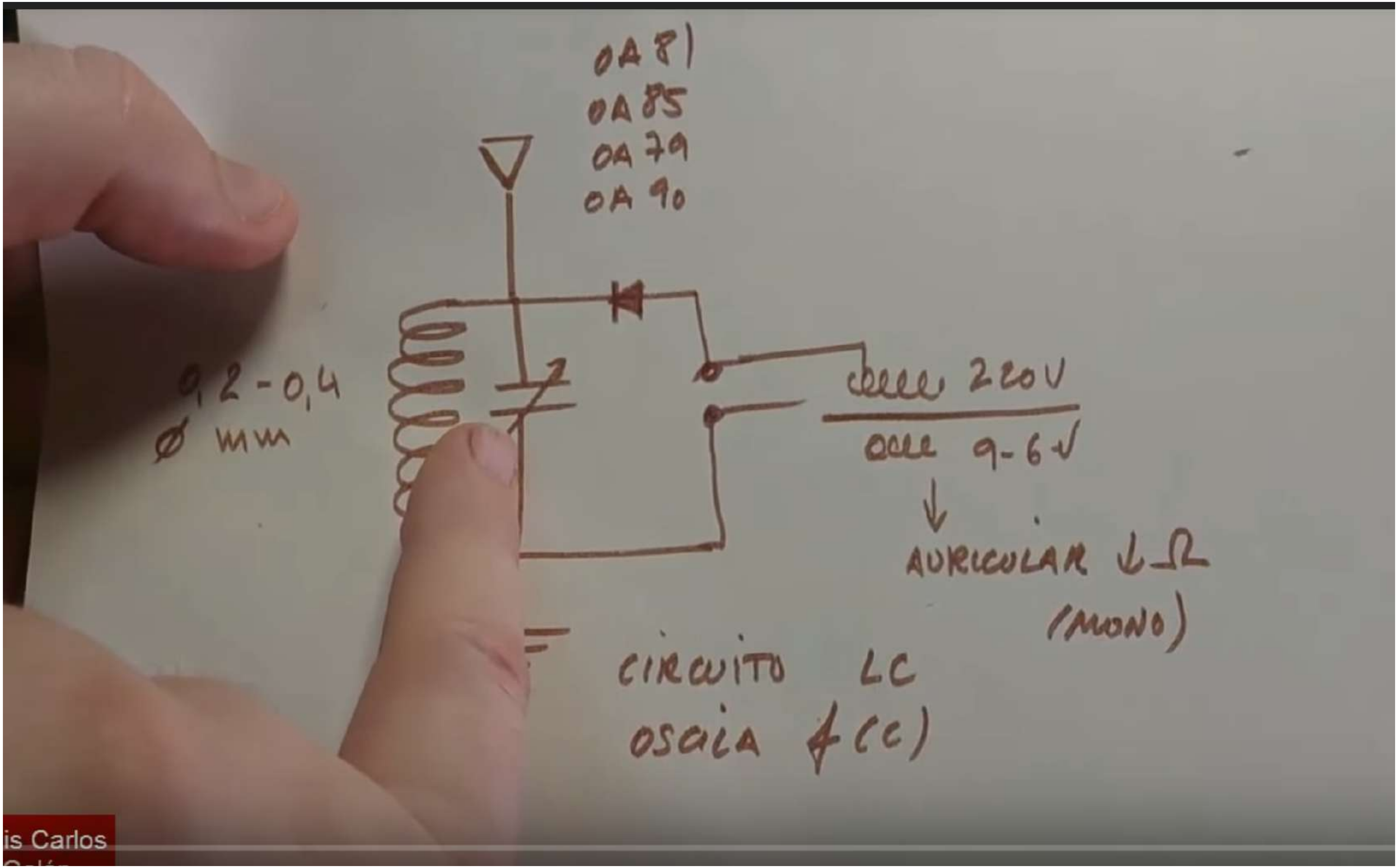

AURICULAR
(MONO)
CIRCUITO LC
Luis Carlos Galán


OA 85
220V
AURICULAR
CIRCUITO
LC
(MONO)
Luis Carlos Galán


OA81
OA85
OA79
OA90
0,2-0,4 mm
220V
9-6V
AURICULAR
(MONO)
CIRCUITO
OSCILA
LC
Luis Carlos Galán

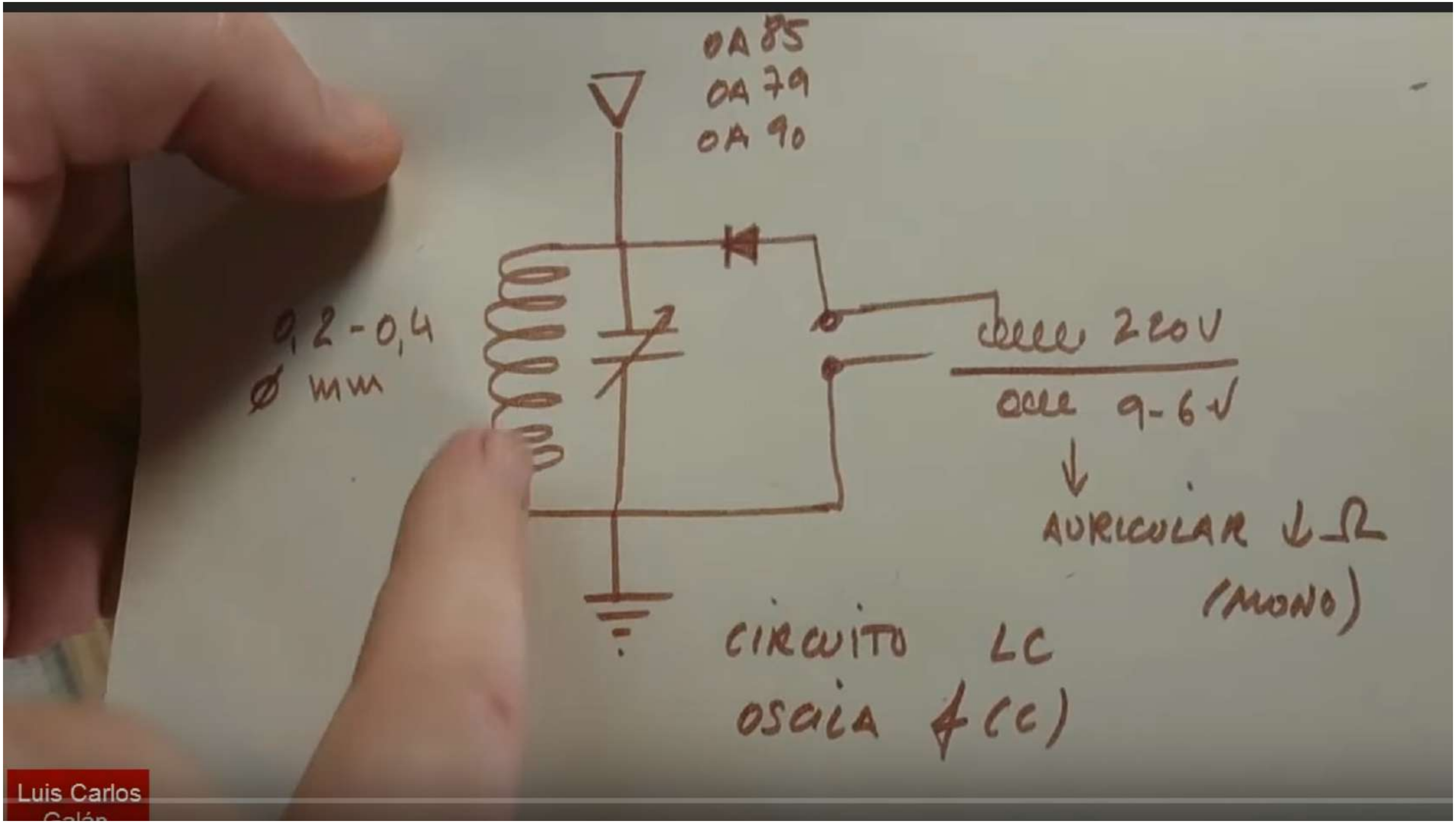

220V
AURICULAR
(MONO)
CIRCUITO
LC
Luis Carlos
Galán

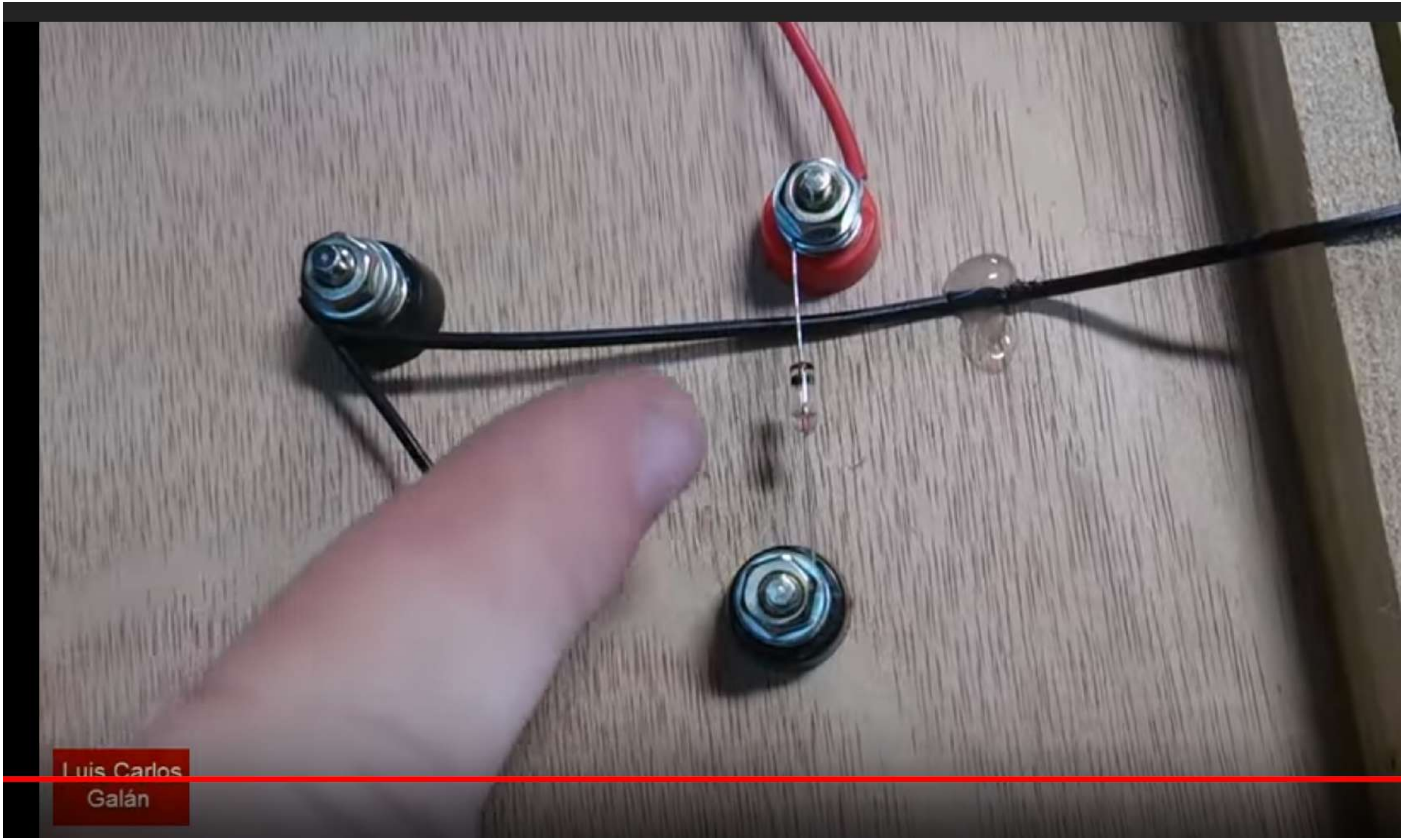

Luis Carlos
Galán

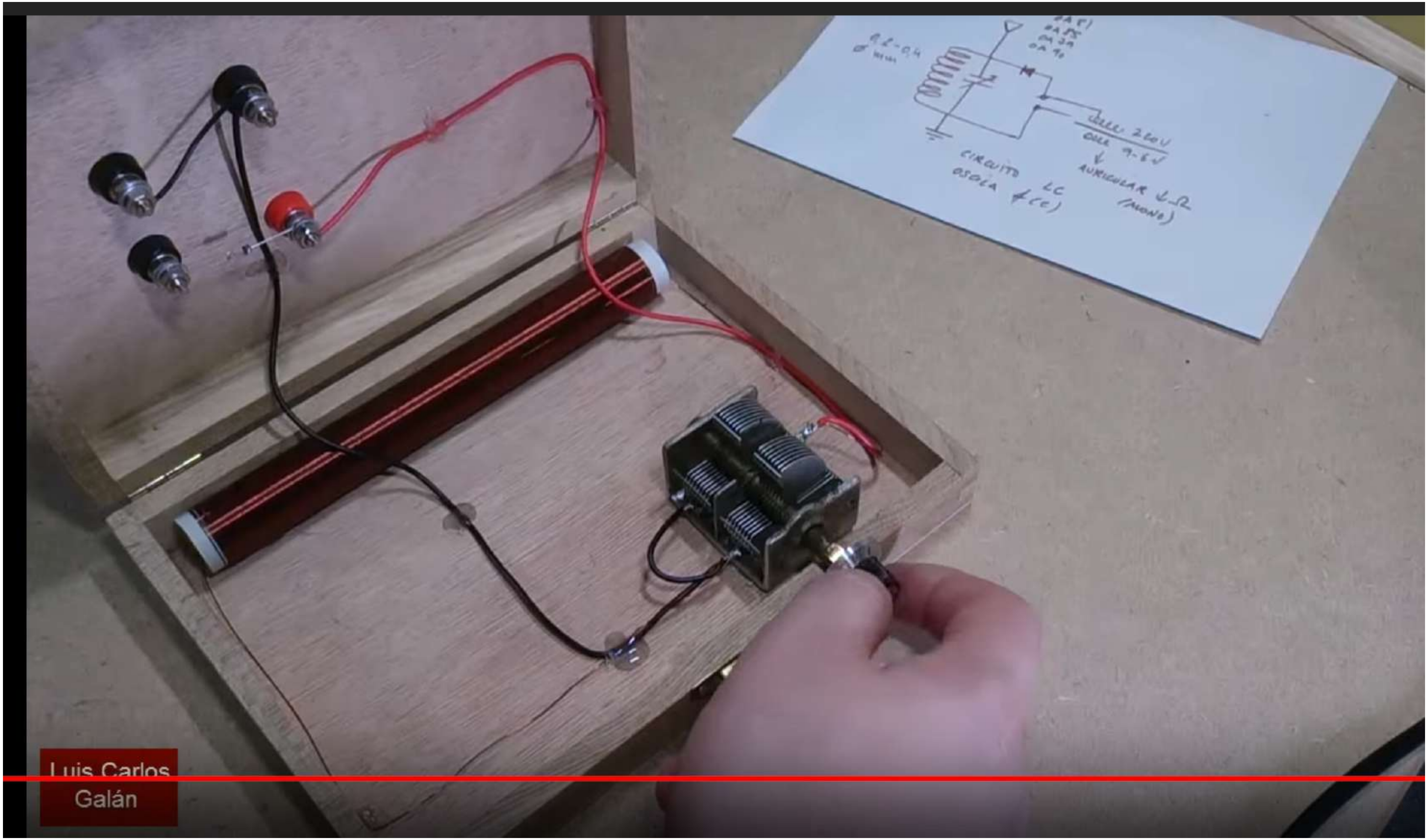


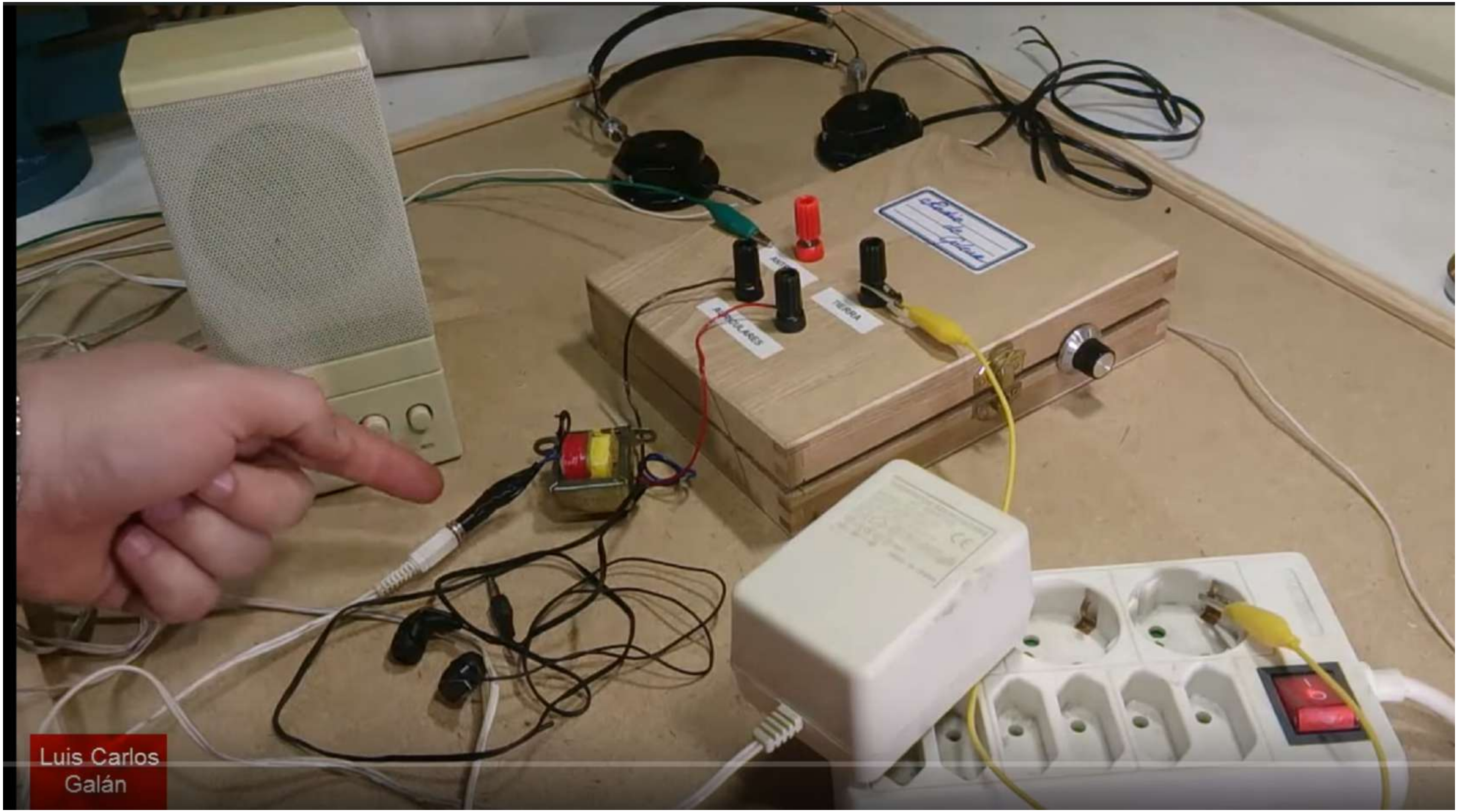
OA 81
OA 85
OA 79
OA 90
0,2 - 0,4
Ø mm
220V
9-6V
AURICULAR ↓Ω
(MONO)
CIRCUITO LC
OSCILA f(C)
is Carlos

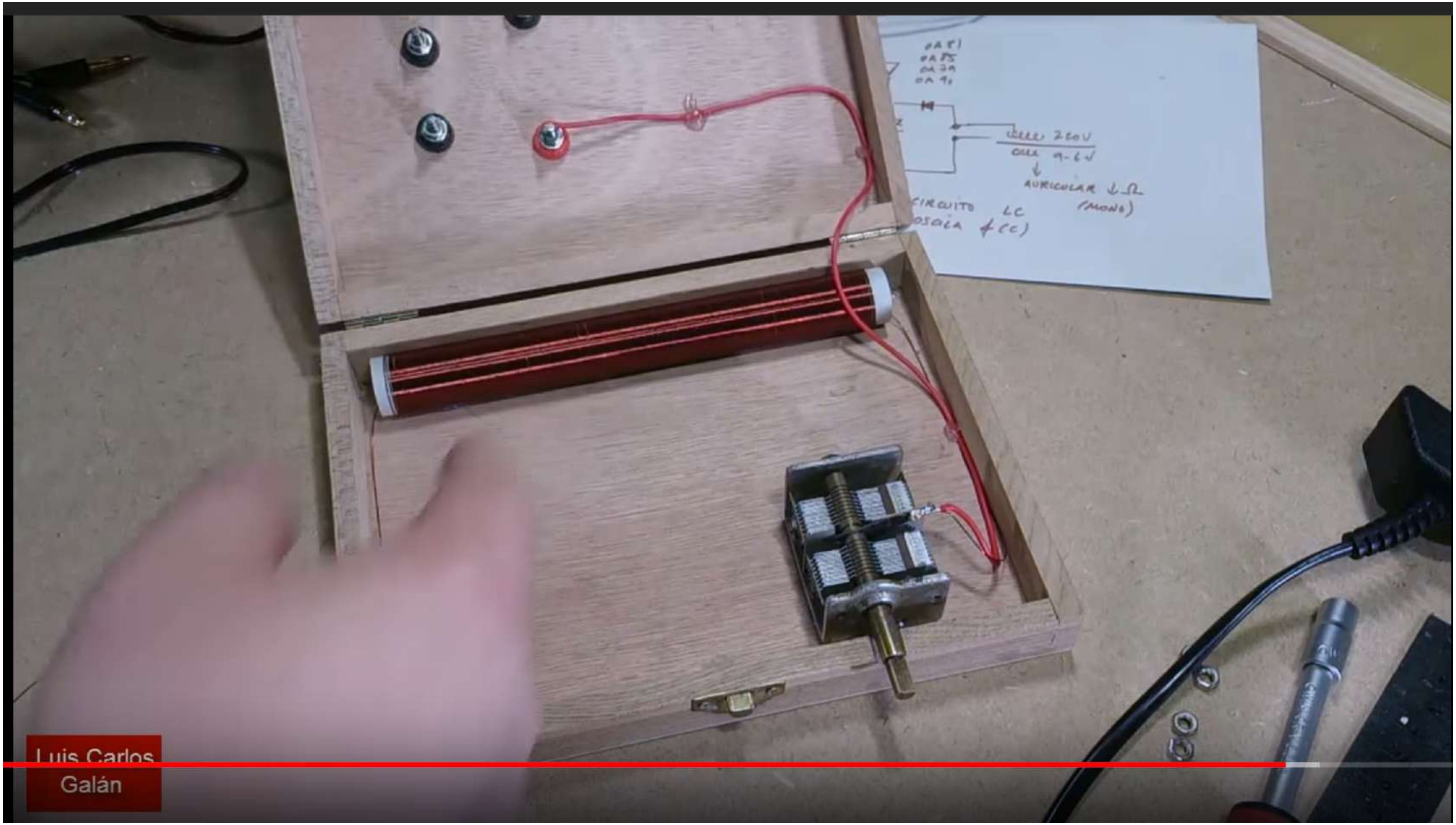

Luis Carlos
Galán

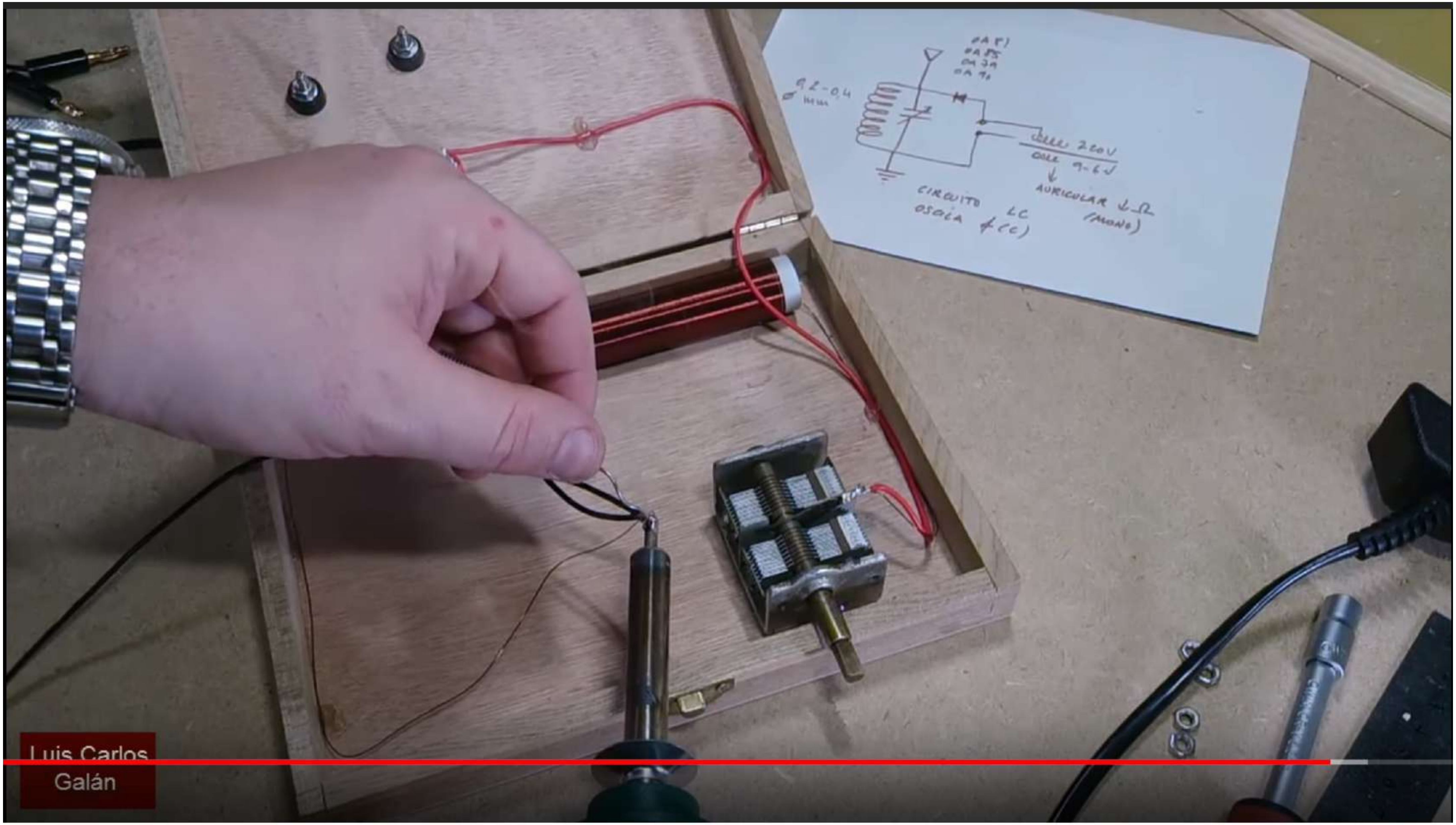

OA 85
OA 79
OA 90
0,2 - 0,4
Ø mm
220 V
9 - 6 V
AURICULAR ↓ Ω
(MONO)
CIRCUITO LC
OSCILA f(C)
Luis Carlos
Galán

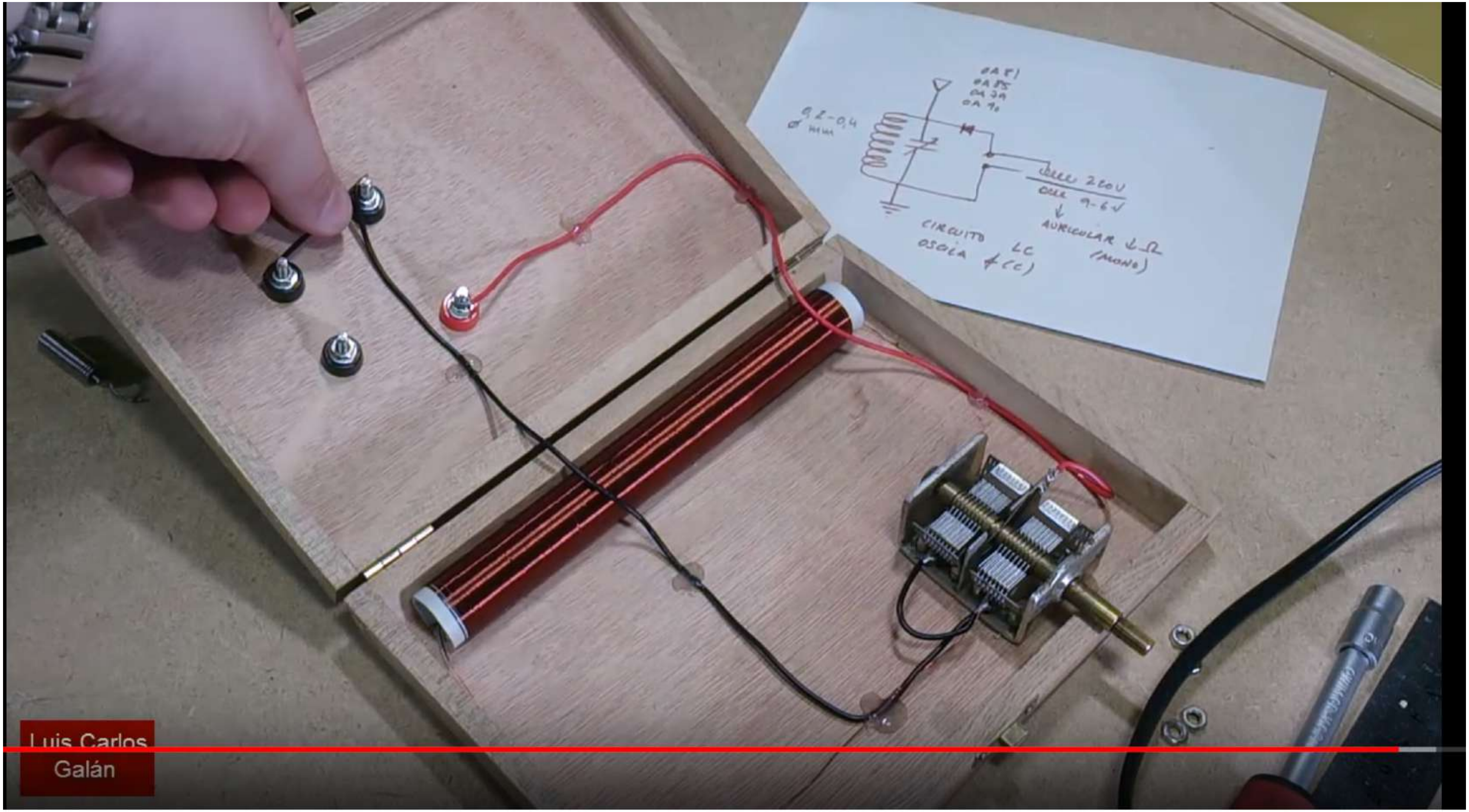

Luis Carlos
Galán


CIRCUITO
AURICULAR
(MONO)
Luis Carlos Galán

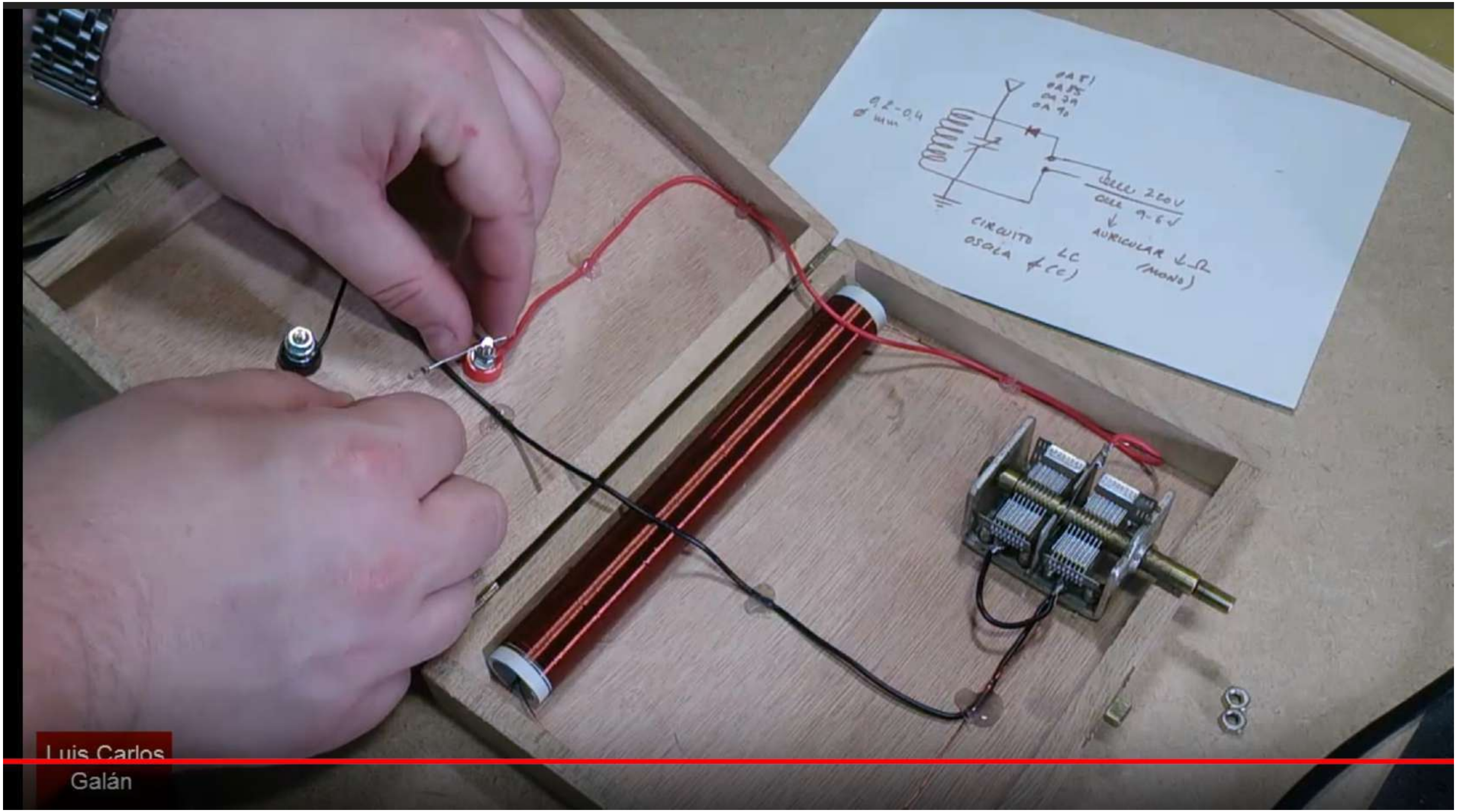

TIERRA
Luis Carlos
Galán

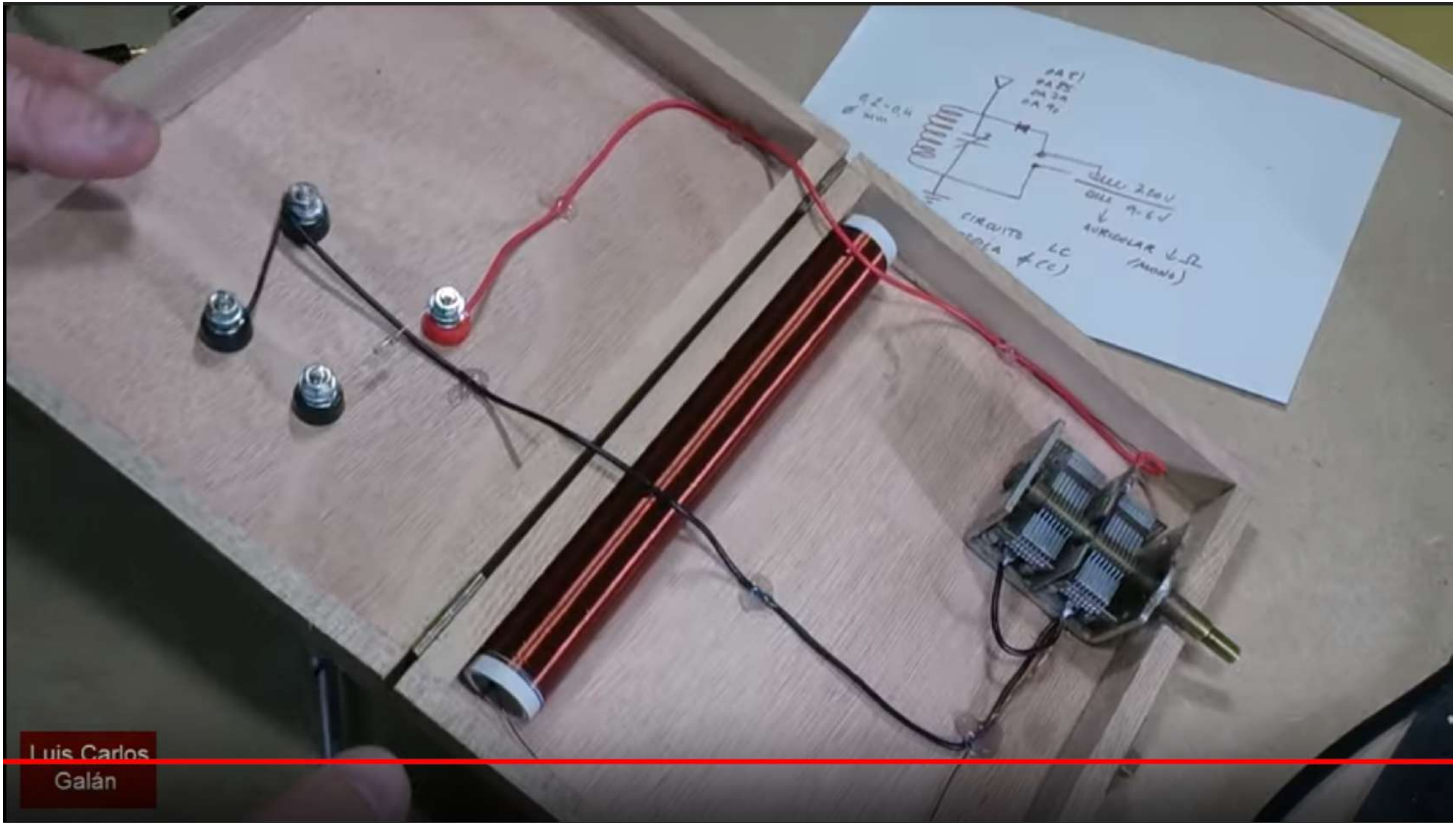

OA81
OA85
220V
AURICULAR
(MONO)
CIRCUITO LC
OSCILA f(C)
Luis Carlos Galán

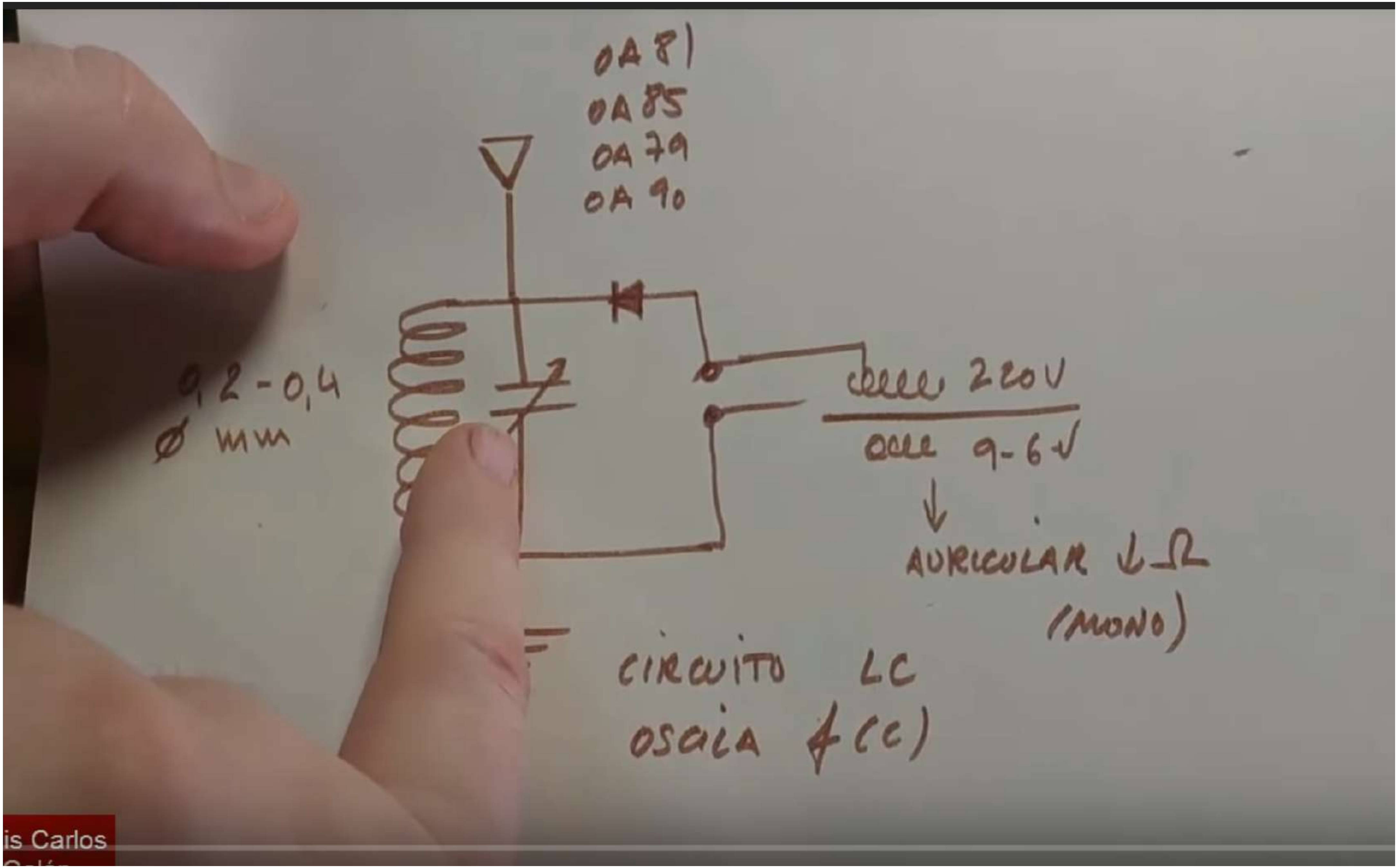

220V
AURICULAR
(MONO)
CIRCUITO
LC
Luis Carlos Galán



CIRCUITO
OSCILA
LC
220V
9-6V
AURICULAR
(MONO)
Luis Carlos Galán


CIRCUITO
AURICULAR
(MONO)
Luis Carlos
Galán


CIRCUITO
LC
AURICULAR
Luis Carlos
Galán


OA 81
OA 85
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0,2 - 0,4
Ø mm
220V
9-6V
AURICULAR ↓Ω
(MONO)
CIRCUITO LC
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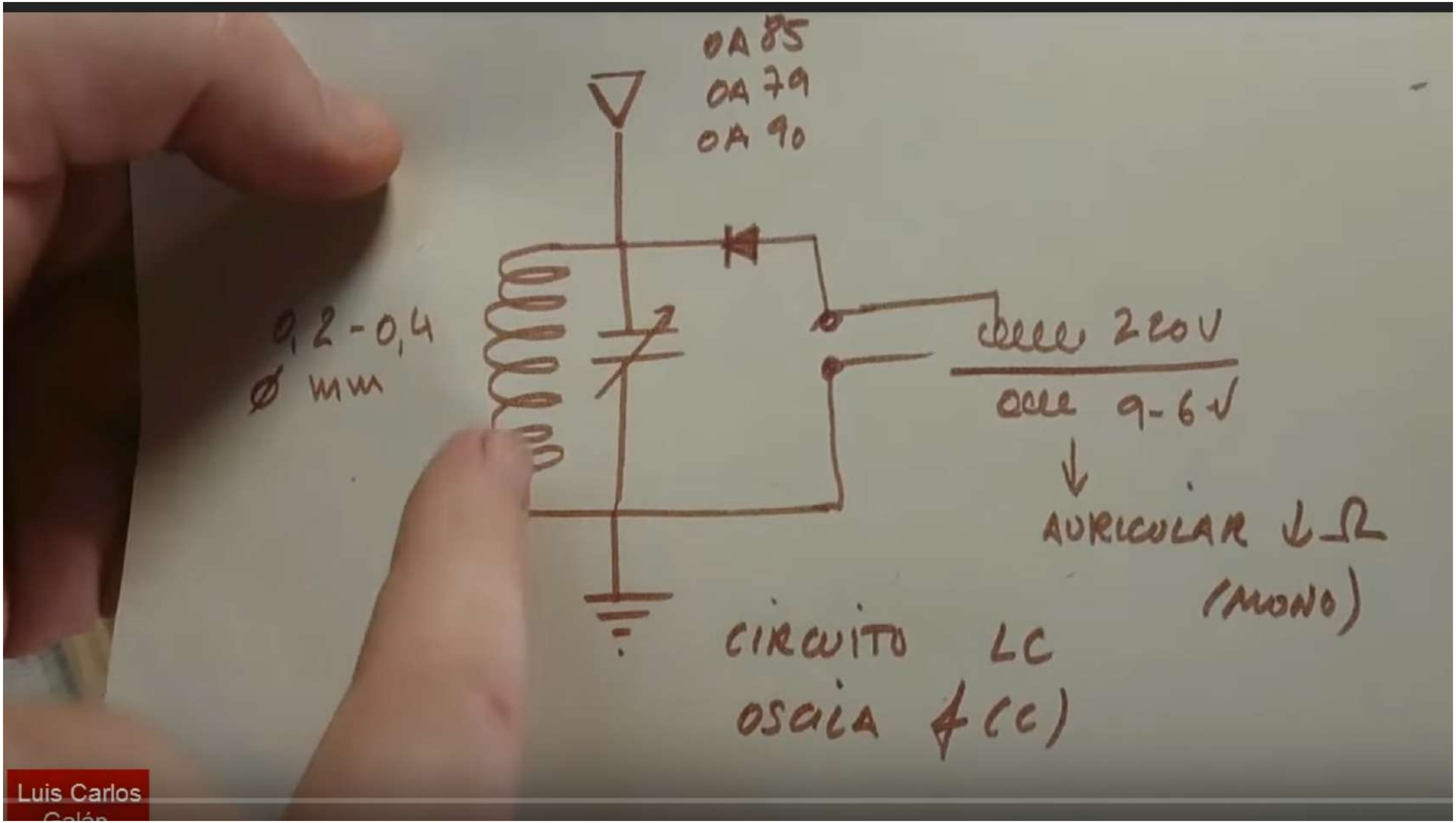
is Carlos


Luis Carlos
Galán


OA 85
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0,2 - 0,4
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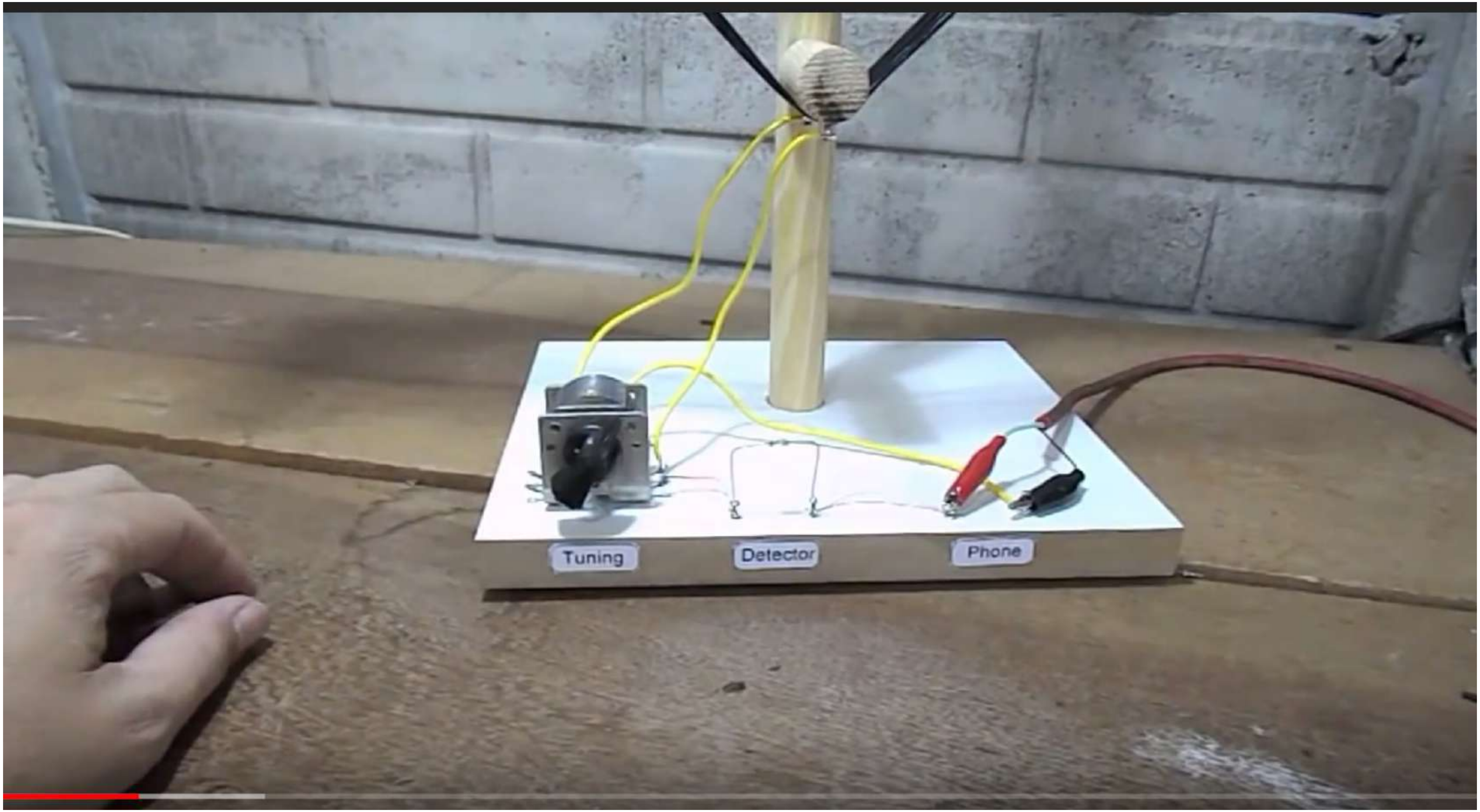
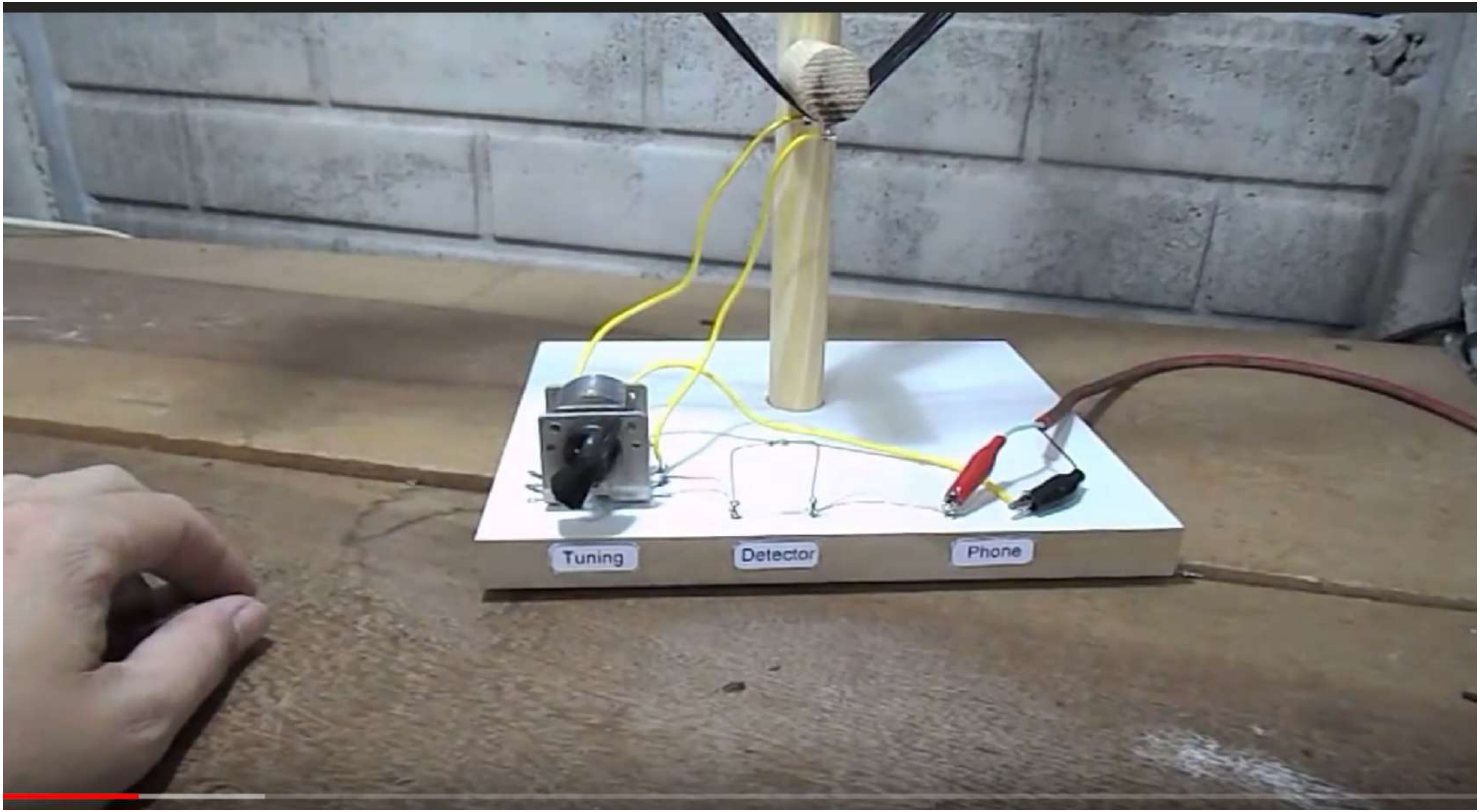
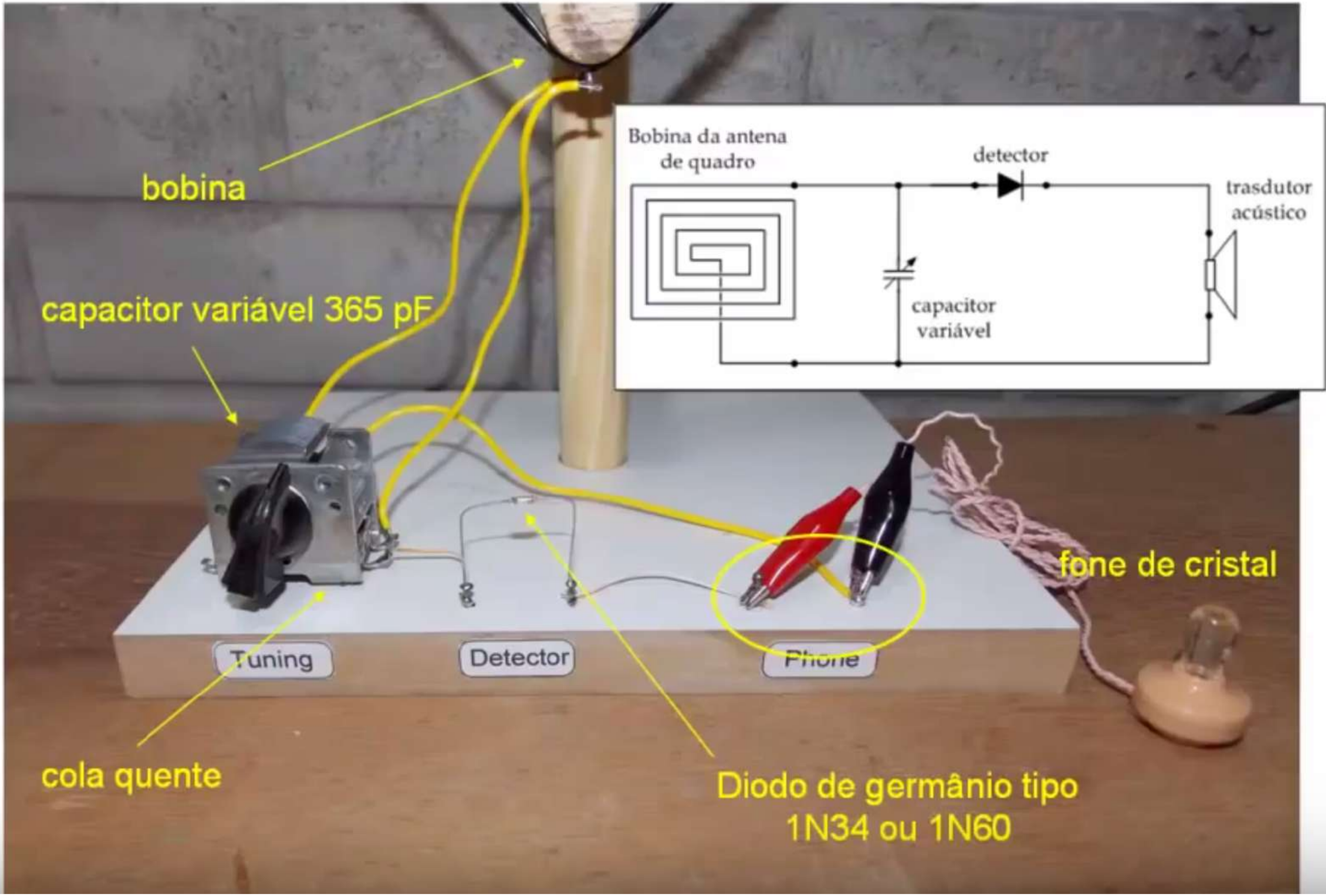
220 V
9 - 6 V
AURICULAR ↓ Ω
(MONO)
CIRCUITO LC
OSCILA f (C)
Luis Carlos


Luis Carlos
Galán

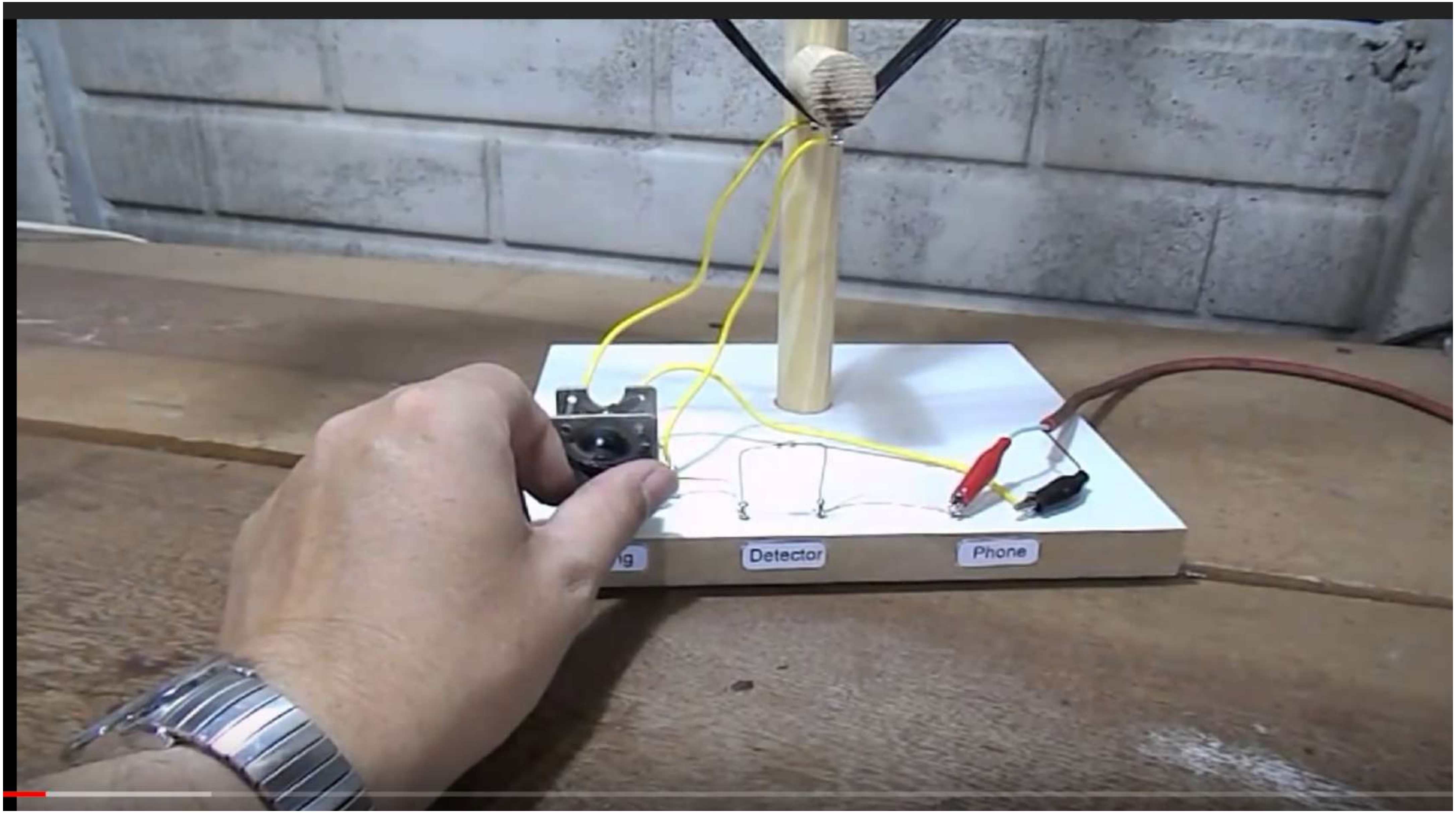

Luis Carlos
Galán

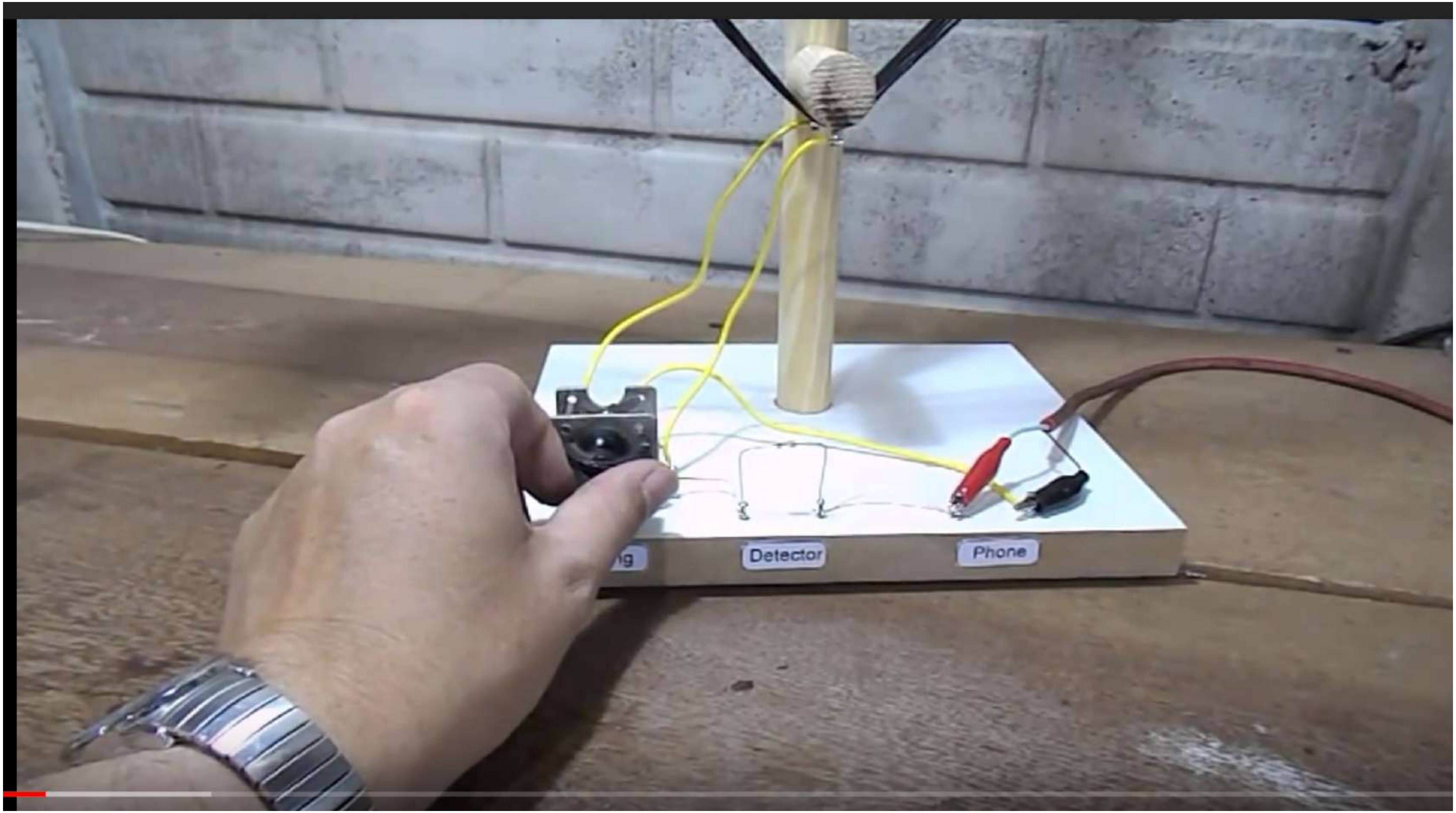

Tuning
Detector
Phone

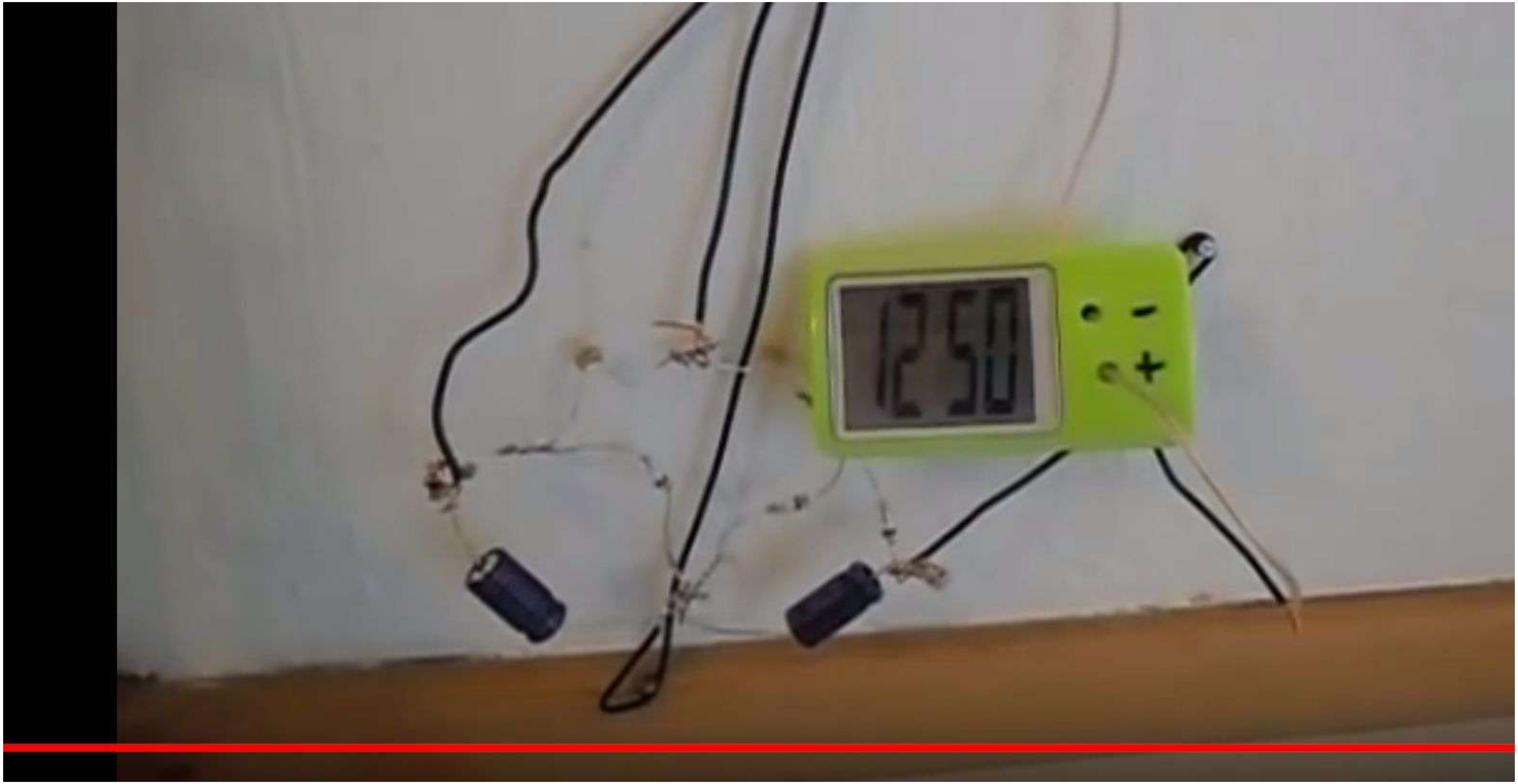

Tuning
Detector
Phone



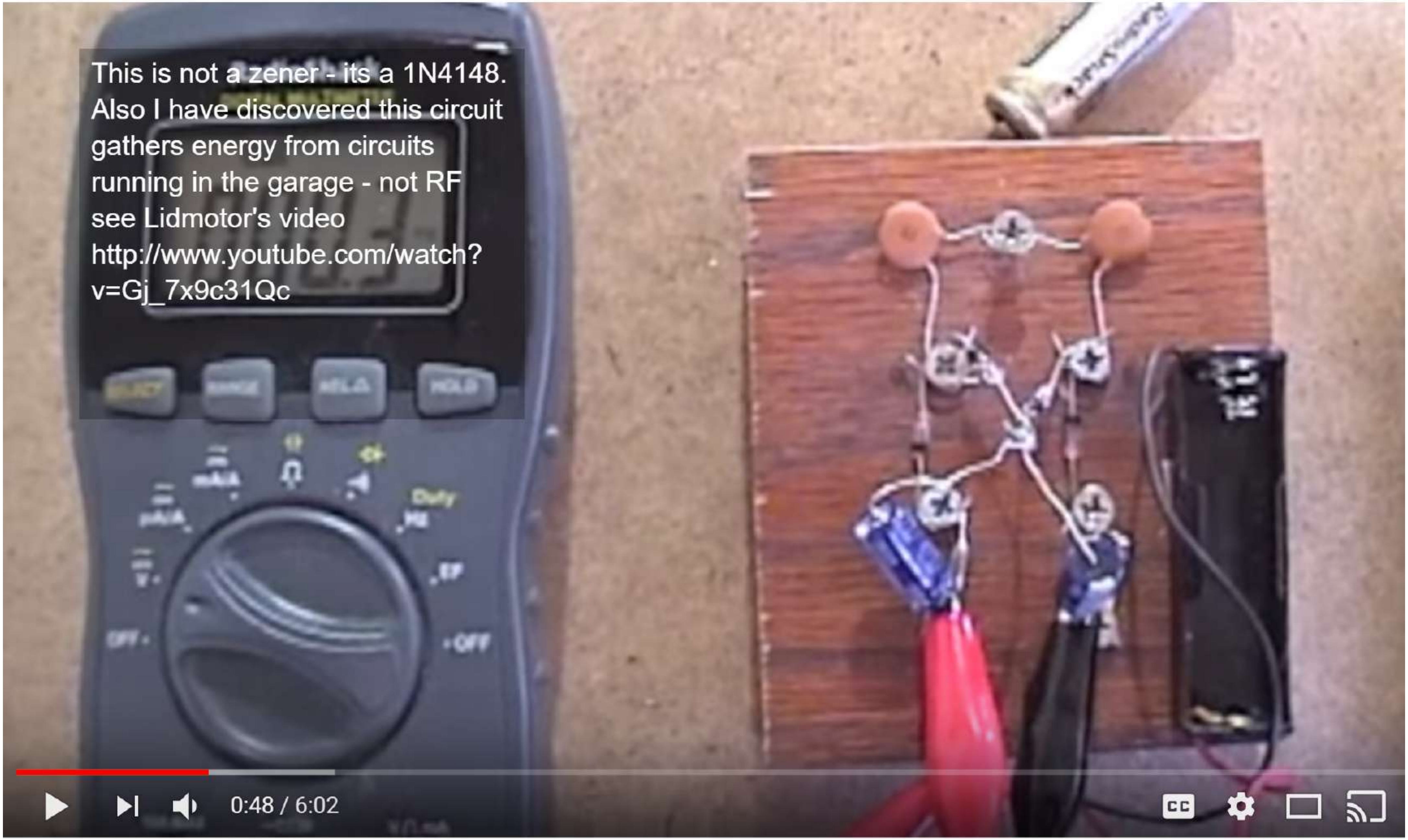
bobina
capacitor variável 365 pF
cola quente
Tuning
Detector
Phone
Diodo de germânio tipo
1N34 ou 1N60
fone de cristal
Bobina da antena
de quadro
detector
trasdutor
acústico
capacitor
variável


Detector
Phone


Detector
Phone


12 50


This is not a zener - its a 1N4148.
Also I have discovered this circuit
gathers energy from circuits
running in the garage - not RF
see Lidmotor's video
http://www.youtube.com/watch?
v=Gj_7x9c31Qc
0:32 / 6:02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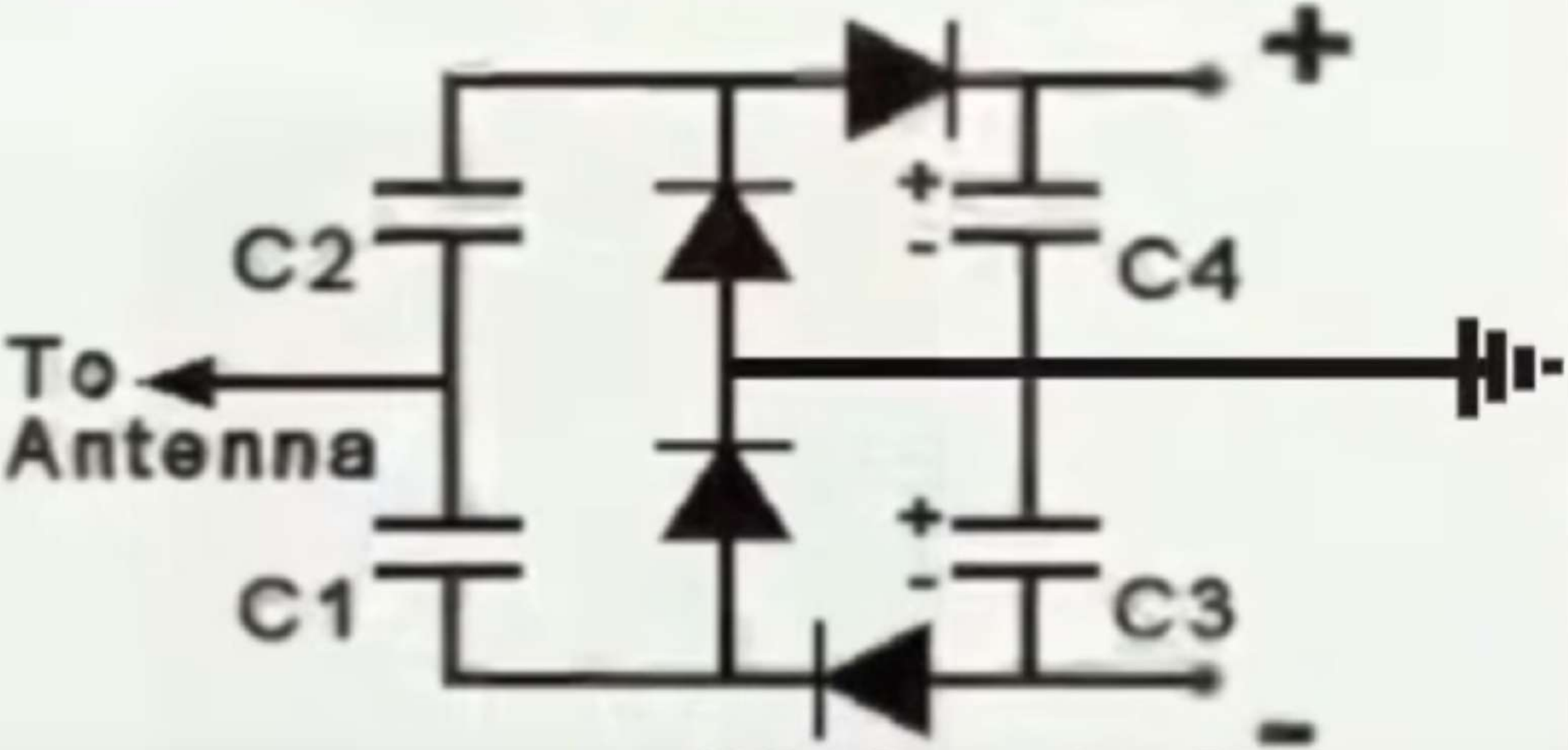
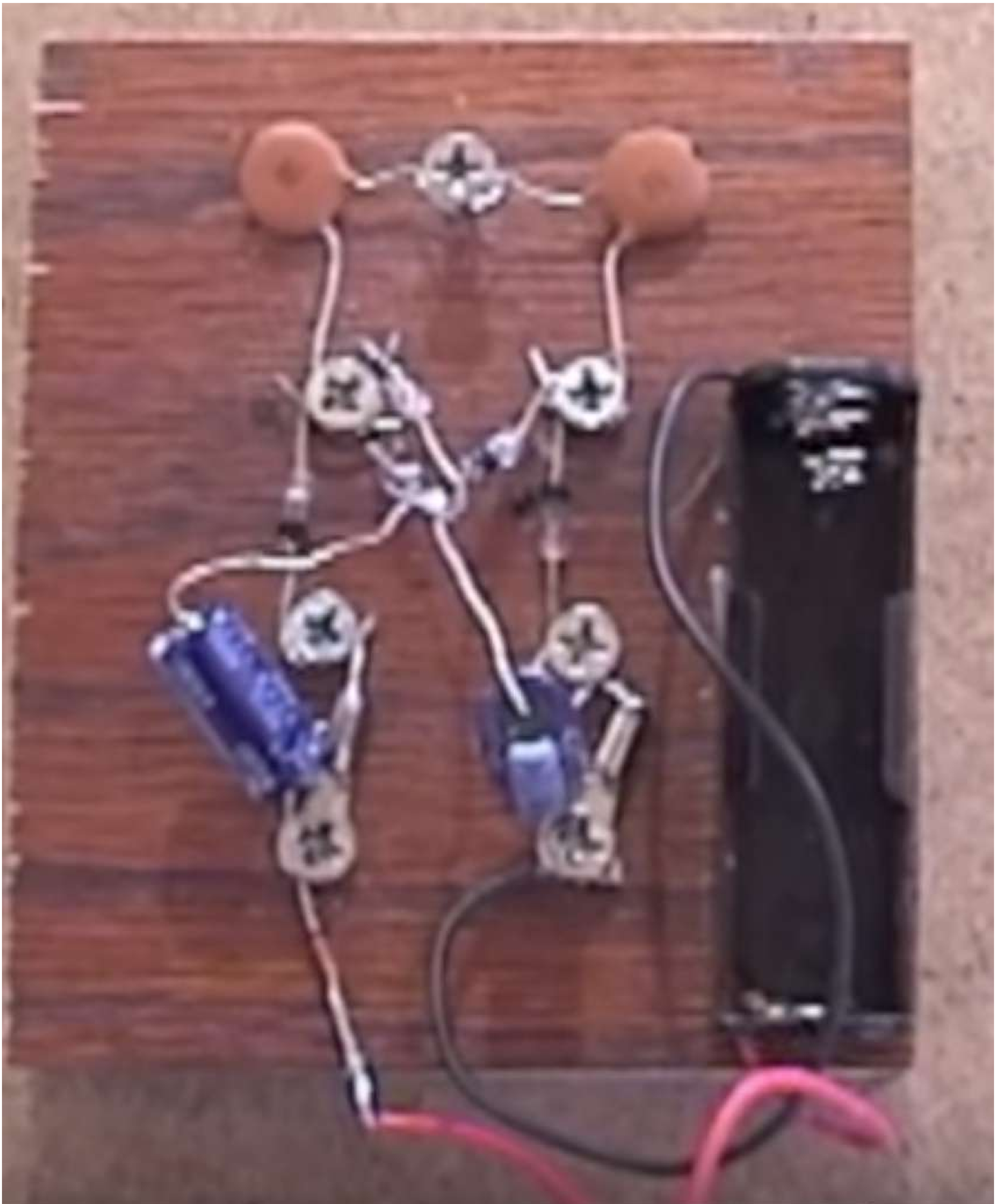
http://www.youtube.com/watch?
v=Gj_7x9c31Qc
0:48 / 6:02

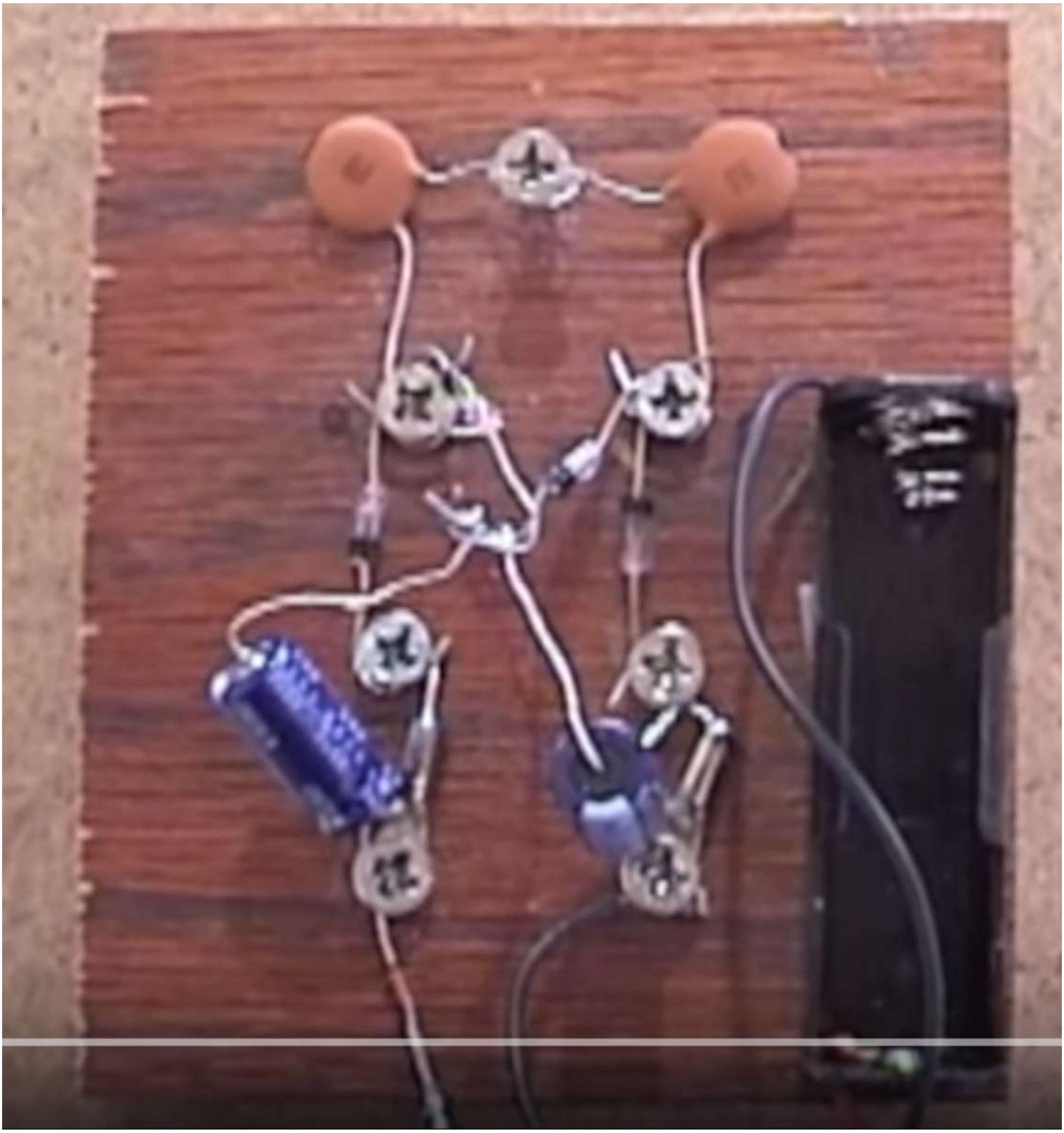

0:16 / 6:02

Energy from RF signals



1N34 Germanium Diodes,
100uf 50 v Electrolytic Caps
0.2 uf Ceramic Caps, 1- 3 volts



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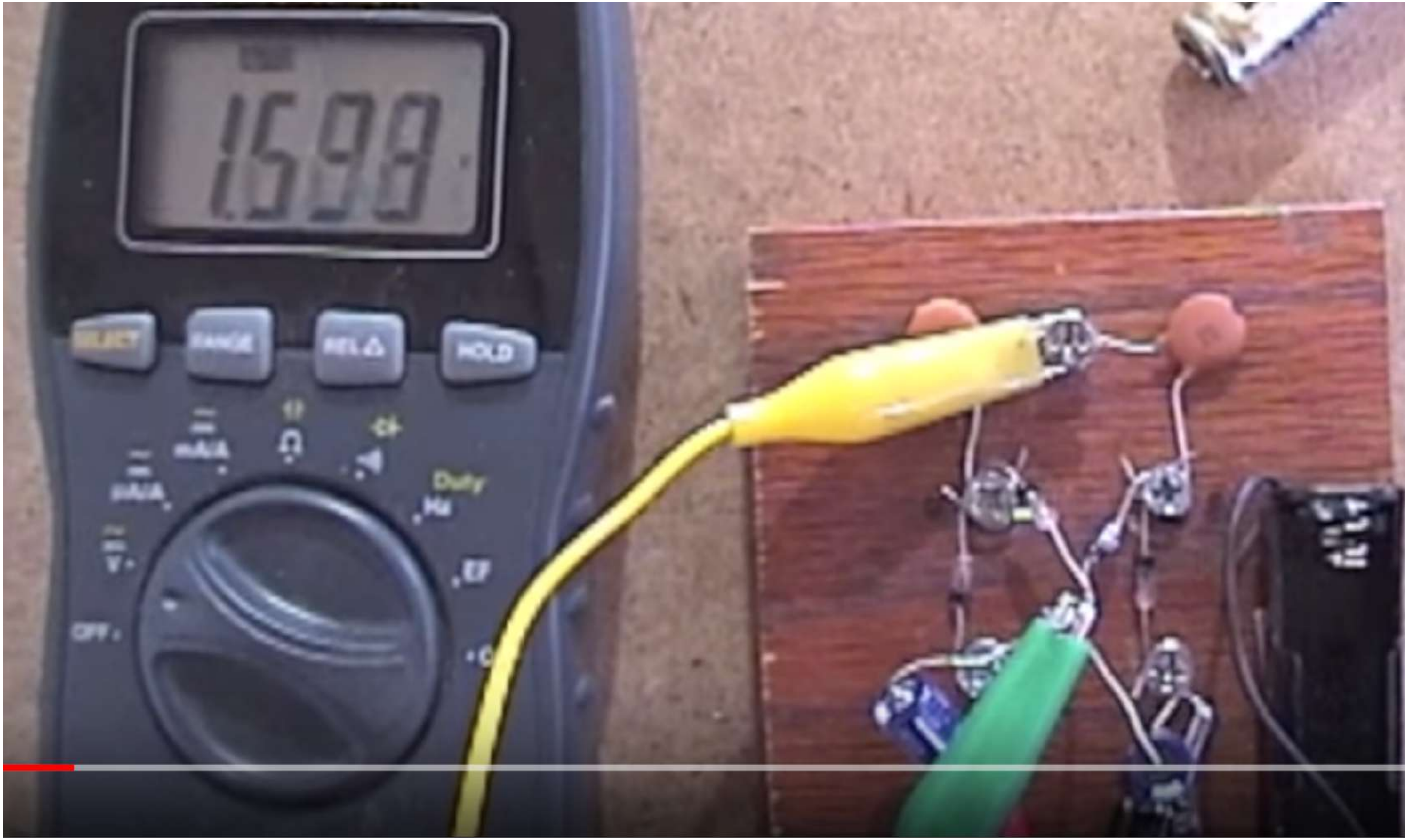
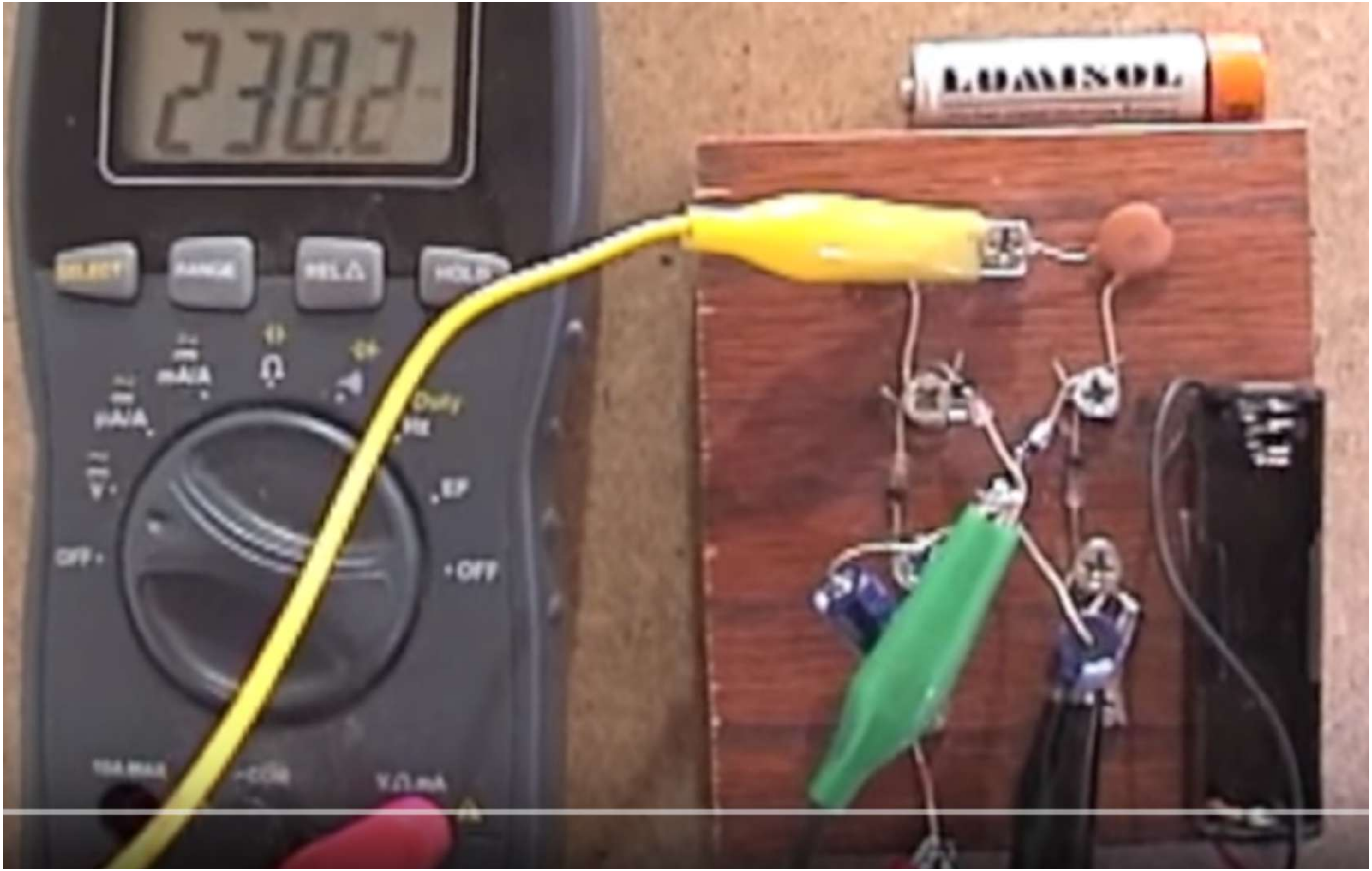
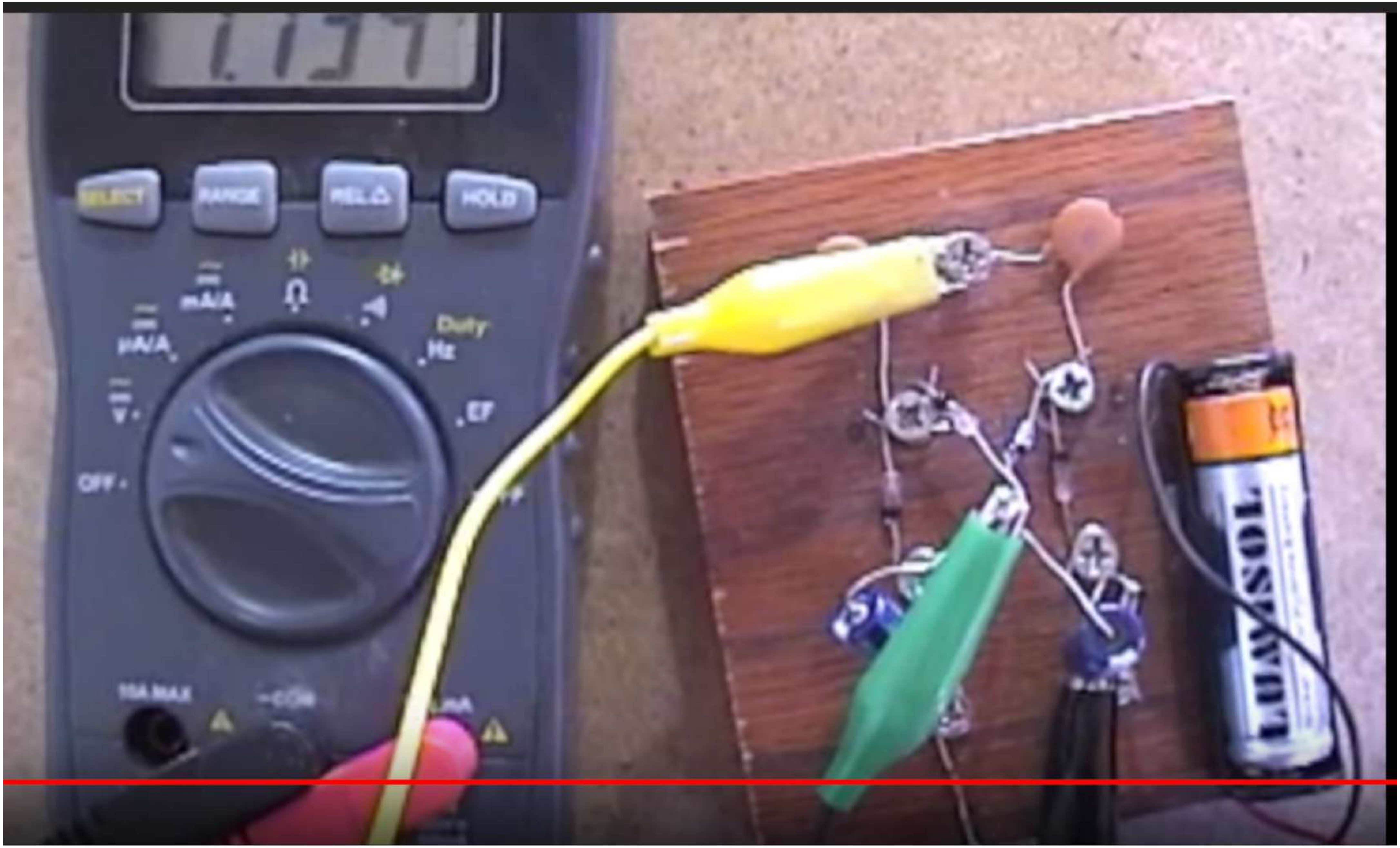
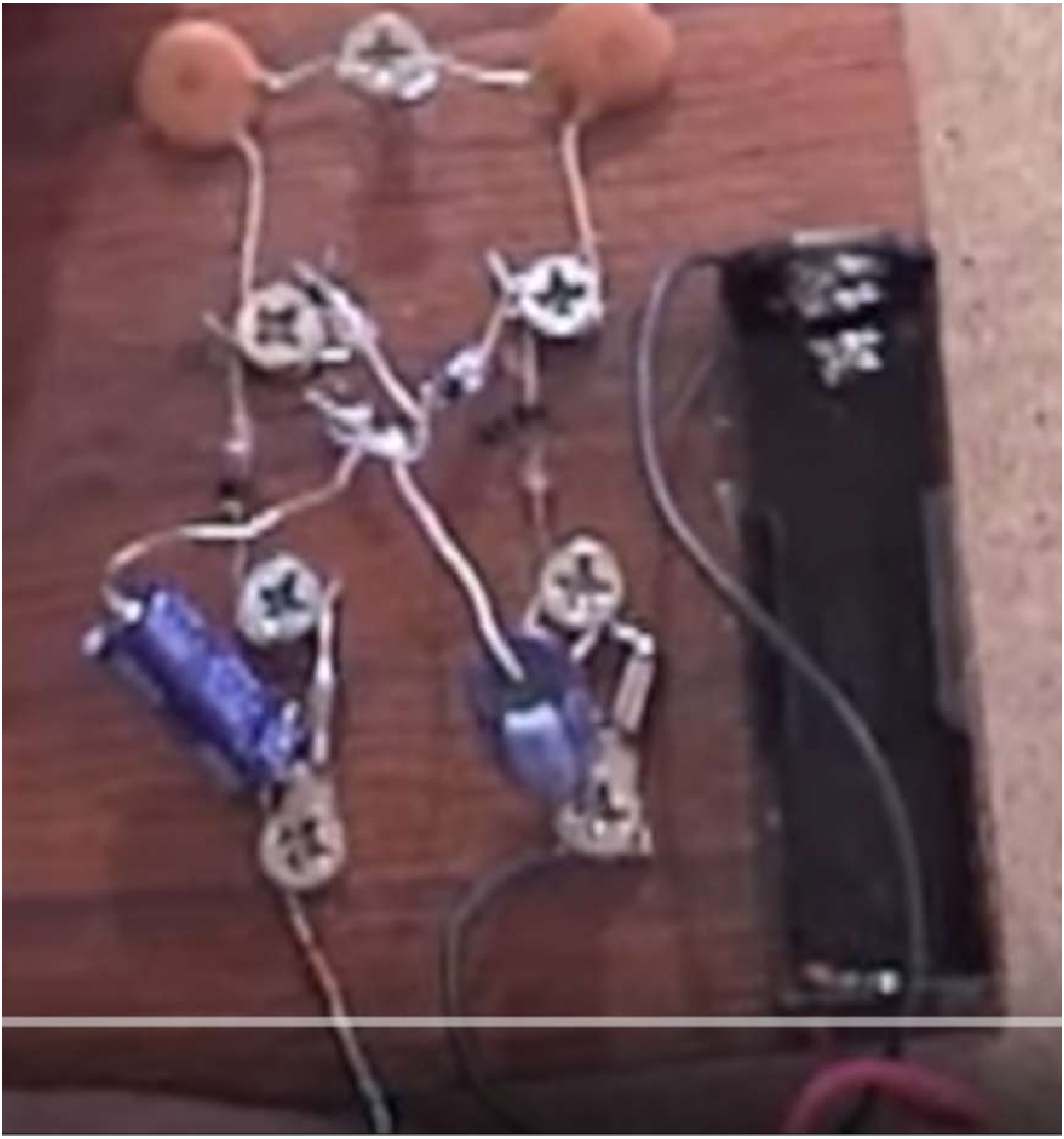
see Lidmotor's video
http://www.youtube.com/watch?
v=Gj_7x9c31Qc
0:32 / 6:02

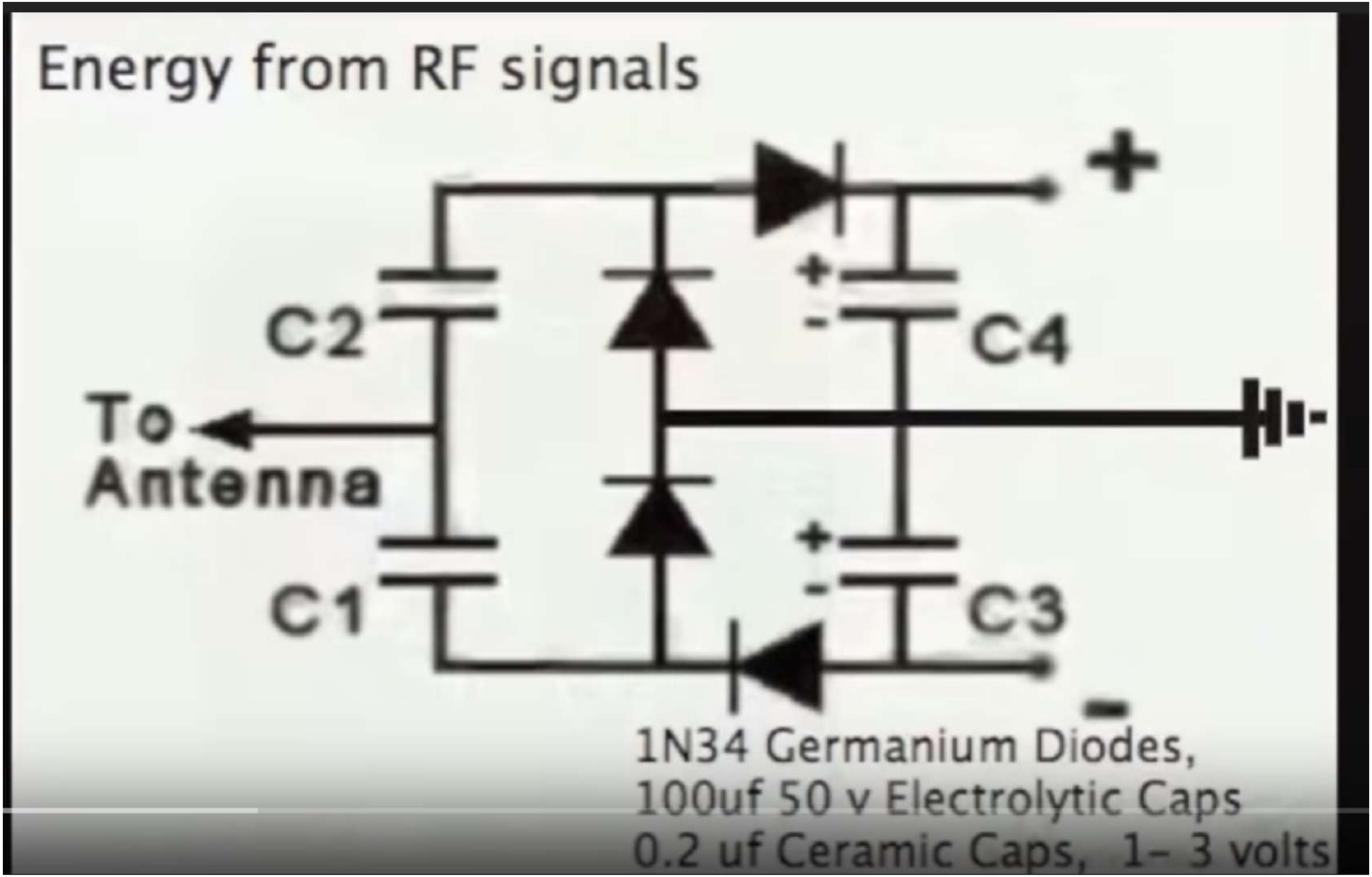

1.598
RANGE
HOLD
Duty
Hz
OFF

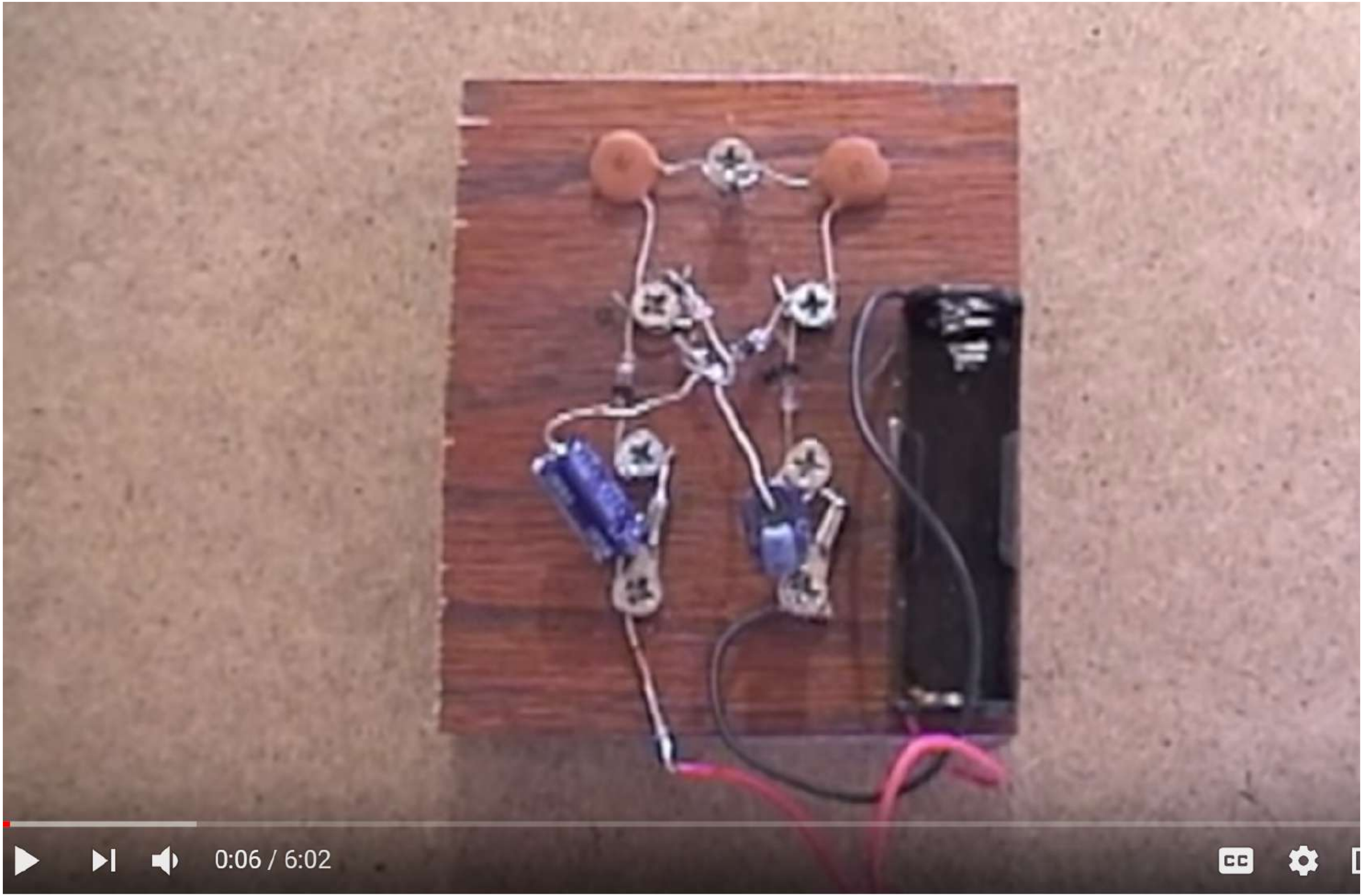

238.2
SELECT
RANGE
REL△
HOLD
mA/A
μA/A
OFF
OFF
V Ω mA
LUMINOL


SELECT
RANGE
HOLD
mA/A
µA/A
OFF
Duty
Hz

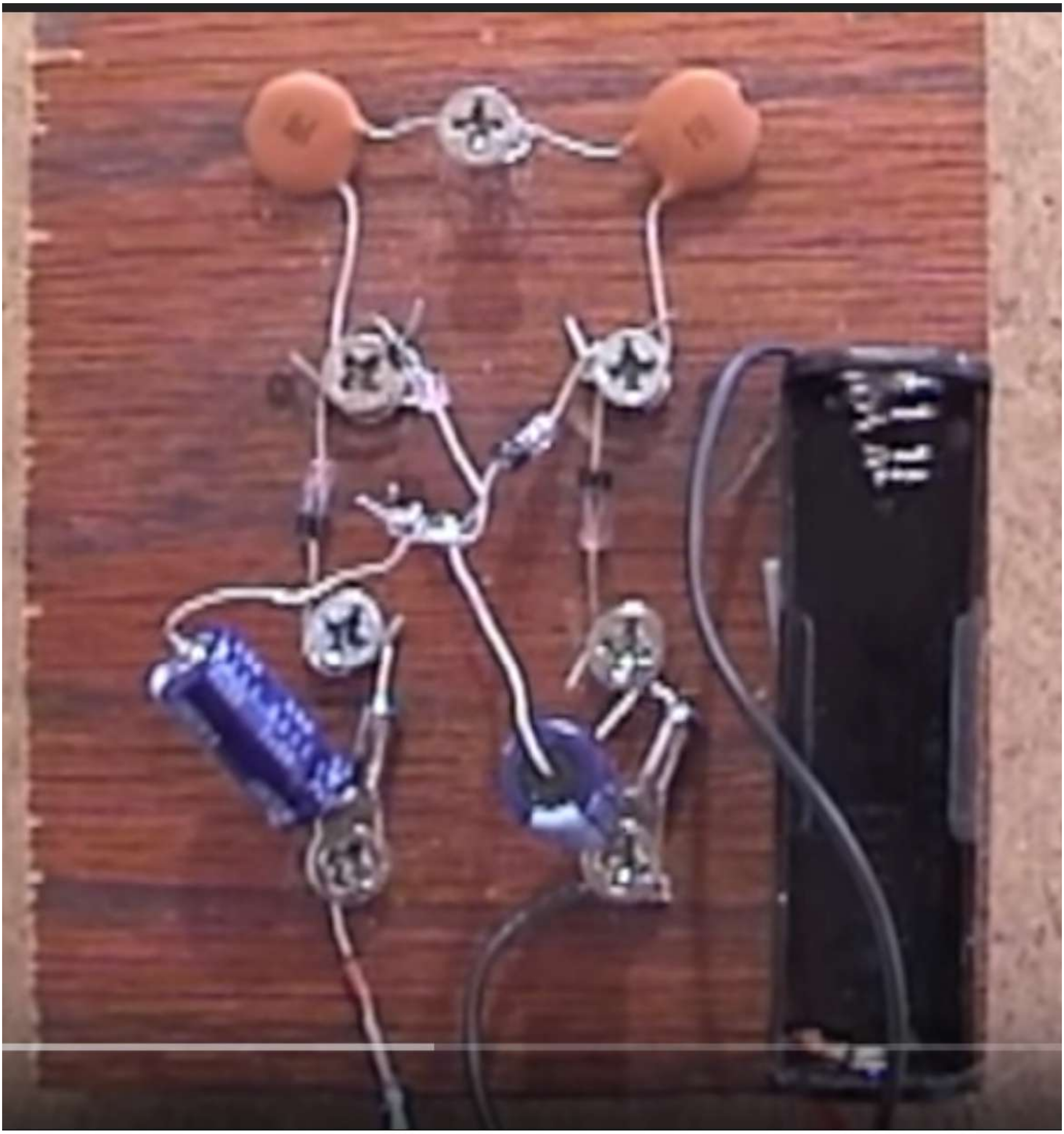

DIGITAL MULTIMETER
000.3
SELECT
RANGE
REL△
HOLD
mA/A
µA/A
Duty
Hz
OFF
OFF

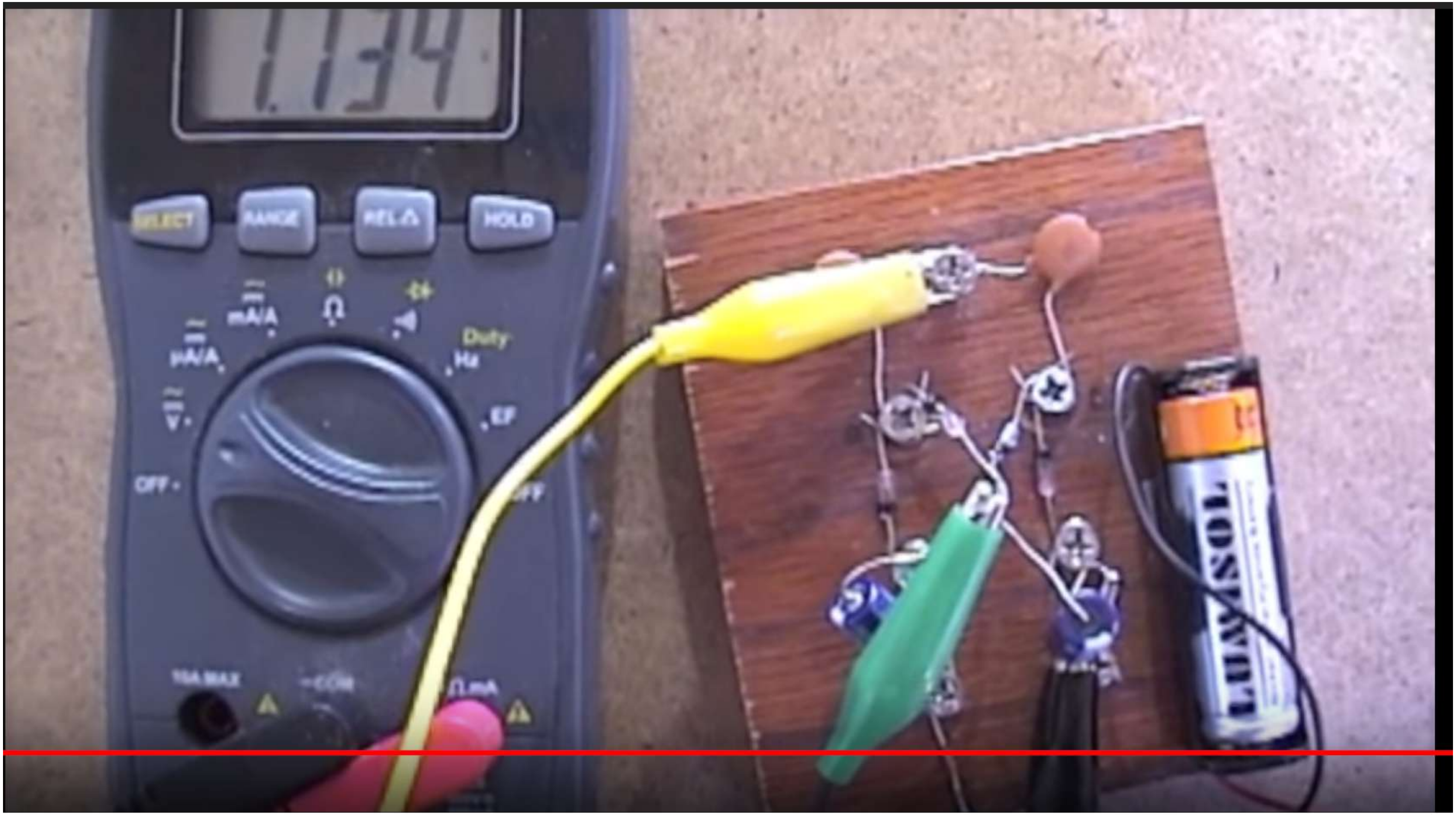


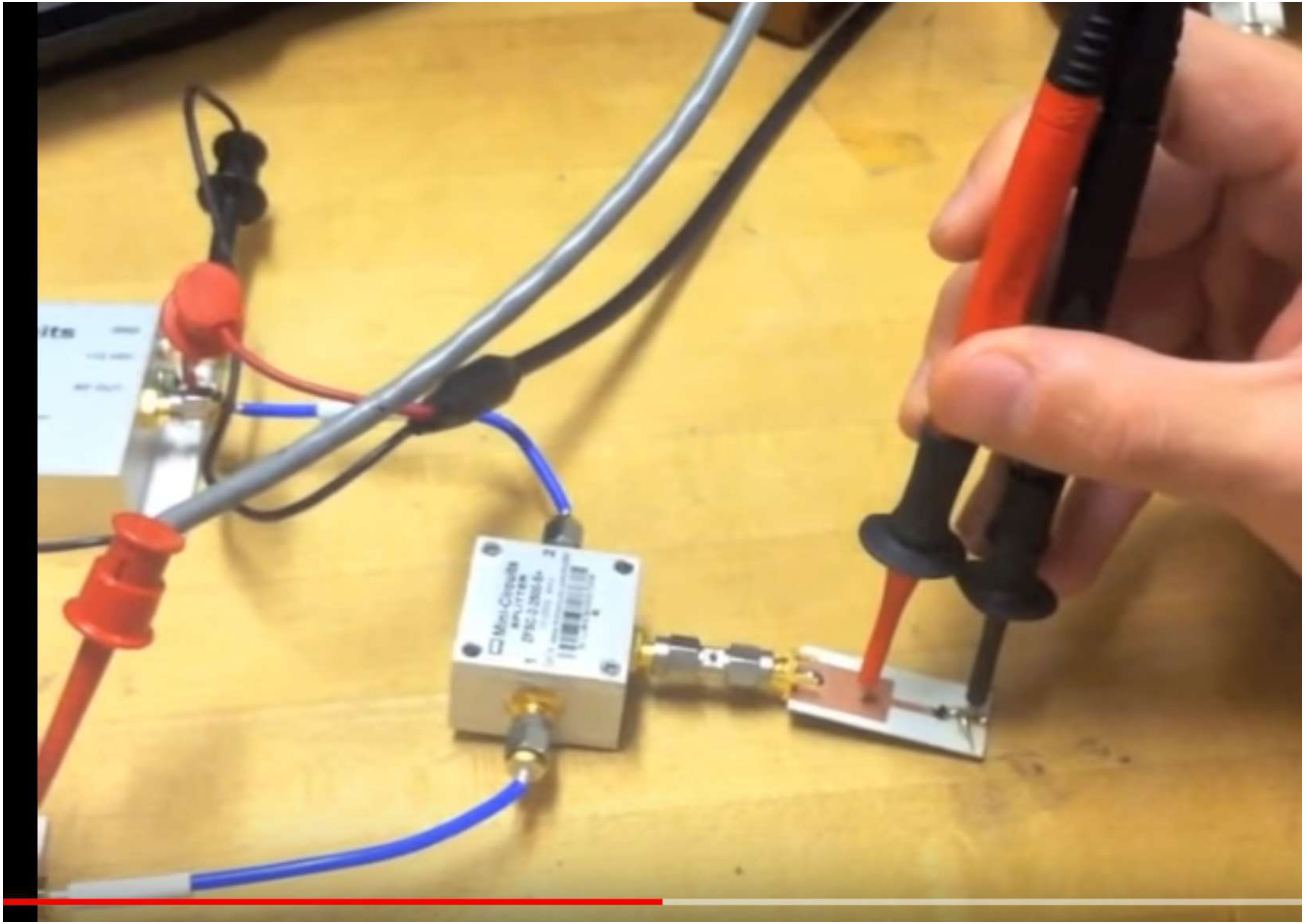

Energy from RF signals
+
C2
C4
To
Antenna
C1
C3
-
1N34 Germanium Diodes,
100uf 50 v Electrolytic Caps
0.2 uf Ceramic Caps, 1- 3 volts

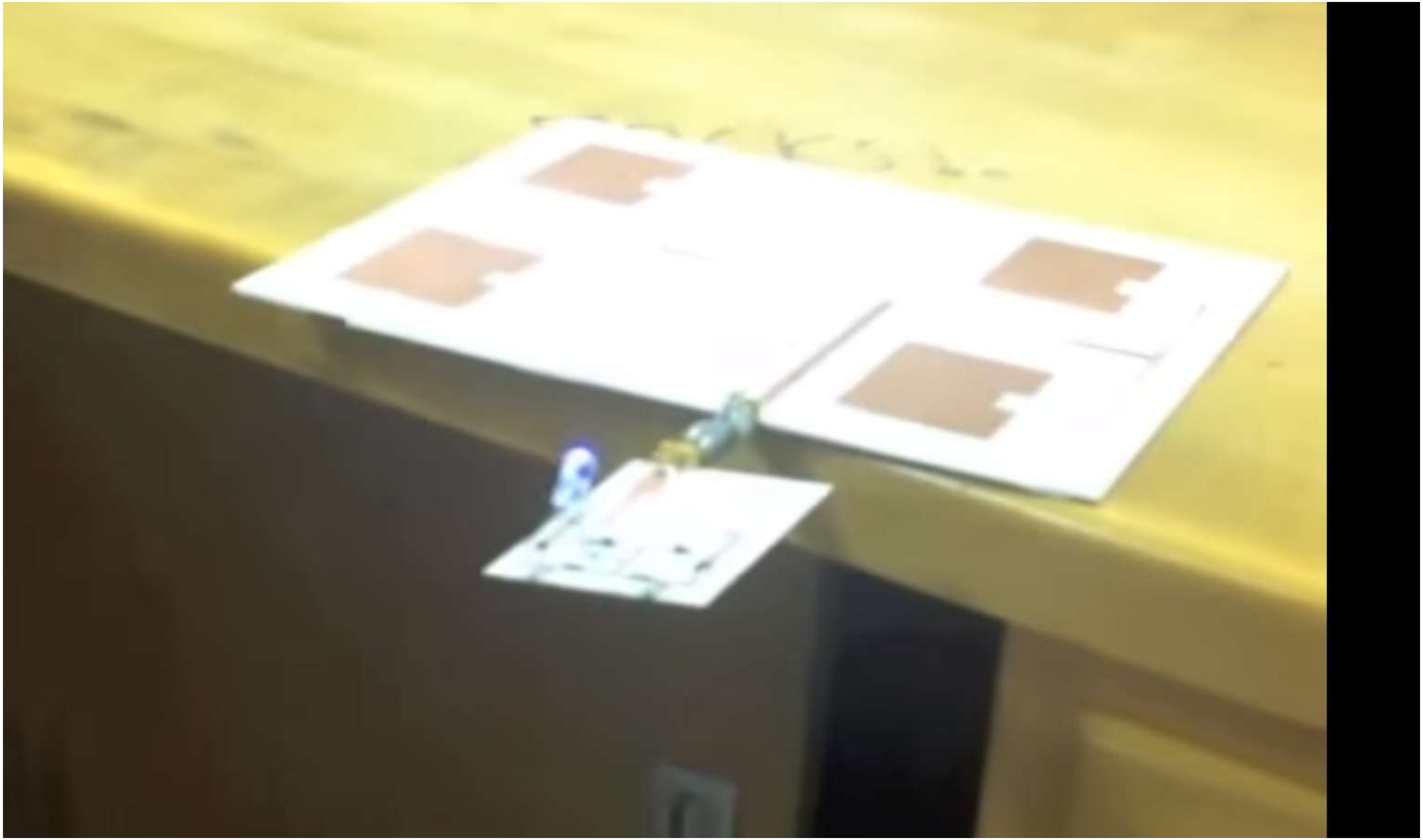

0:06 / 6:02

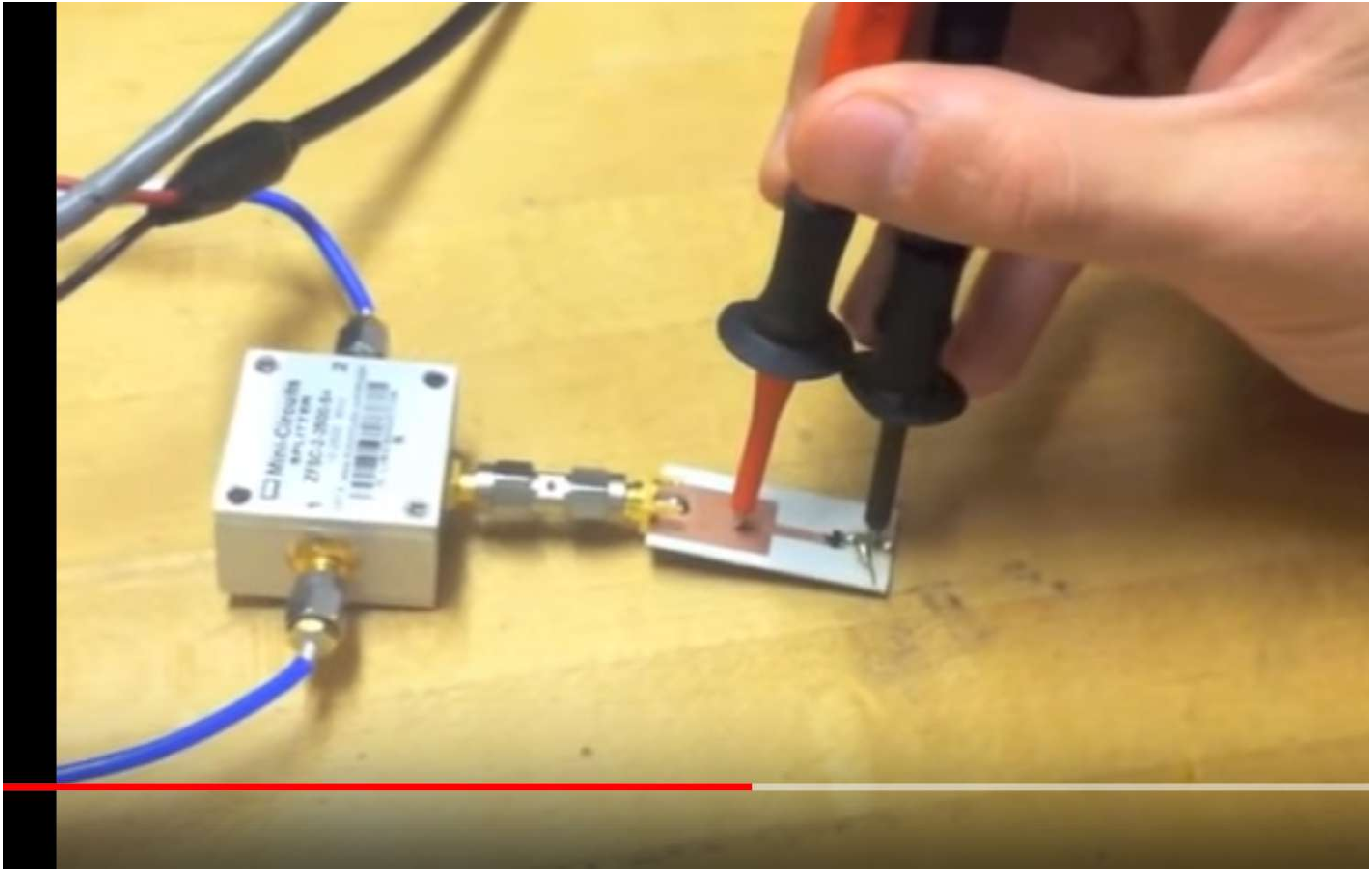

HOLD
mA/A
Duty
Hz
OFF

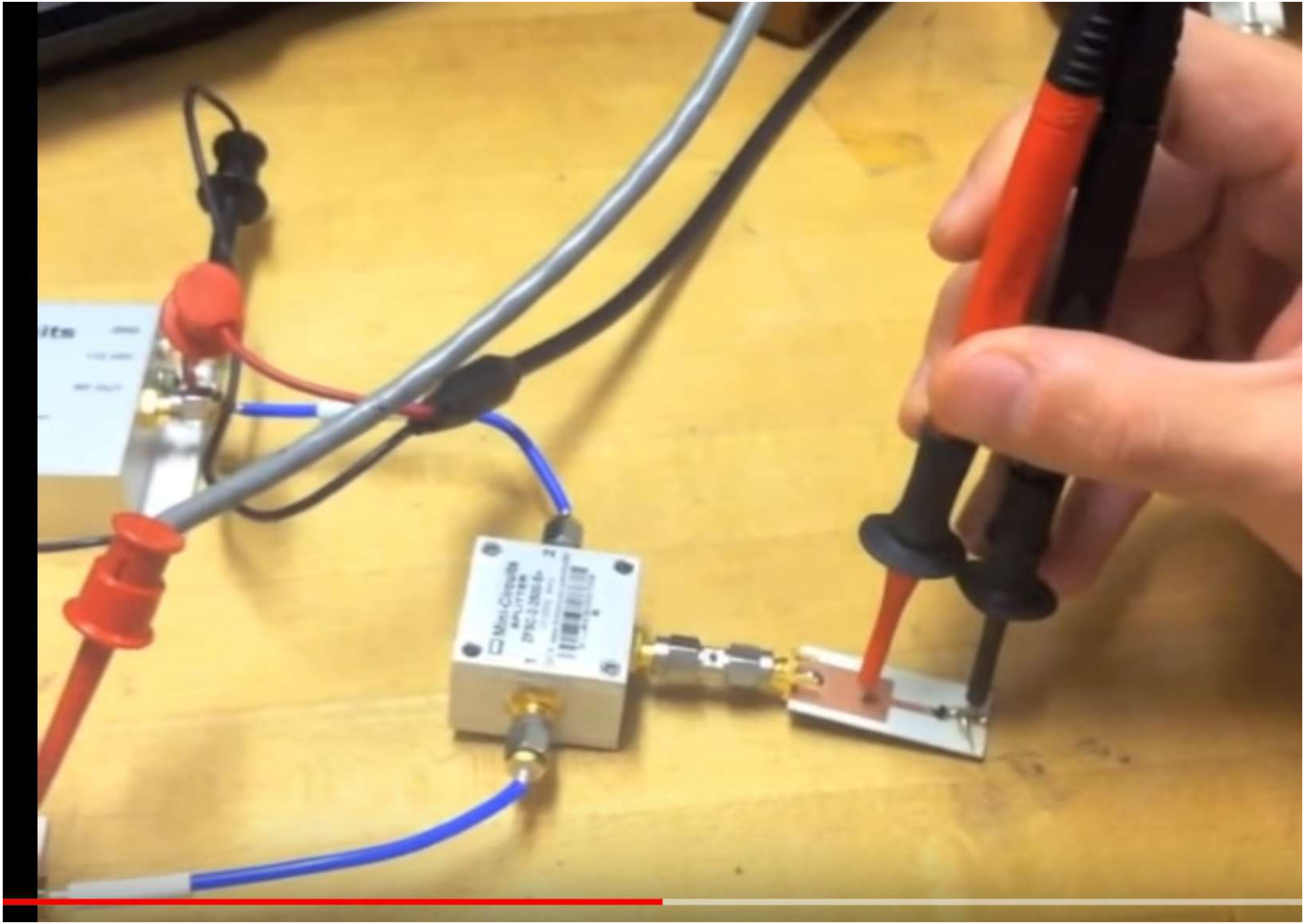


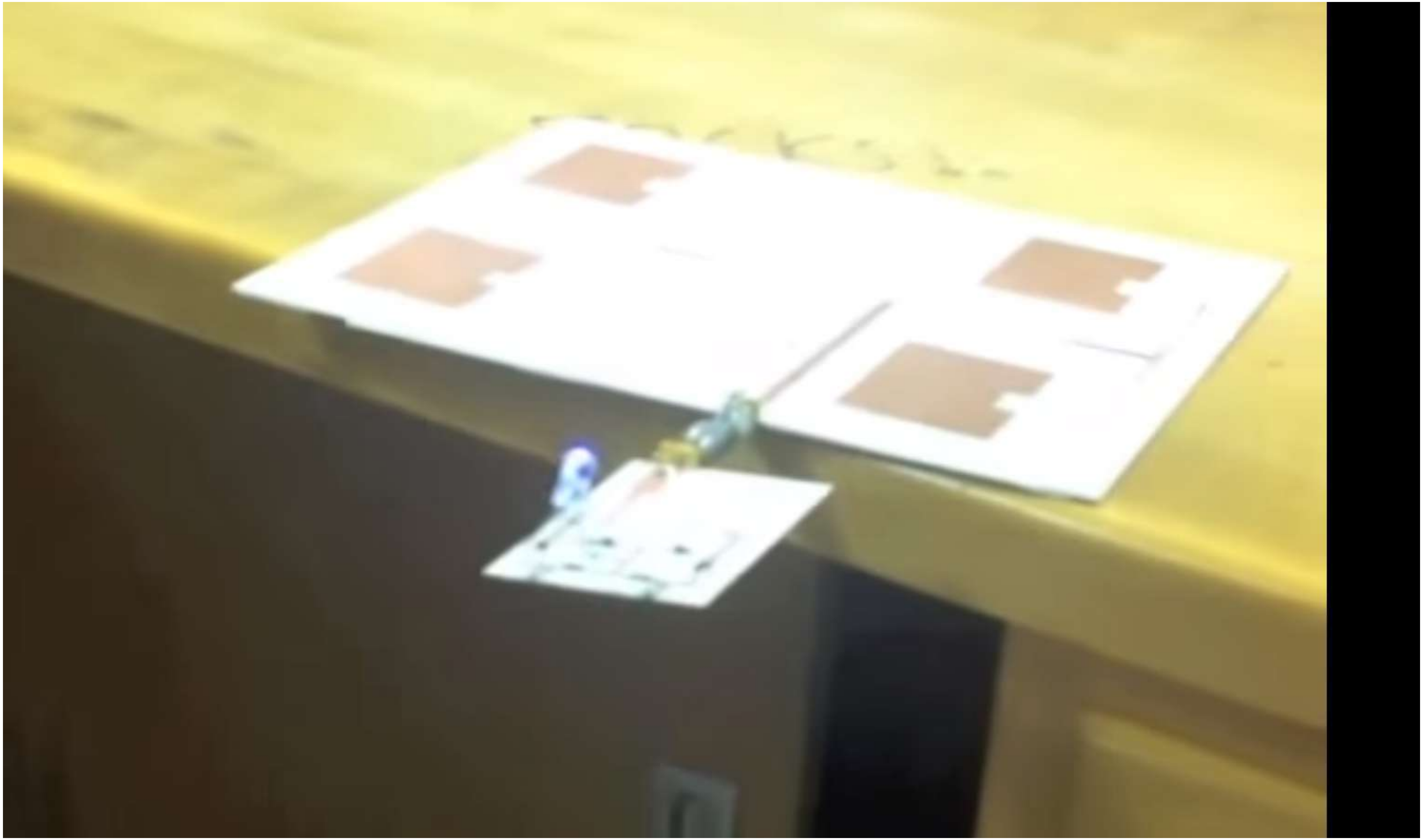

1.134
SELECT
RANGE
HOLD
mA/A
μA/A
Duty
Hz
OFF

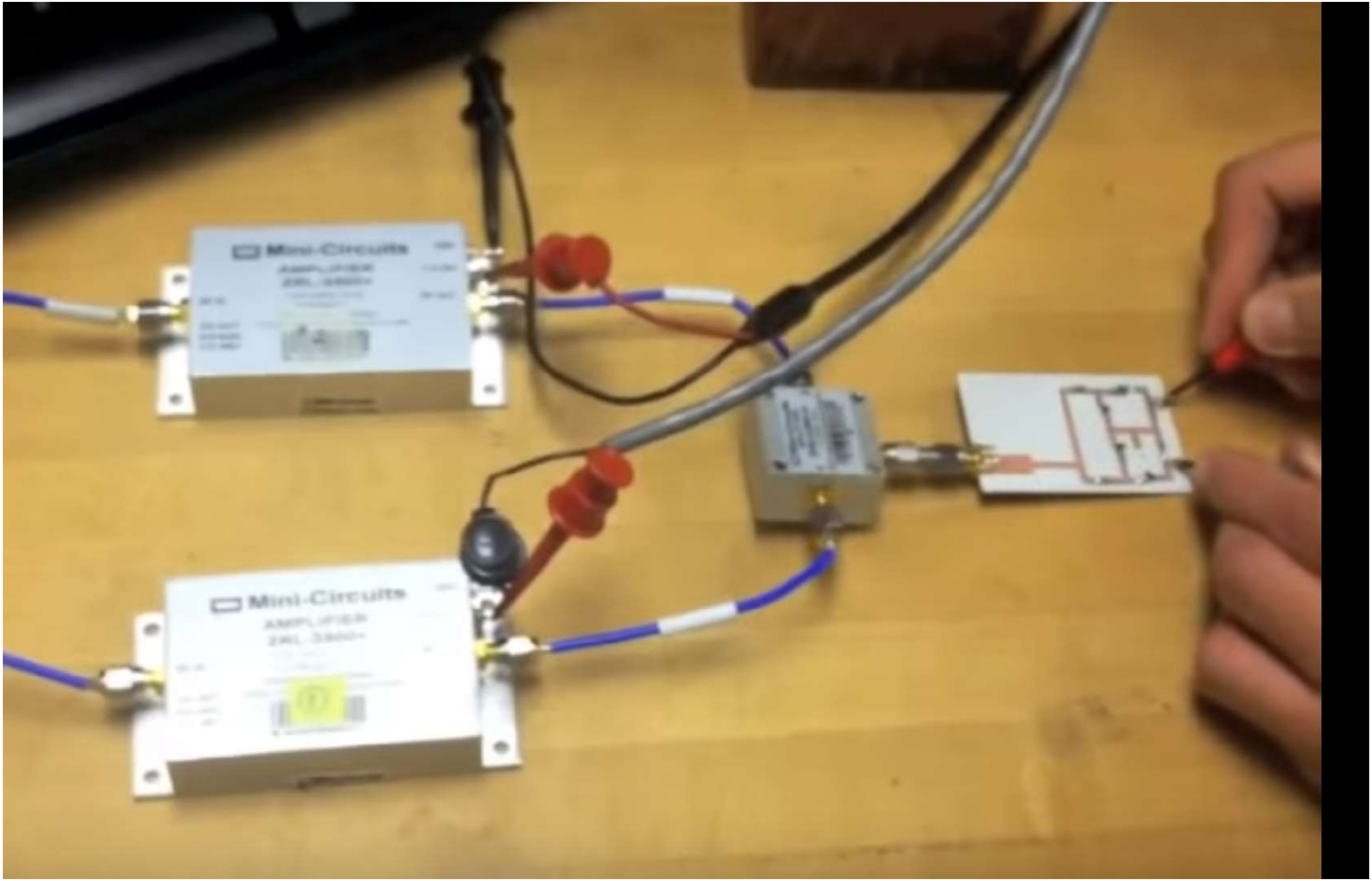


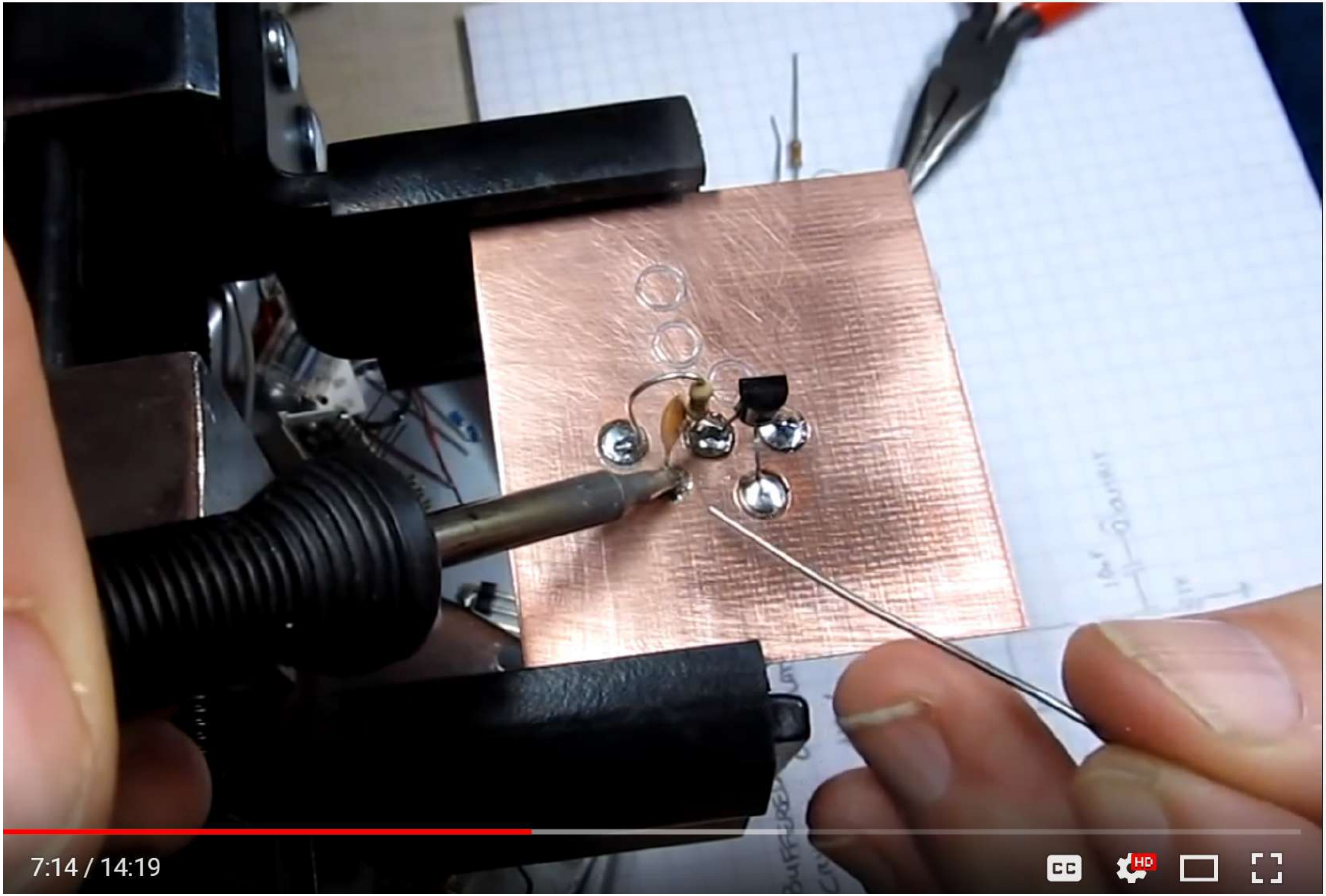


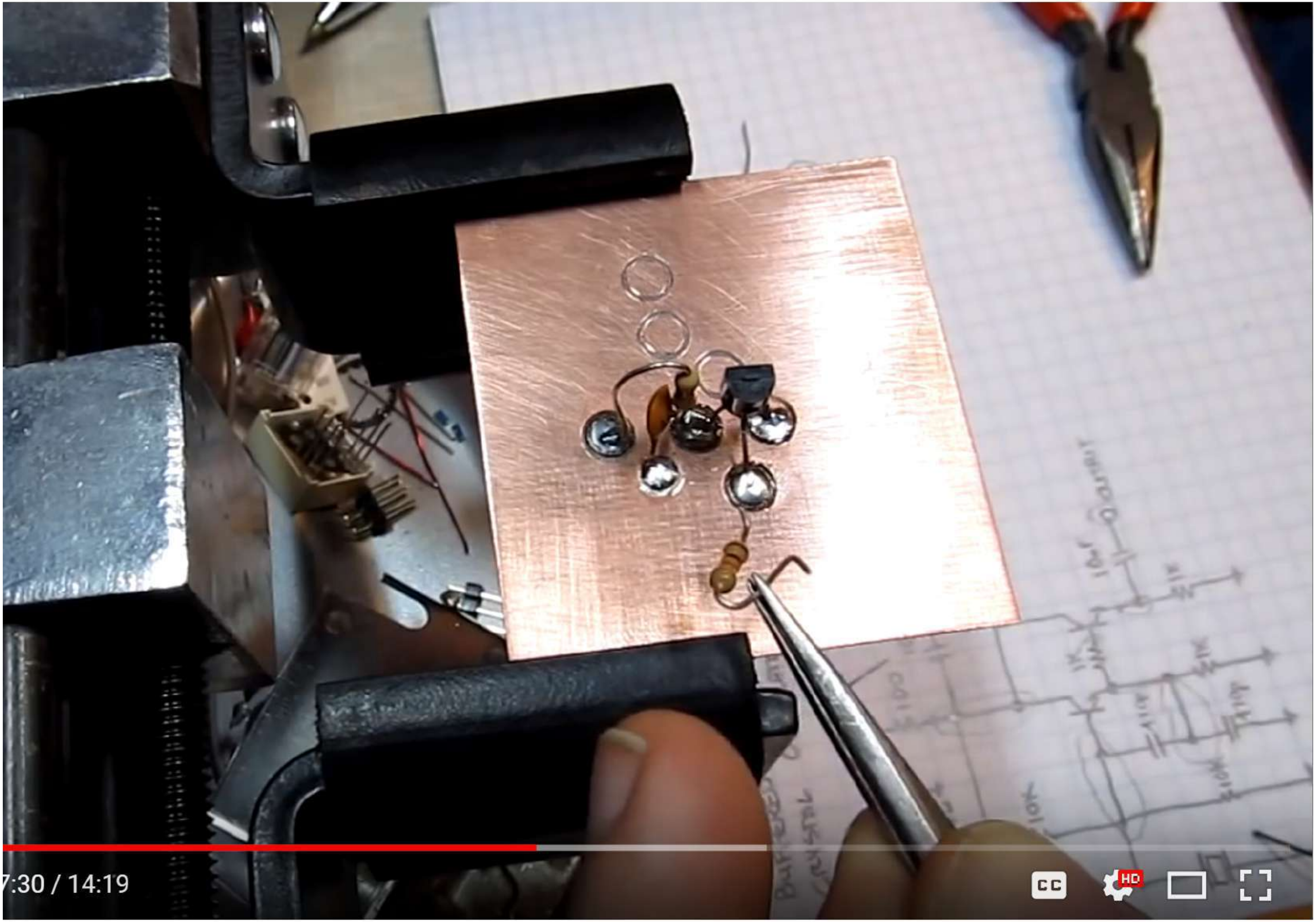

Mini-Circuits

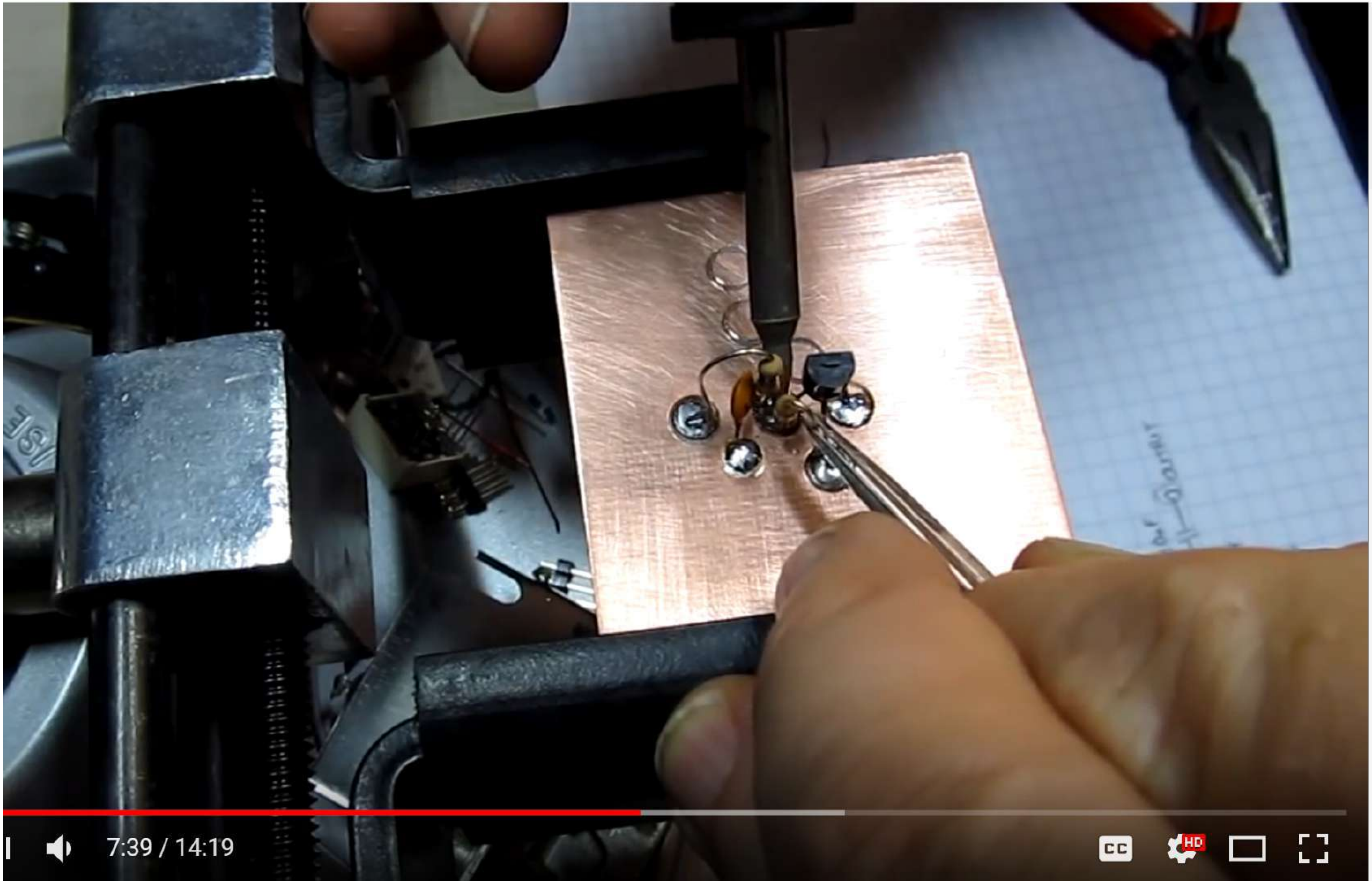


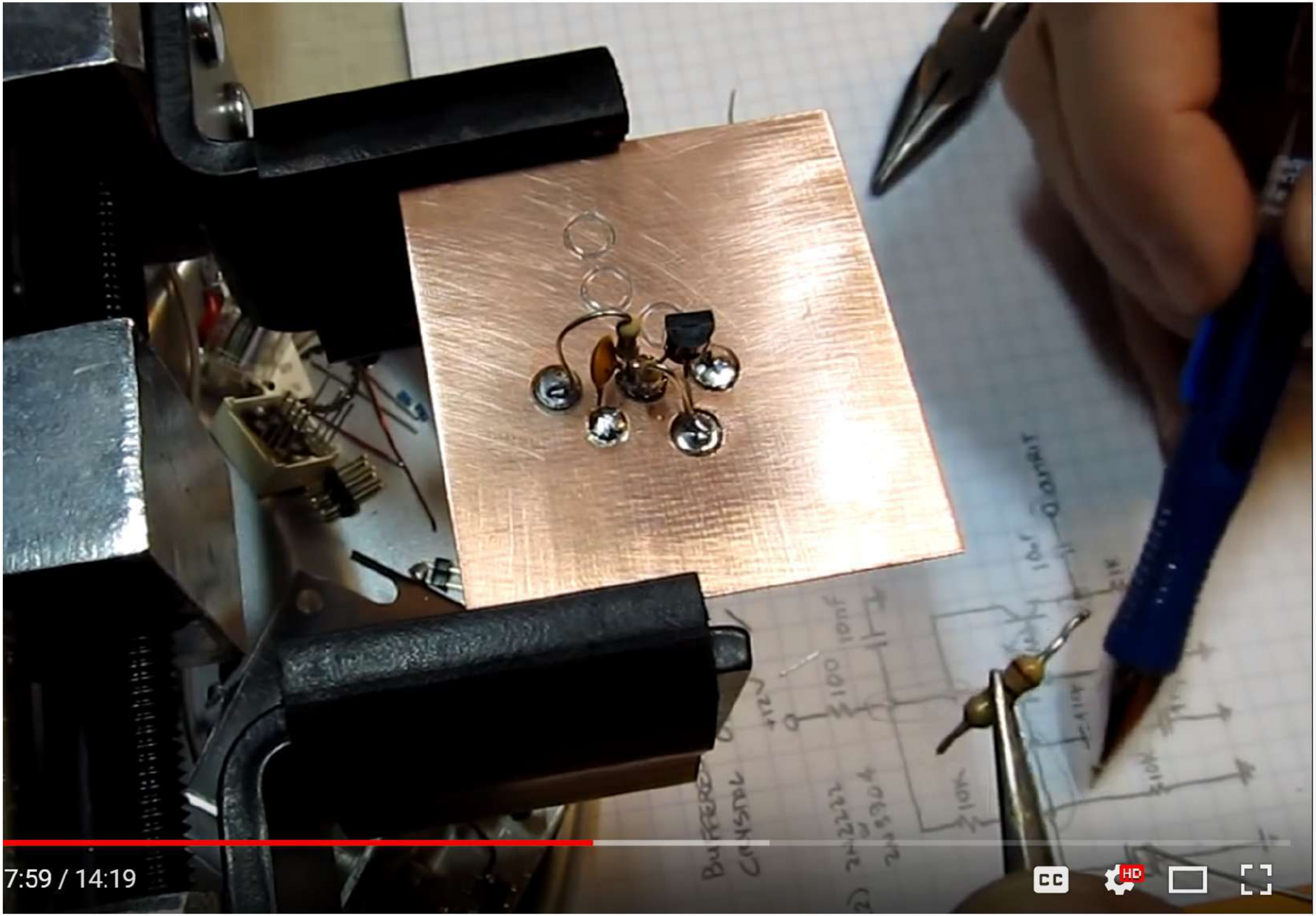


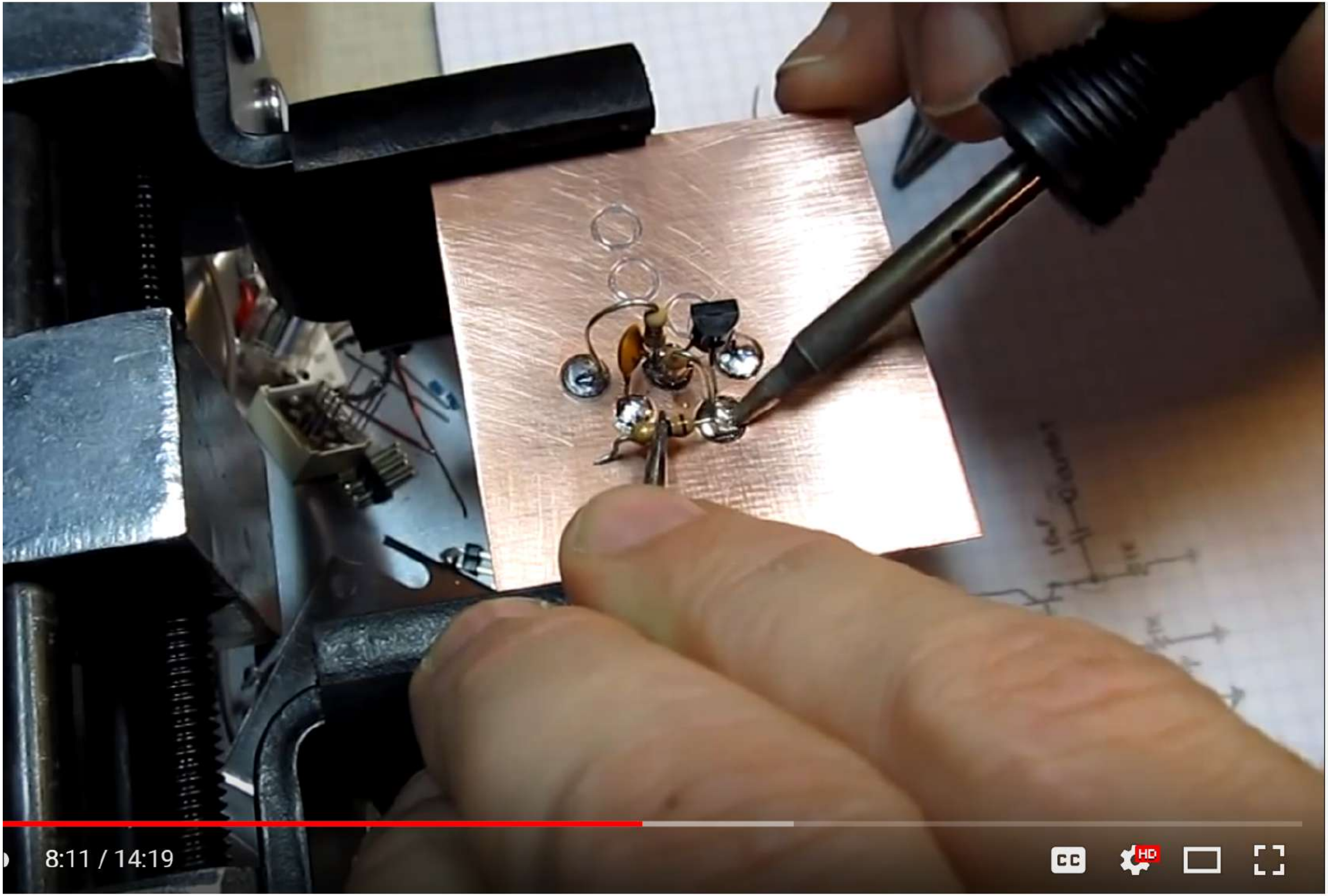

Mini-Circuits
AMPLIFIER
Mini-Circuits
AMPLIFIER


7:14 / 14:19
CC
HD

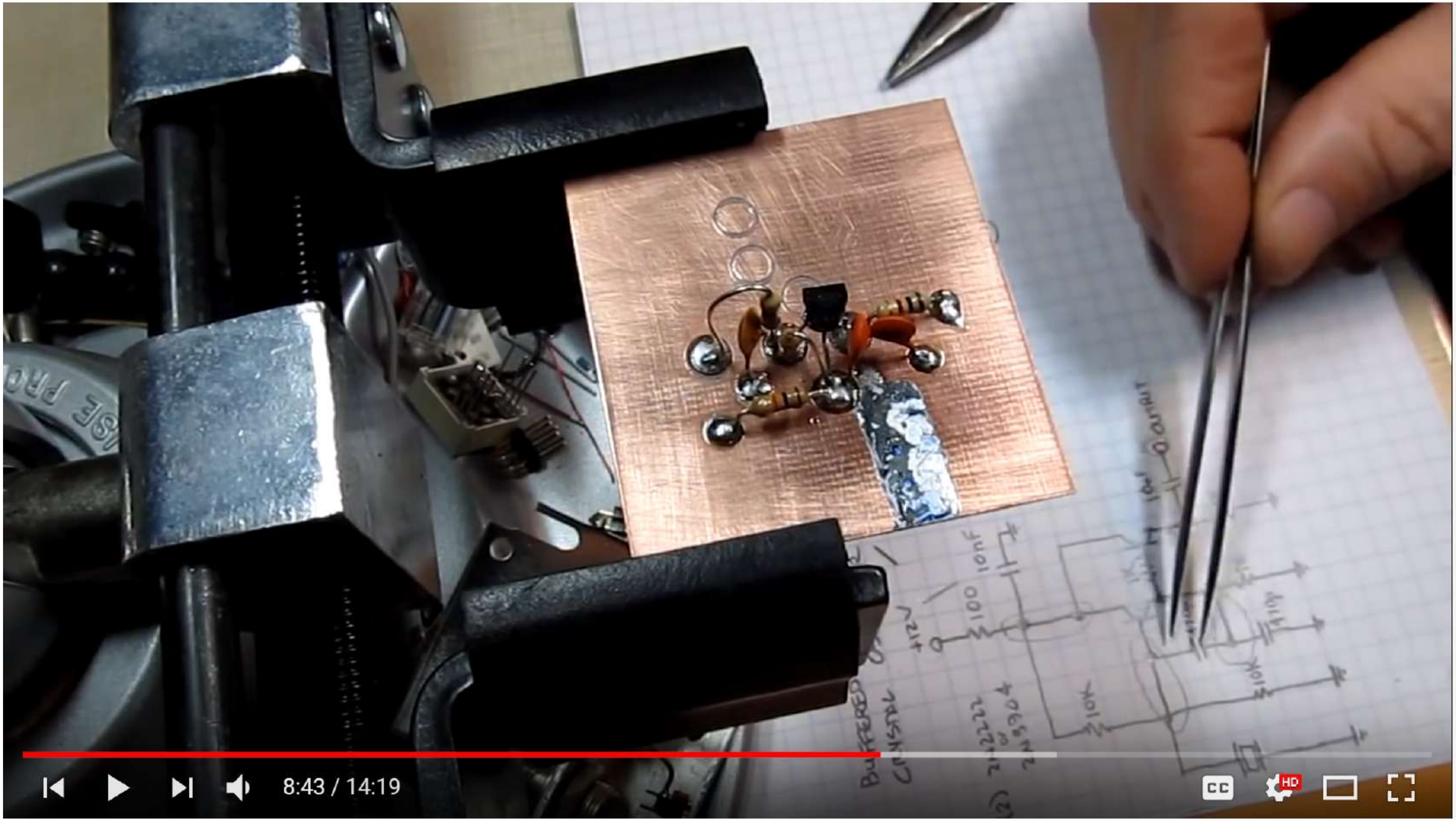

7:30 / 14:19
CC
HD


7:39 / 14:19
CC
HD

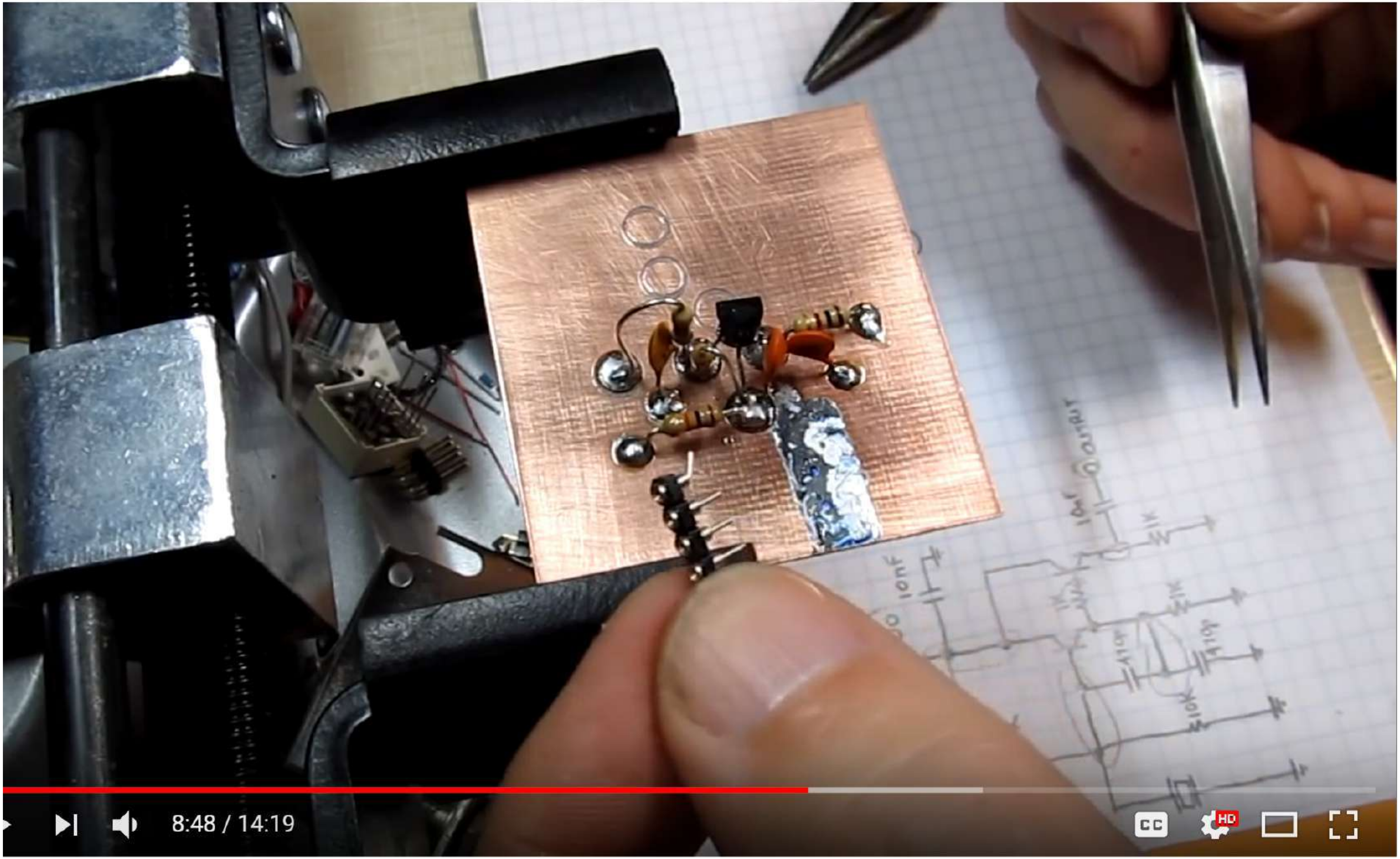

7:59 / 14:19

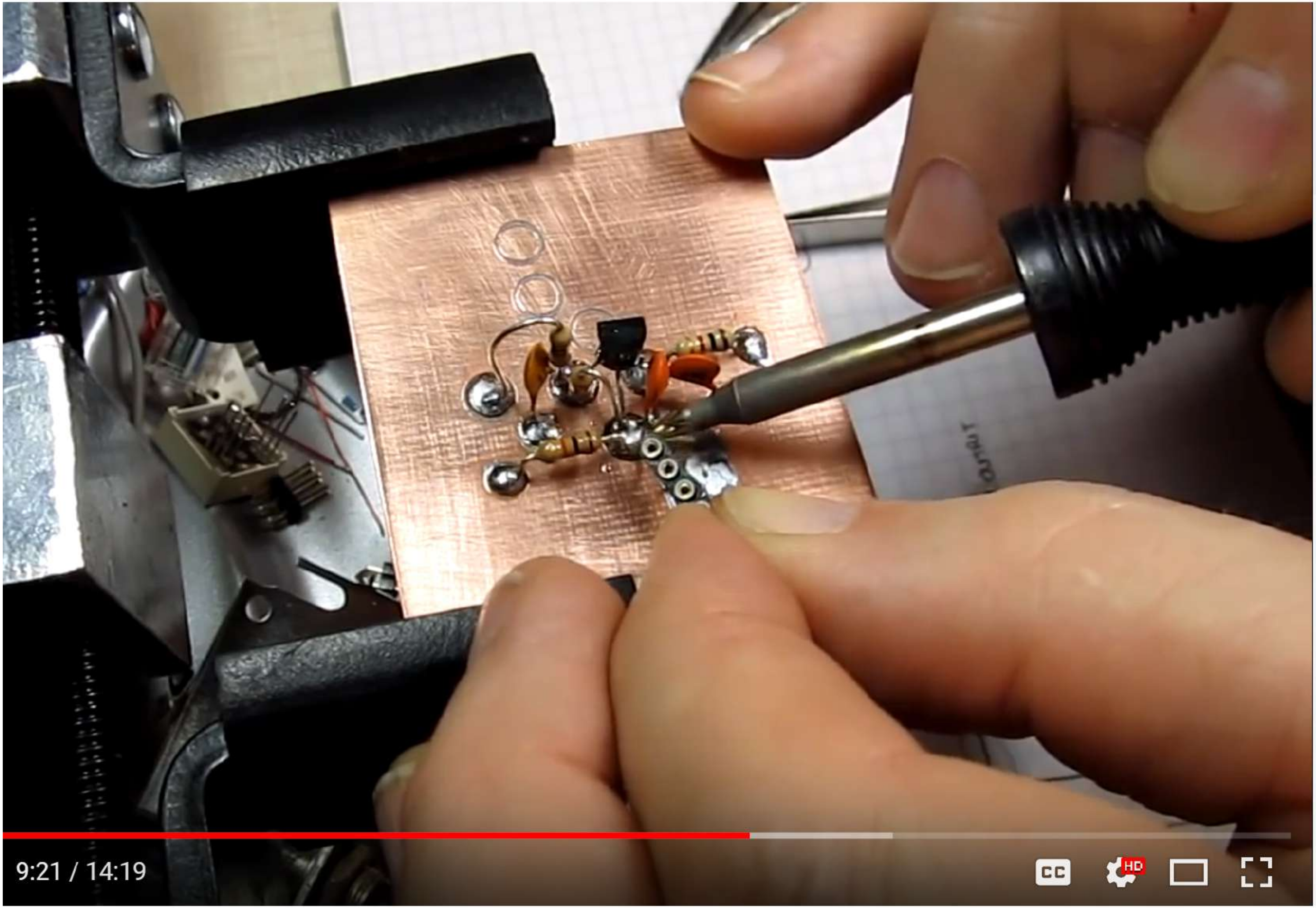

8:11 / 14:19
CC
HD

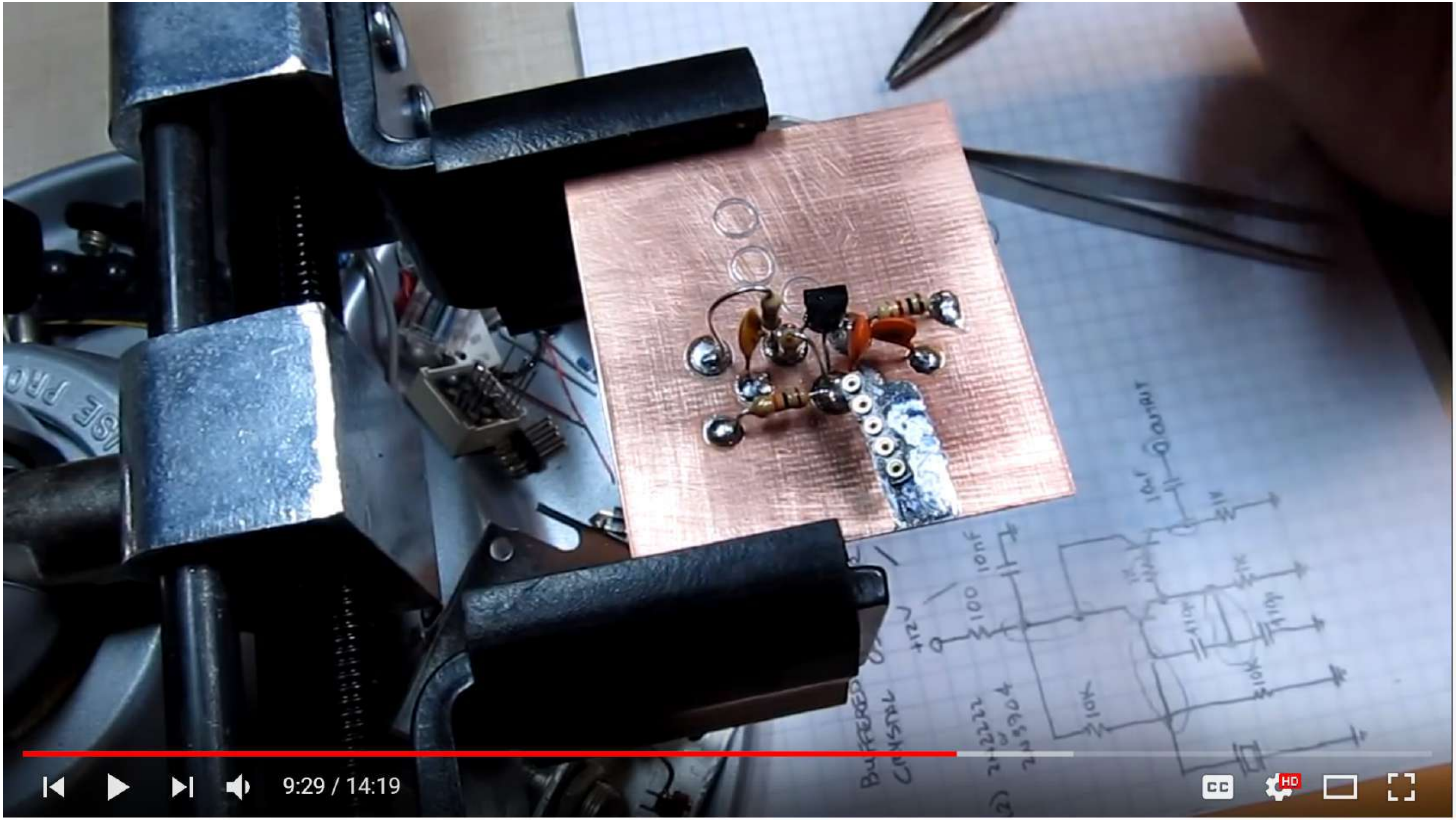

:19
CC
HD



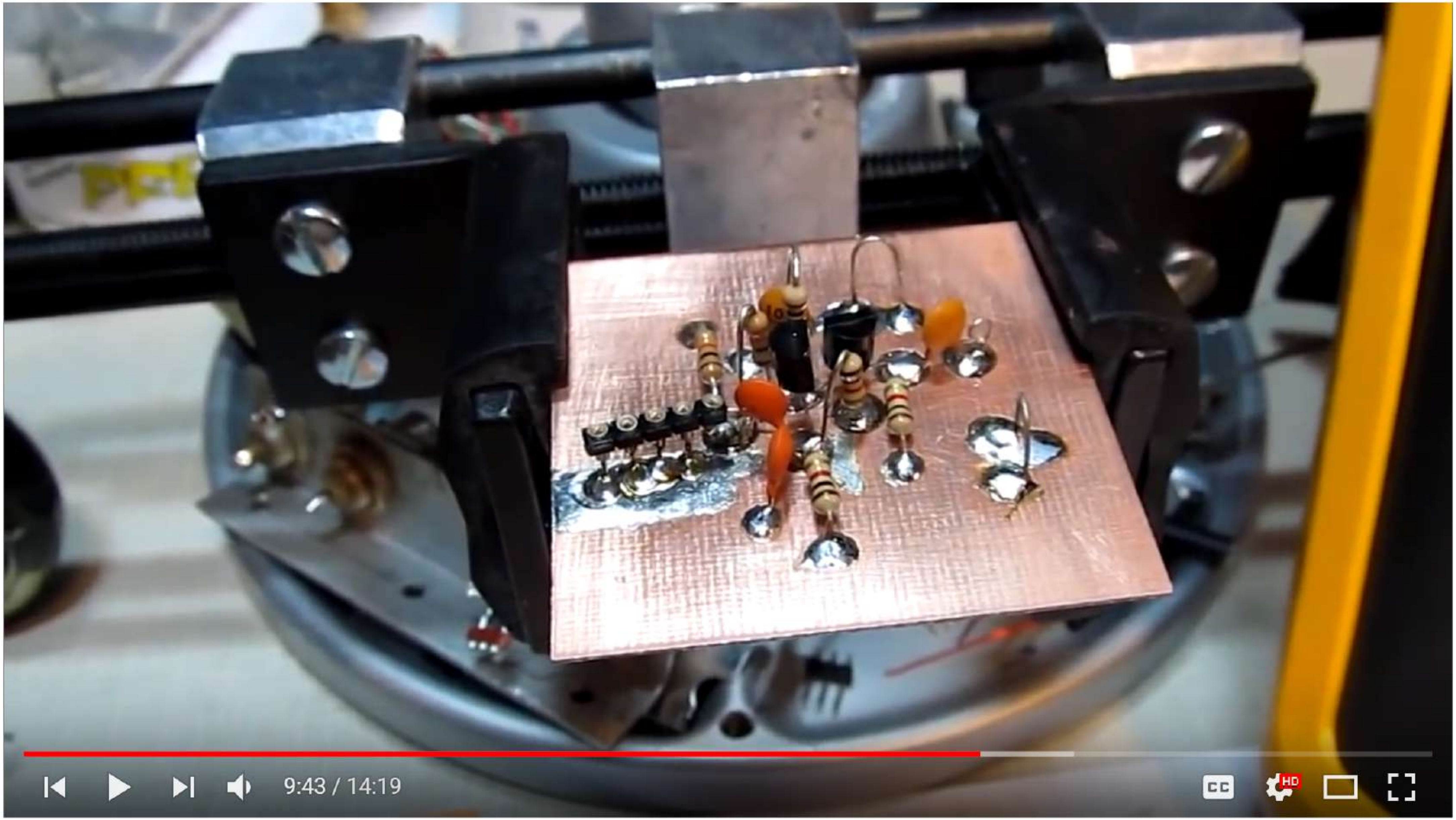
#123: Build a crystal oscillator from schematic thru prototype construction and testing - DIY

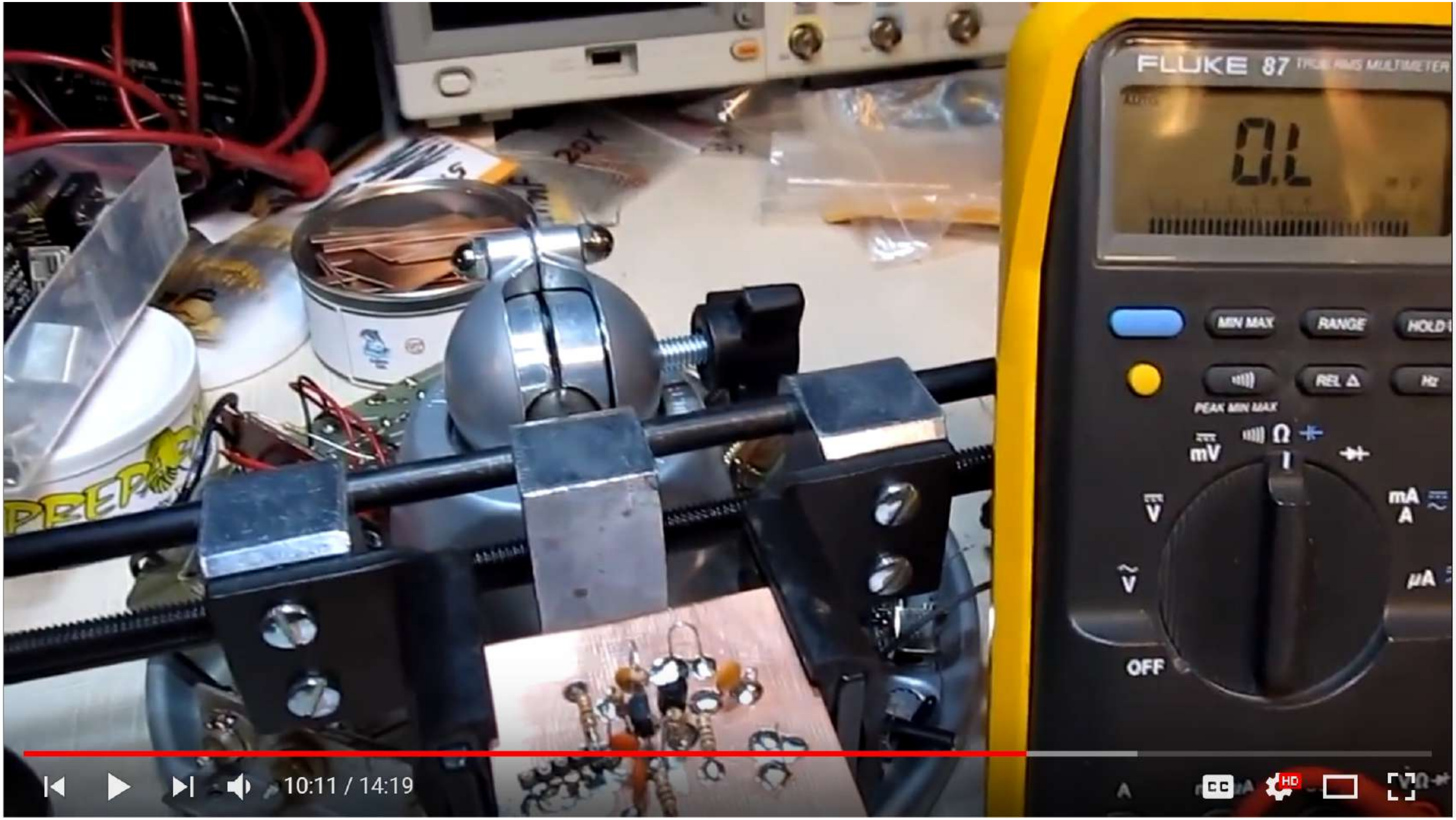

8:48 / 14:19
10nF
1nF
1K
10K

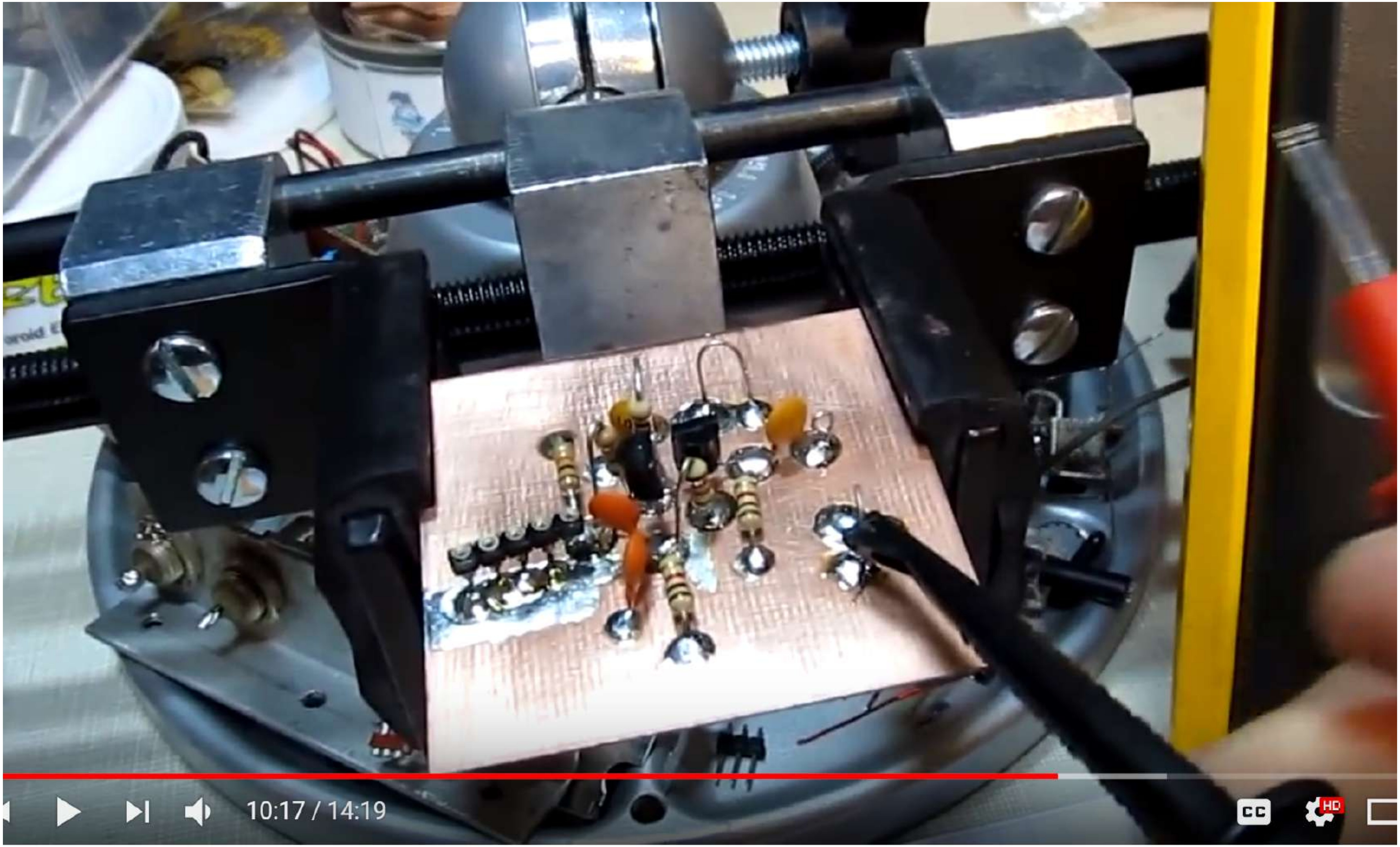

9:21 / 14:19
CC
HD

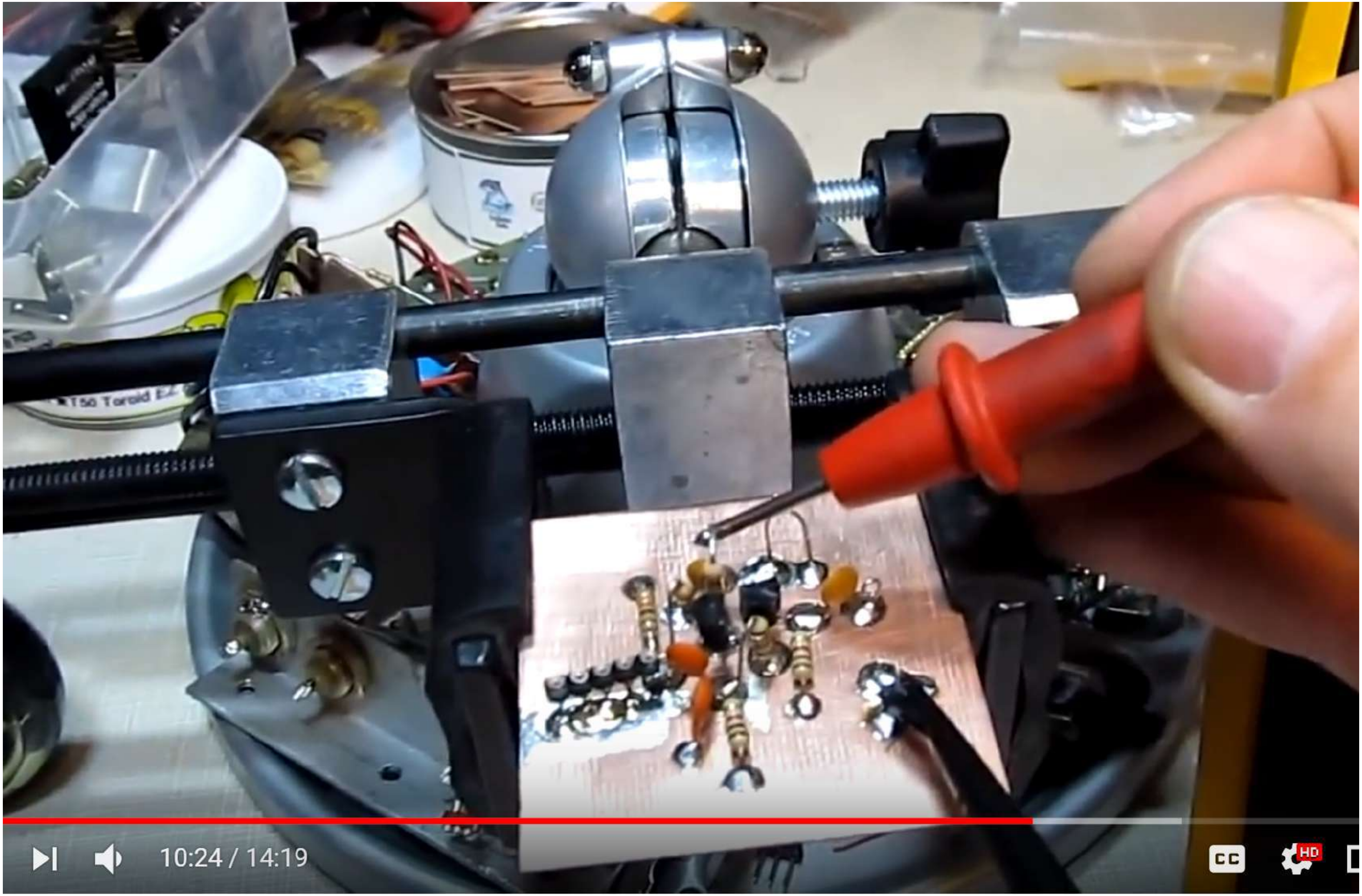


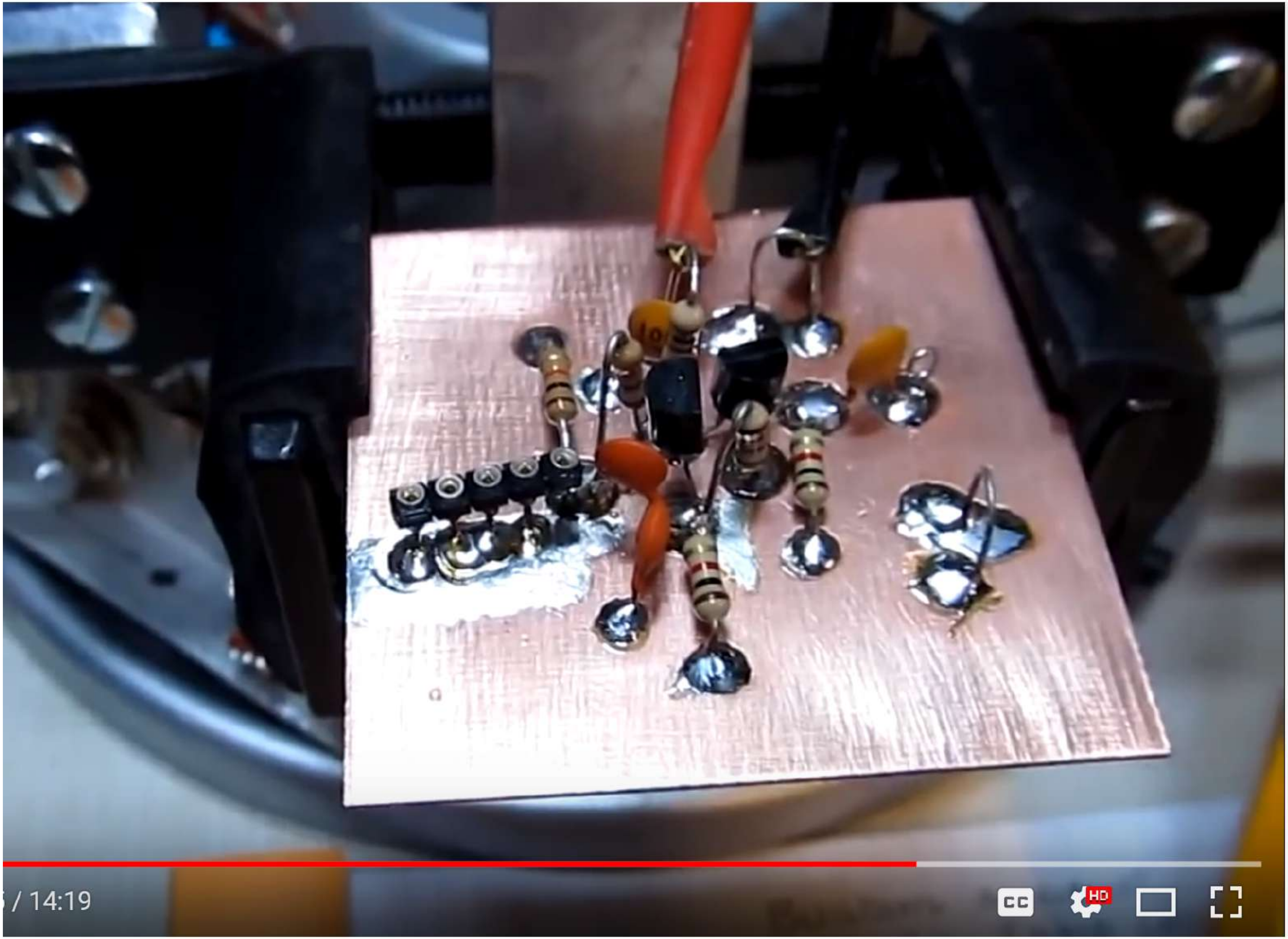
9:29 / 14:19
CC
HD
BUFFERED
+12V
100
10nF
10K

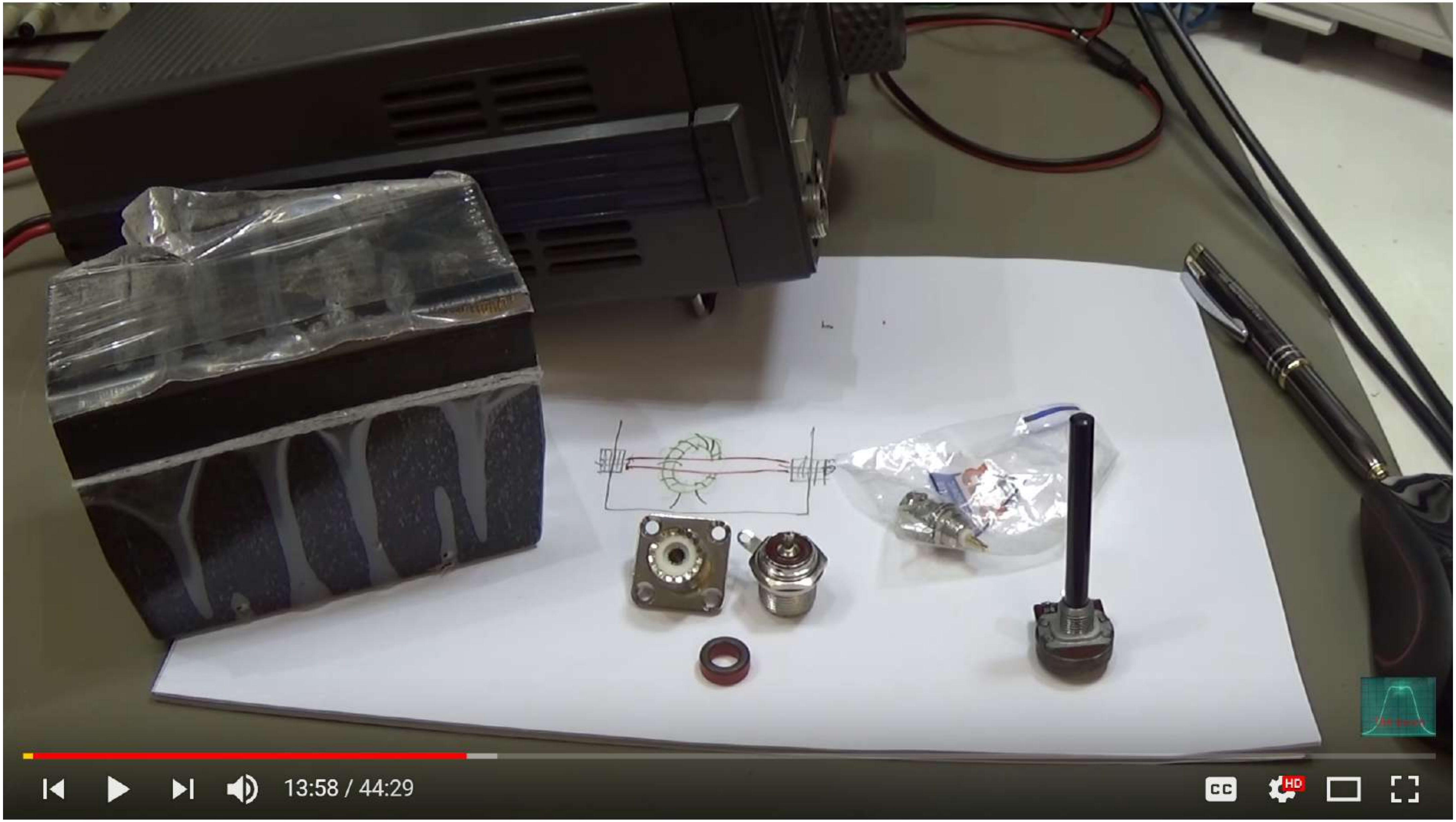

9:43 / 14:19
CC
HD


FLUKE 87
0.L
MIN MAX
RANGE
HOLD
REL Δ
Hz
PEAK MIN MAX
mV
V
mA
A
µA
OFF
10:11 / 14:19

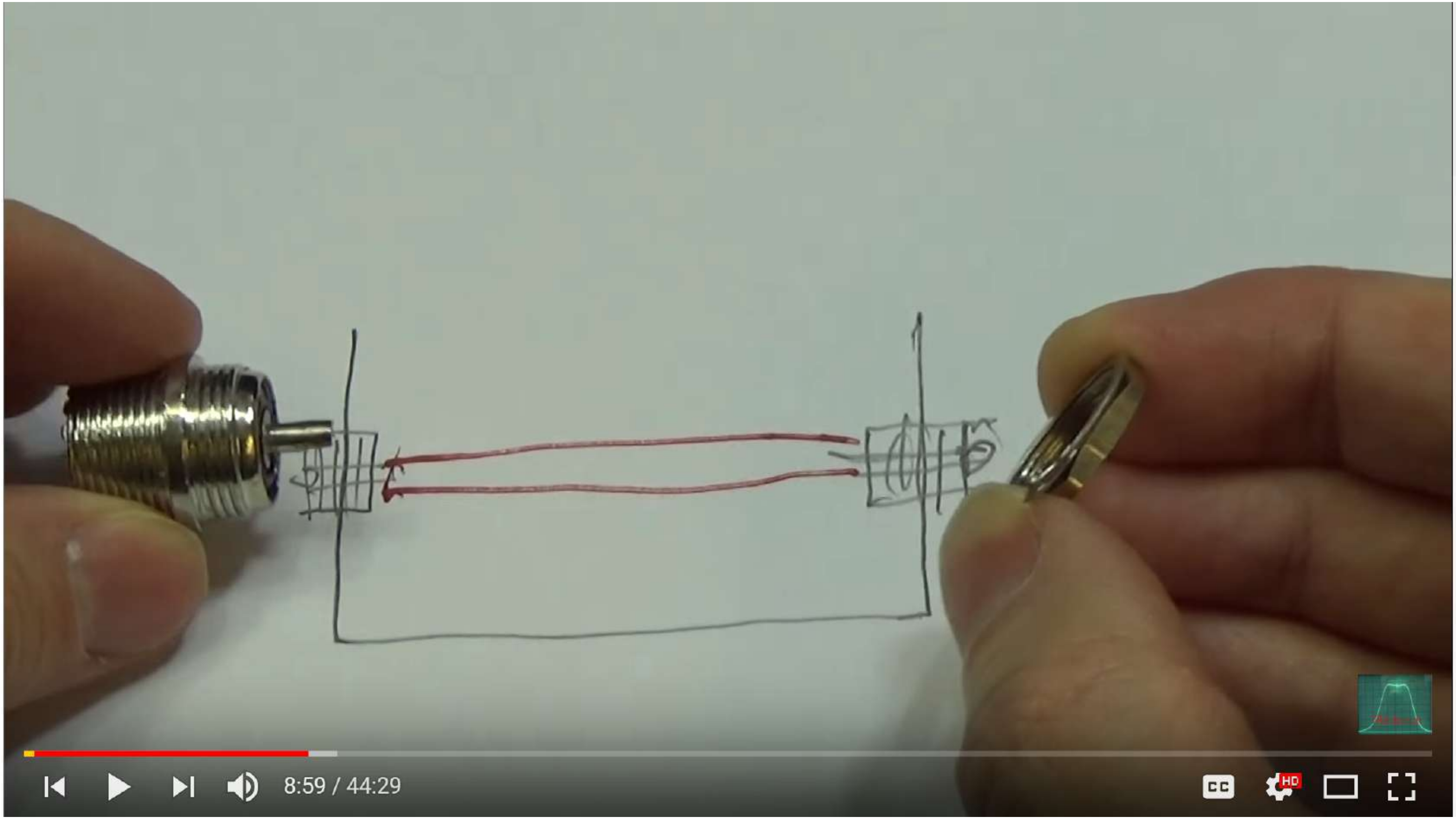

10:17 / 14:19
CC
HD

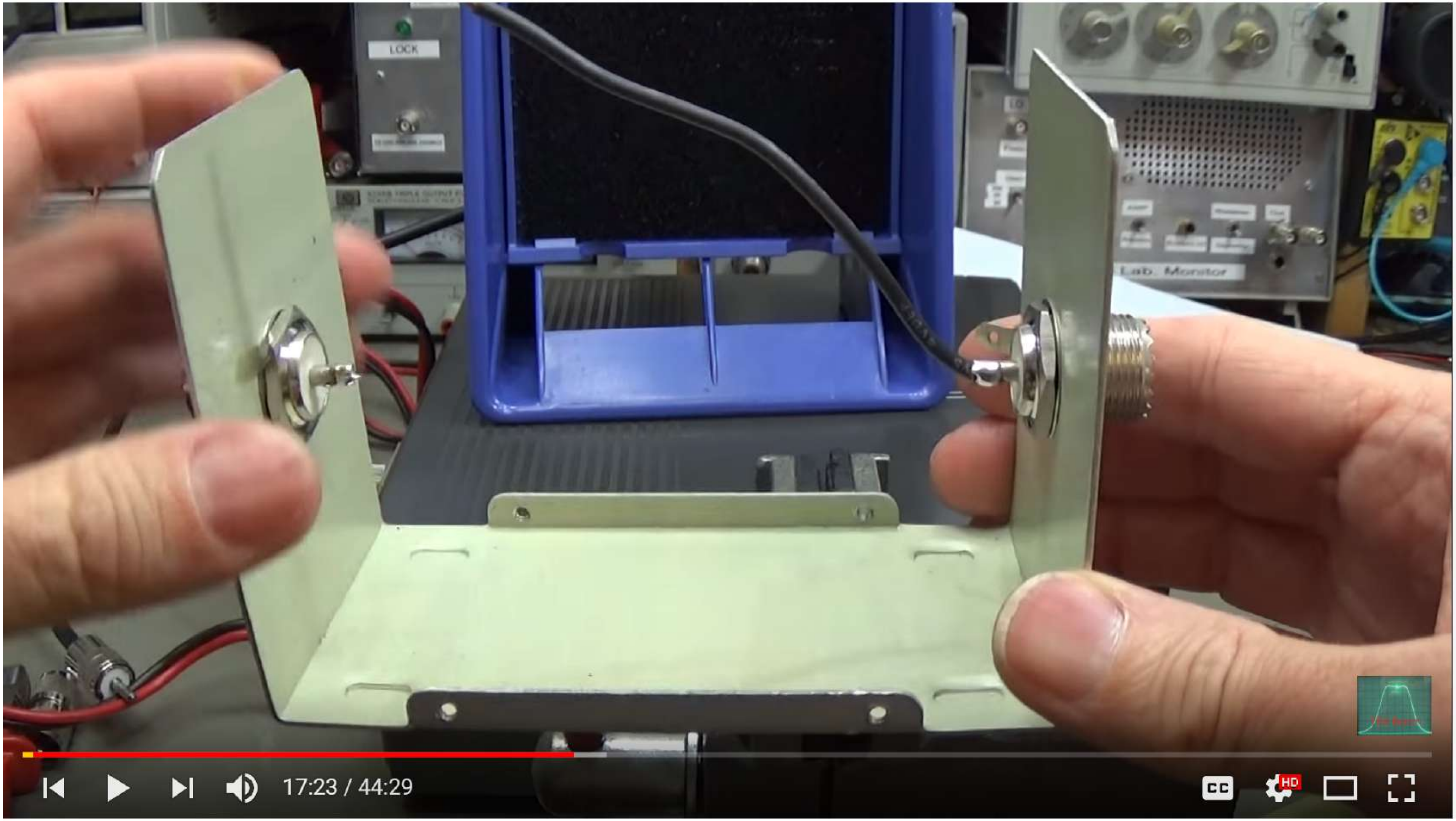

T50 Toroid
10:24 / 14:19
CC
HD


/ 14:19
CC
HD

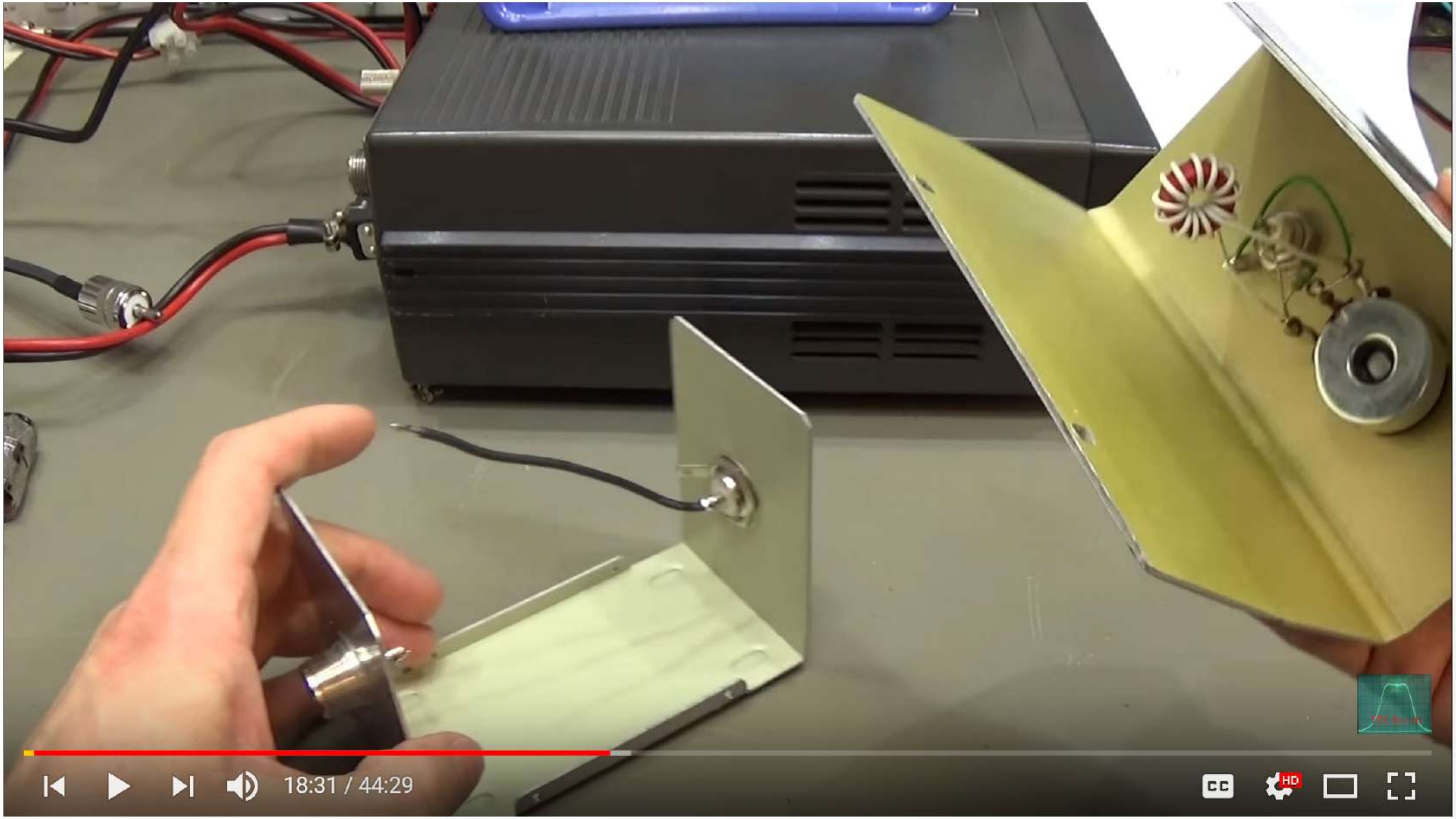


#74 Quick Tip: Build a Variable RF Tap for your shack or lab

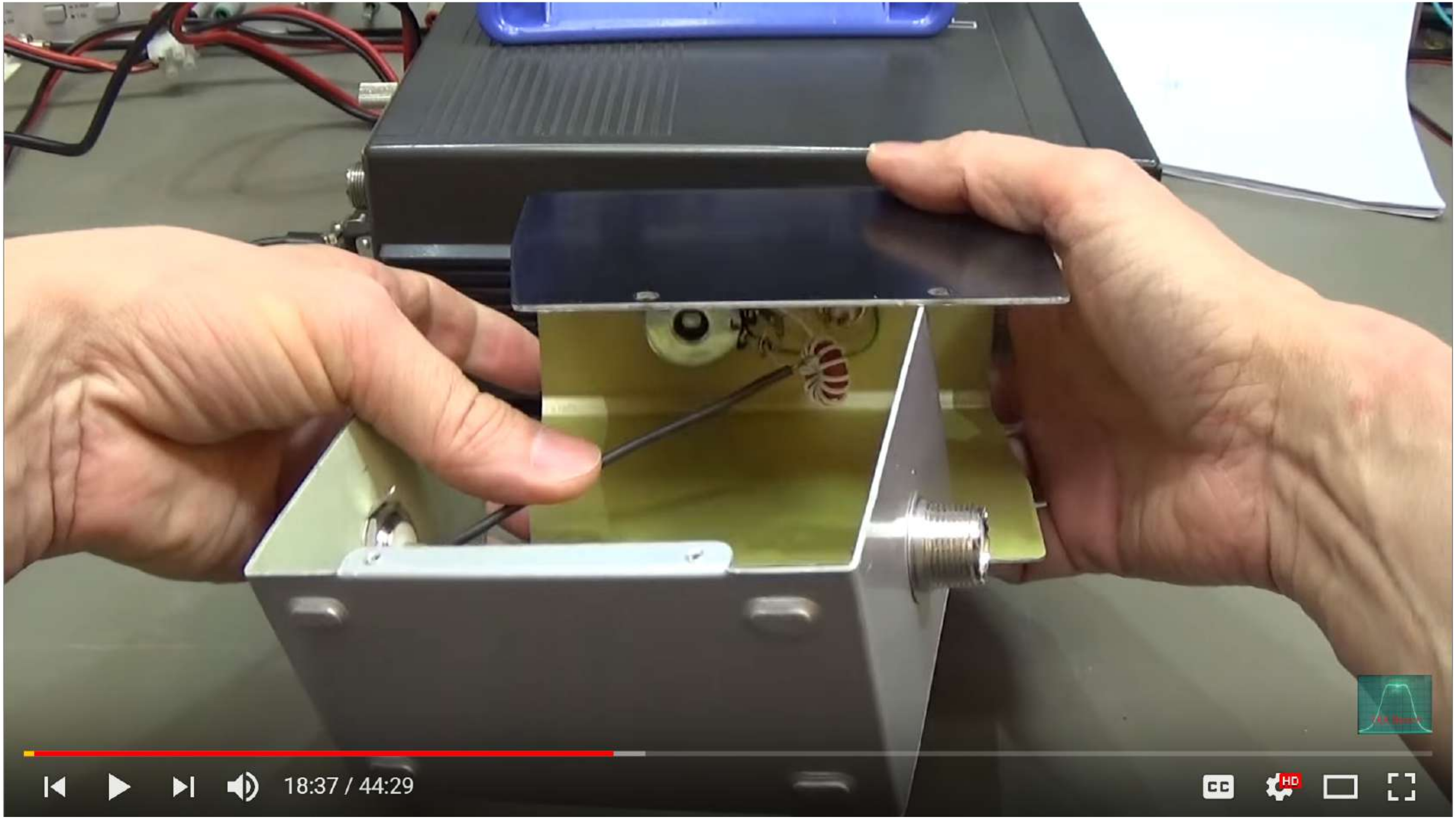

8:59 / 44:29


LOCK
Lab. Monster
17:23 / 44:29
HD


17:57 / 44:29
HD



#74 Quick Tip: Build a Variable RF Tap for your shack or lab


18:37 / 44:29

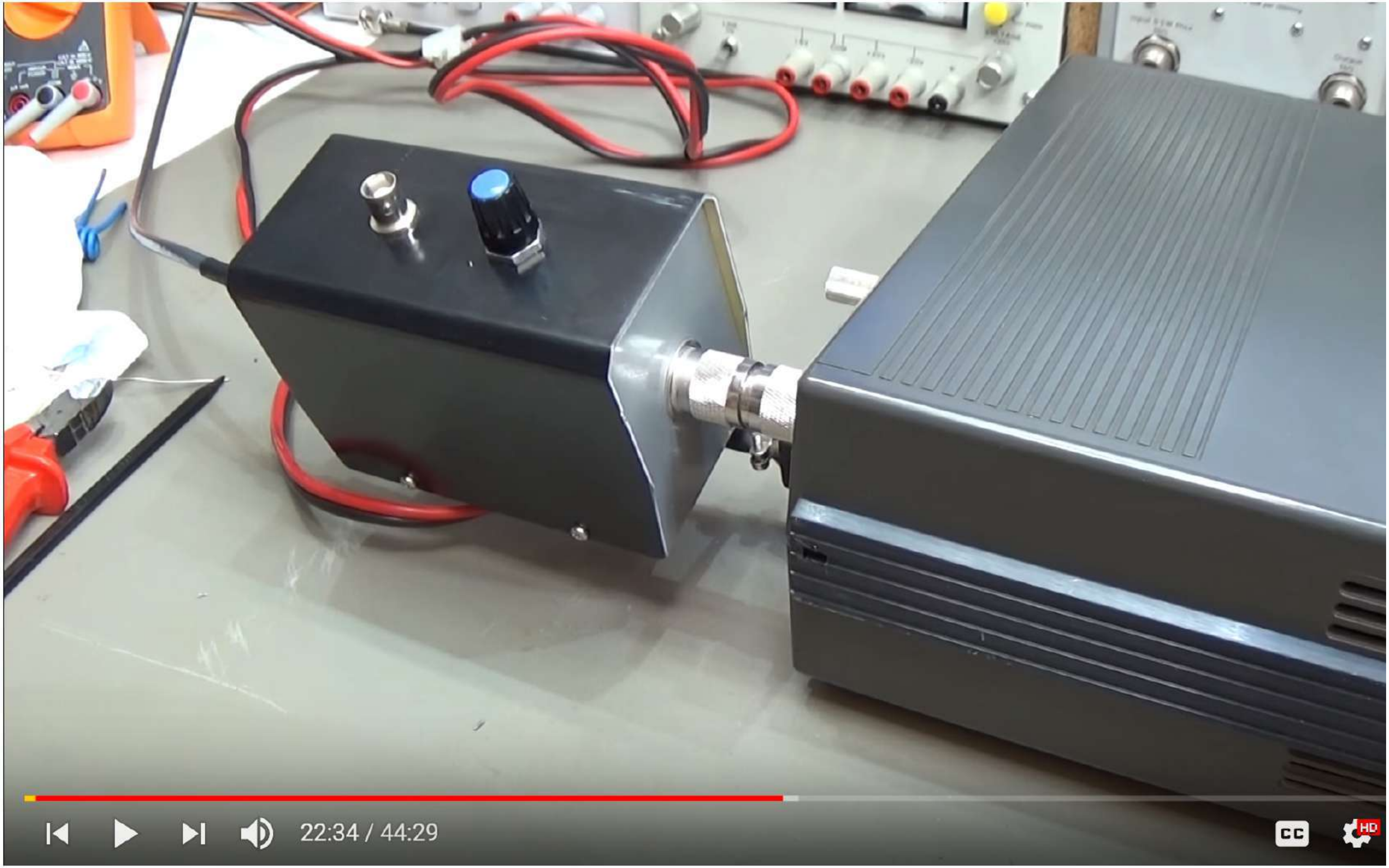

18:42 / 44:29
CC
HD

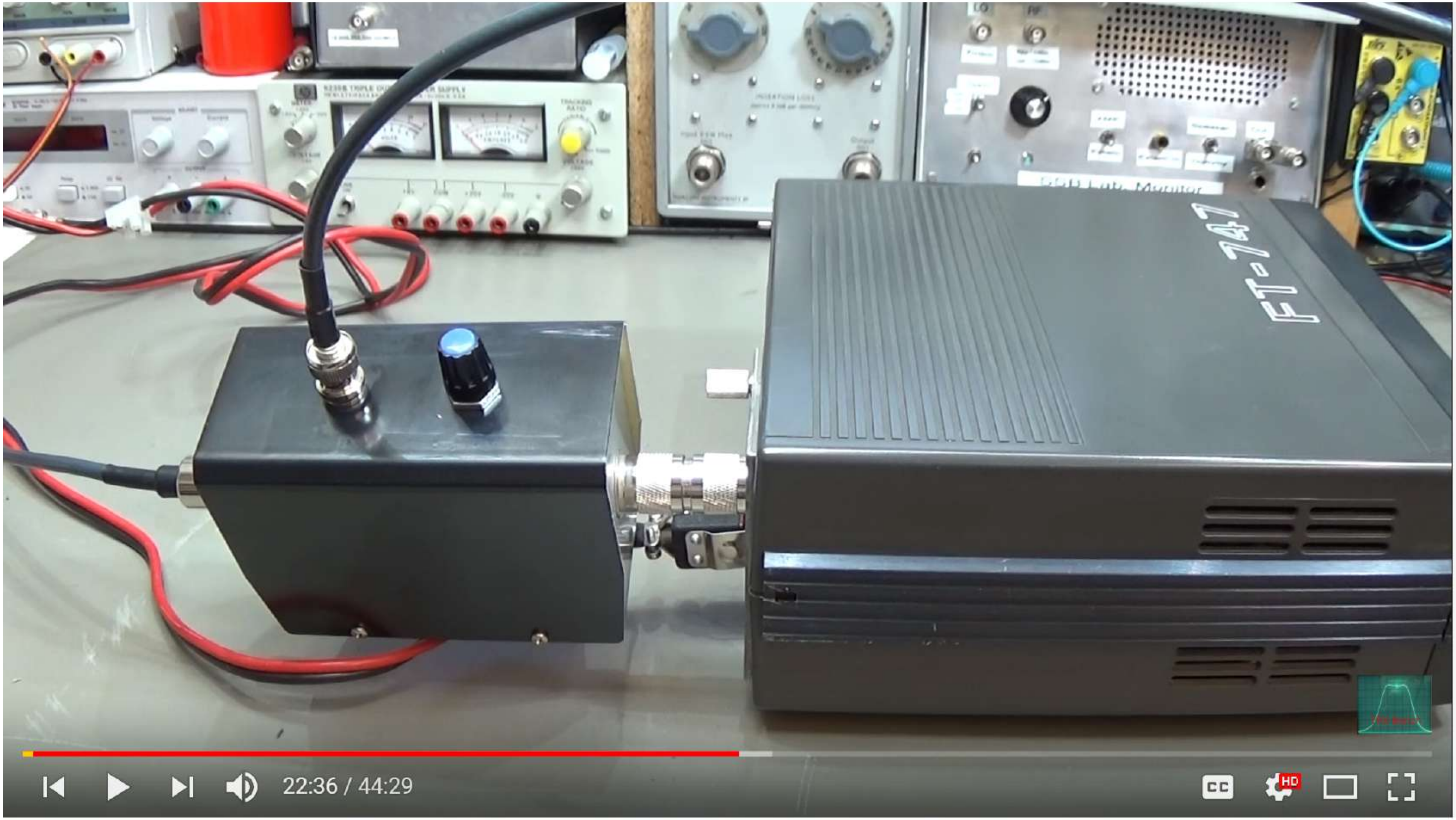

18:47 / 44:29

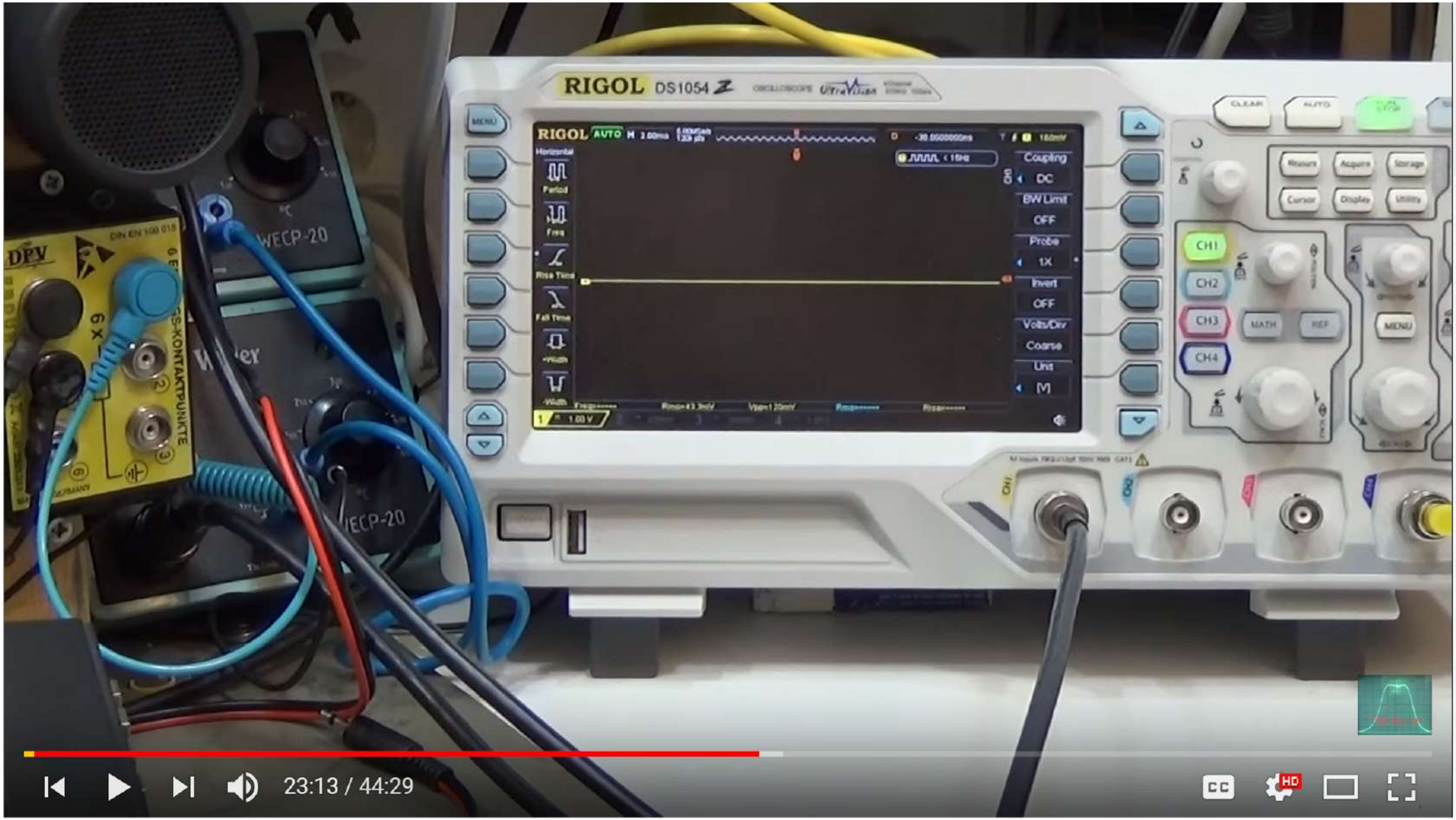

19:27 / 44:29


21:27 / 44:29

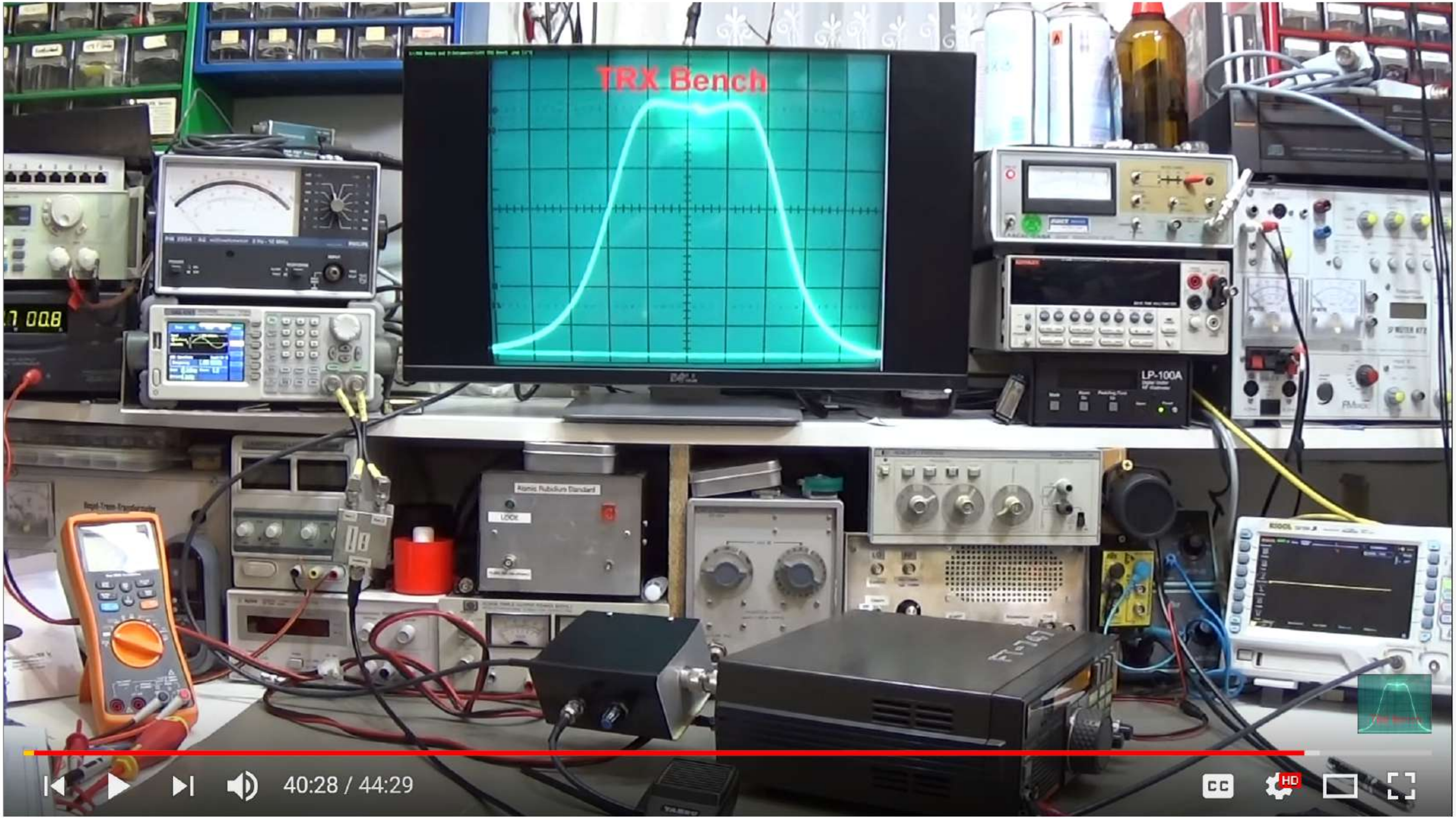

21:35 / 44:29
CC


22:34 / 44:29
HD

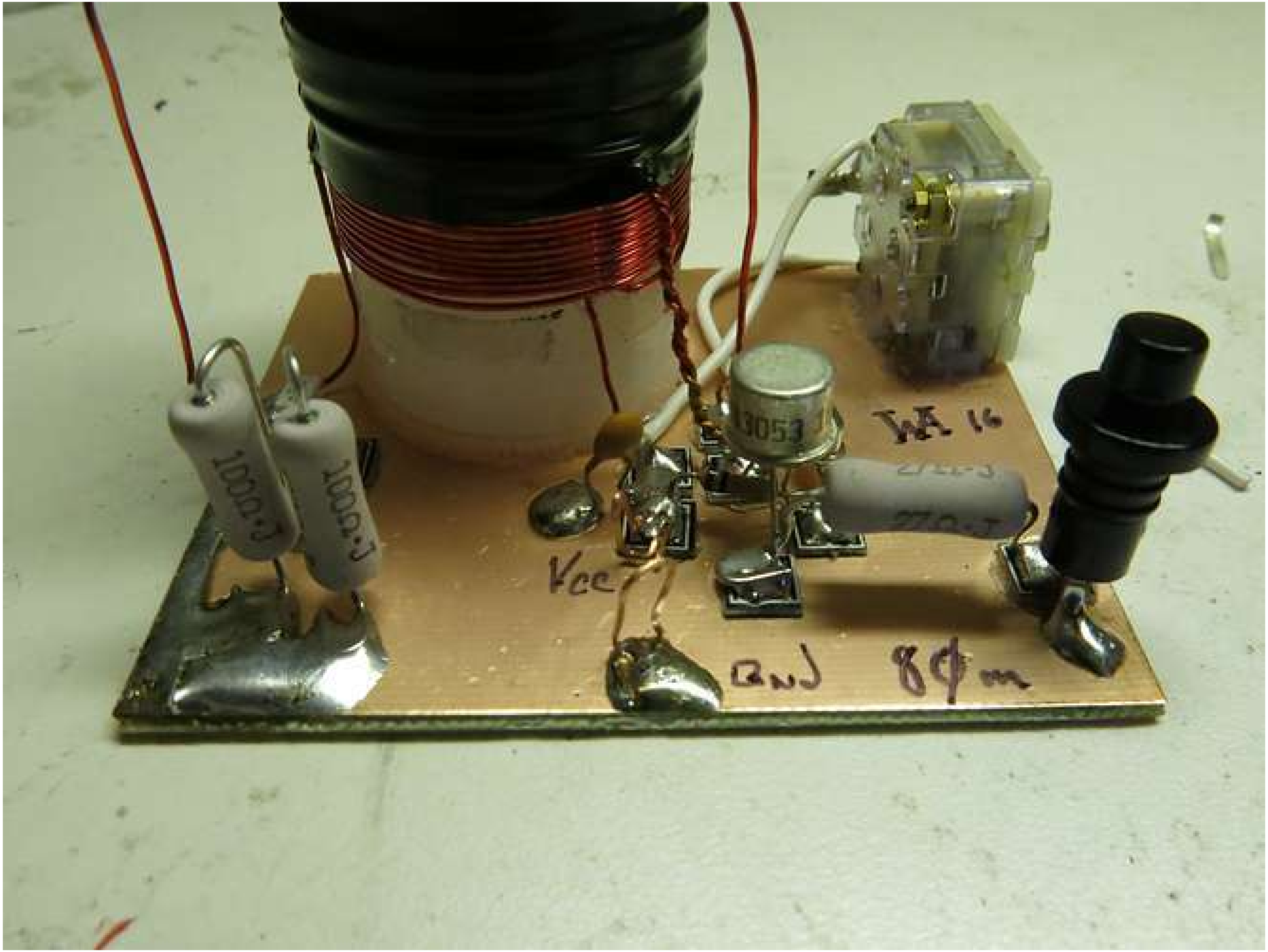

FT-747
22:36 / 44:29
HD

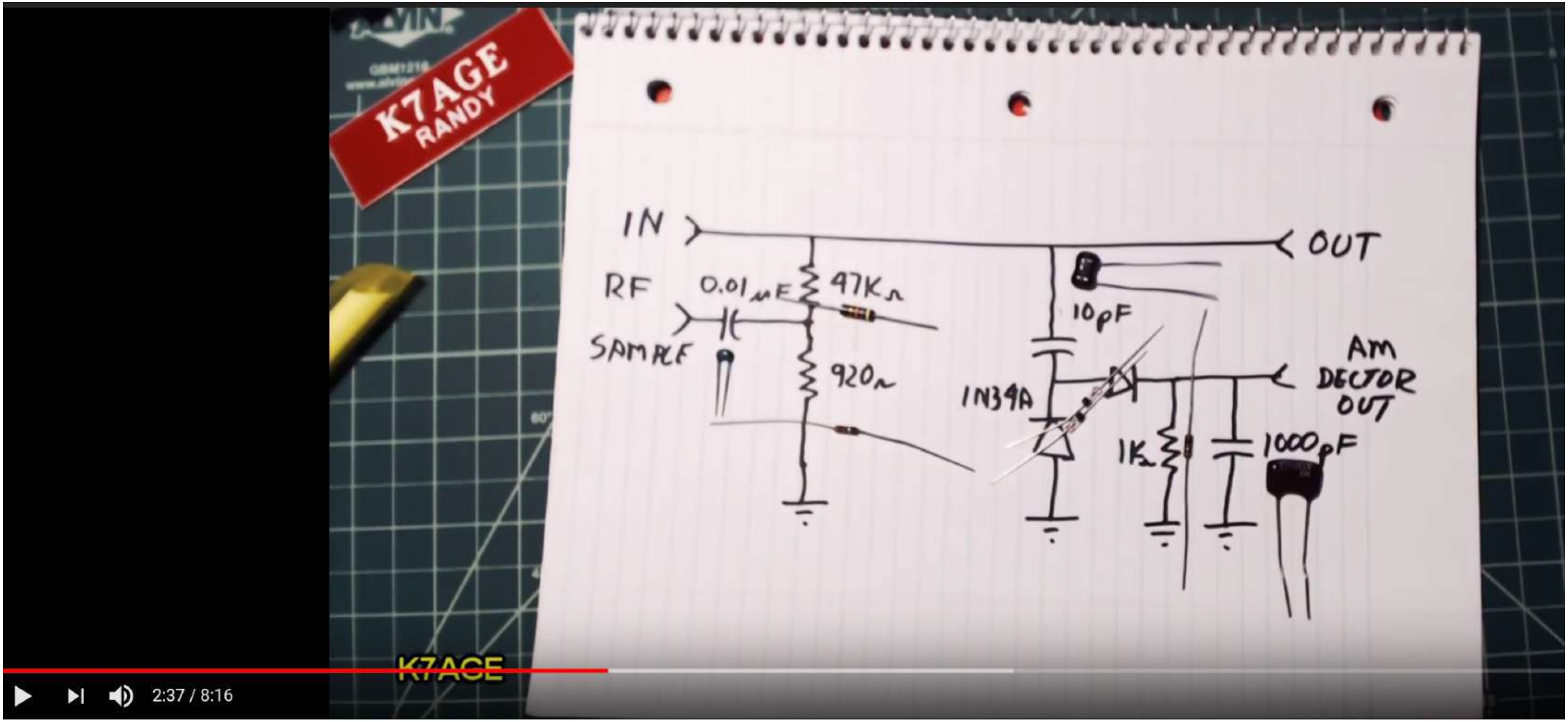

RIGOL DS1054Z
Coupling
DC
BW Limit
OFF
Probe
1X
Invert
OFF
Volts/Div
Coarse
Unit
[V]
CH1
CH2
CH3
CH4
MATH
REF
MENU
WECP-20
6 x
23:13 / 44:29

SSB Lab. Moni
FT-747
3.679.600
ON AIR
NAR
ATT
NB
MOX
HF TRANSCEIVER FT-747GX
POWER
MIC
PHONES
MODE
VFO MR
SPLIT
AF SQL
MIC DRIVE
24:39 / 44:29



#74 Quick Tip: Build a Variable RF Tap for your shack or lab

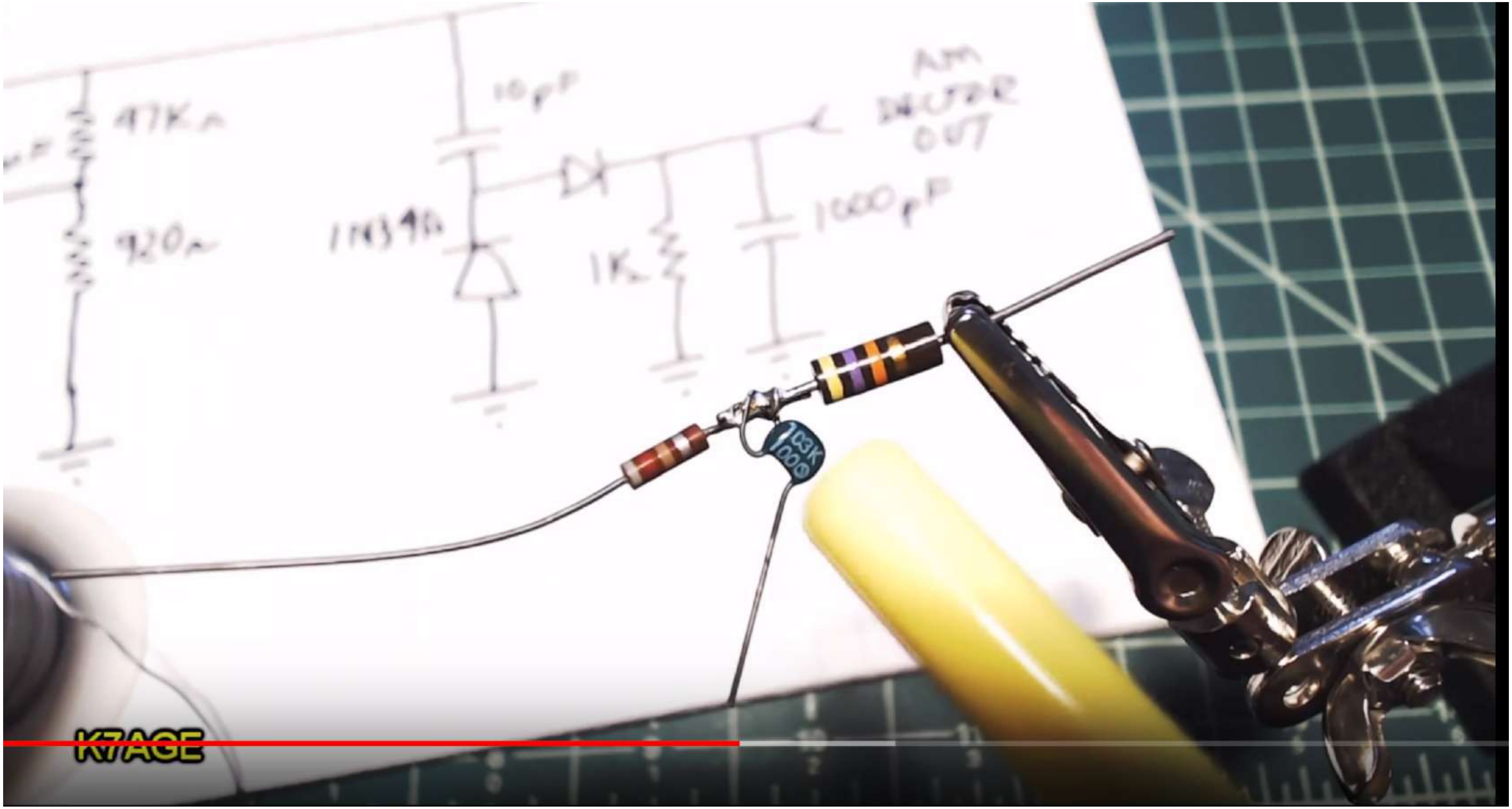

3053
Vcc
Gnd
80m

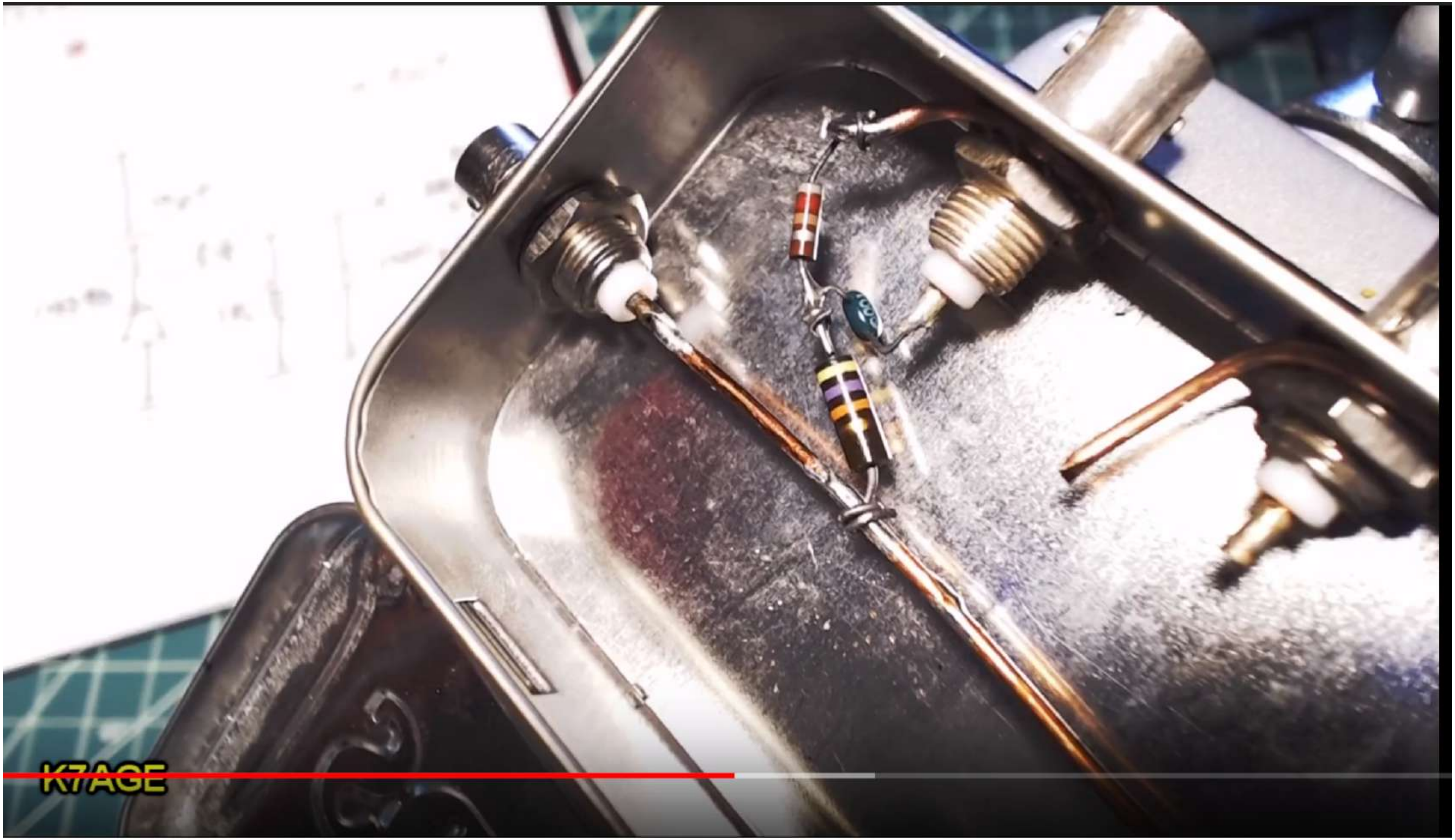


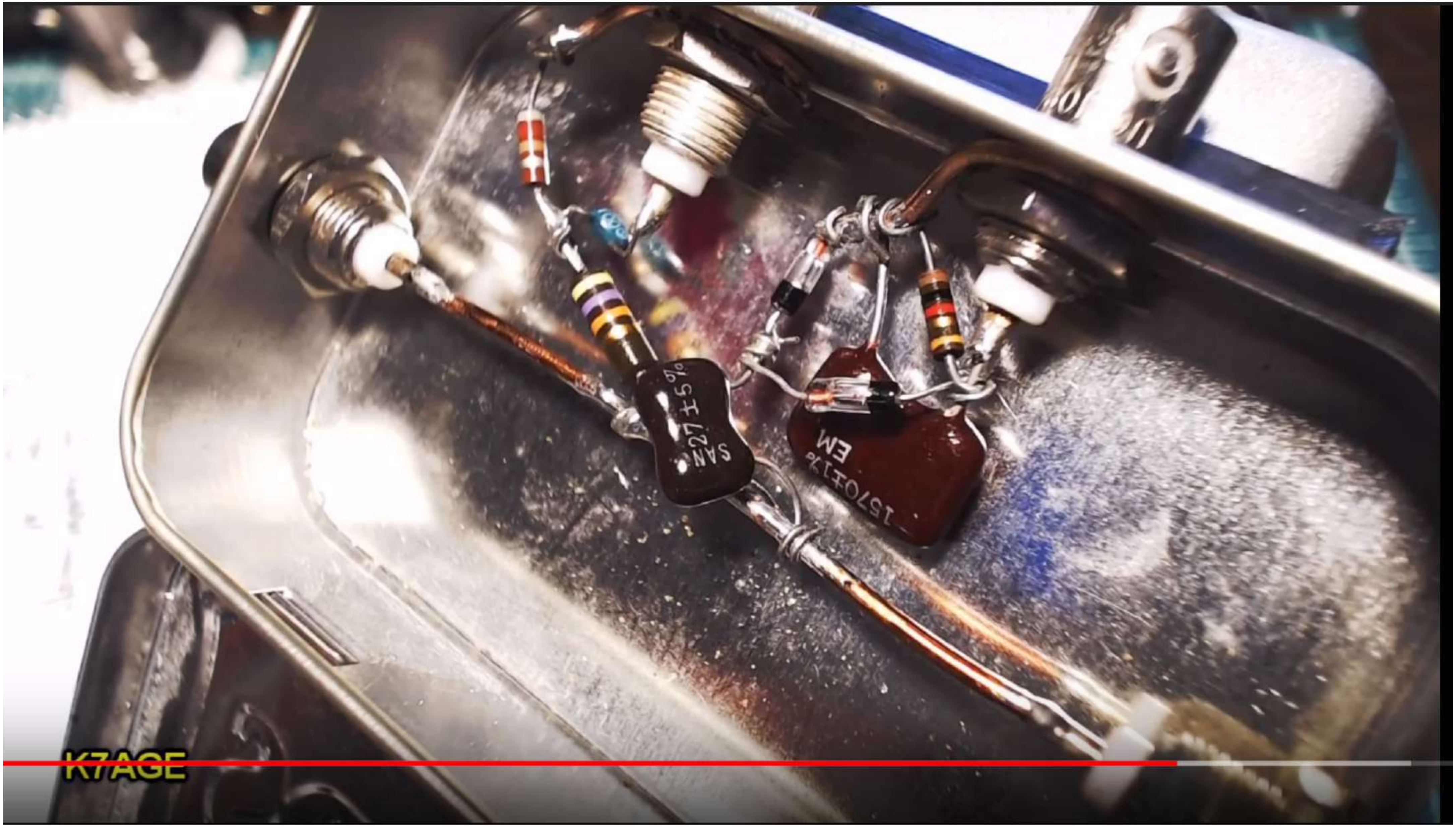
How To Build An RF Sampler Box

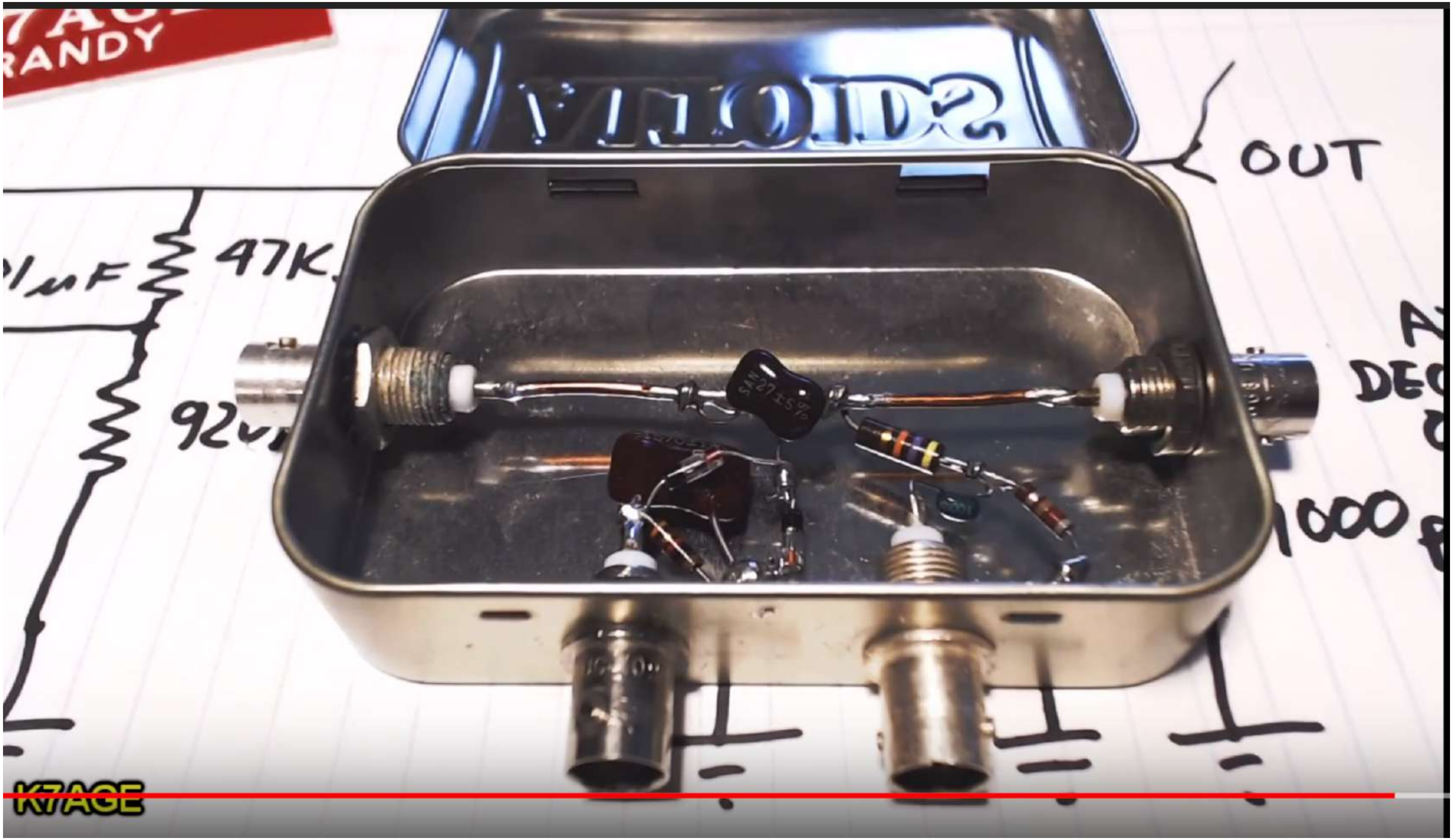

K7AGE
RANDY
The Original Celebrated
ALTOIDS
CURIOUSLY STRONG MINTS
100% Natural
PEPPERMINT
K7AGE

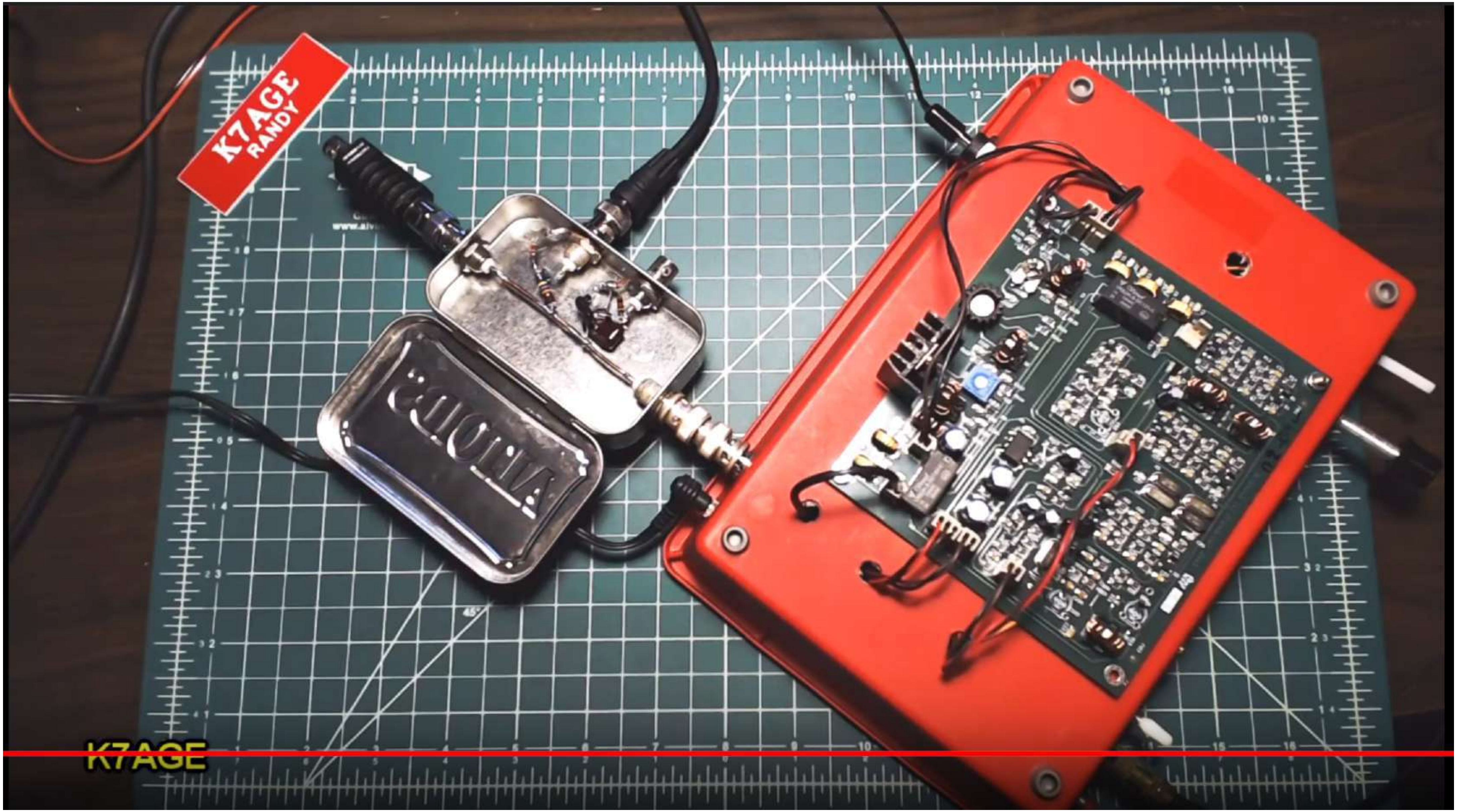

K7AGE
RANDY
ALVIN
ALTOIDS
K7AGE

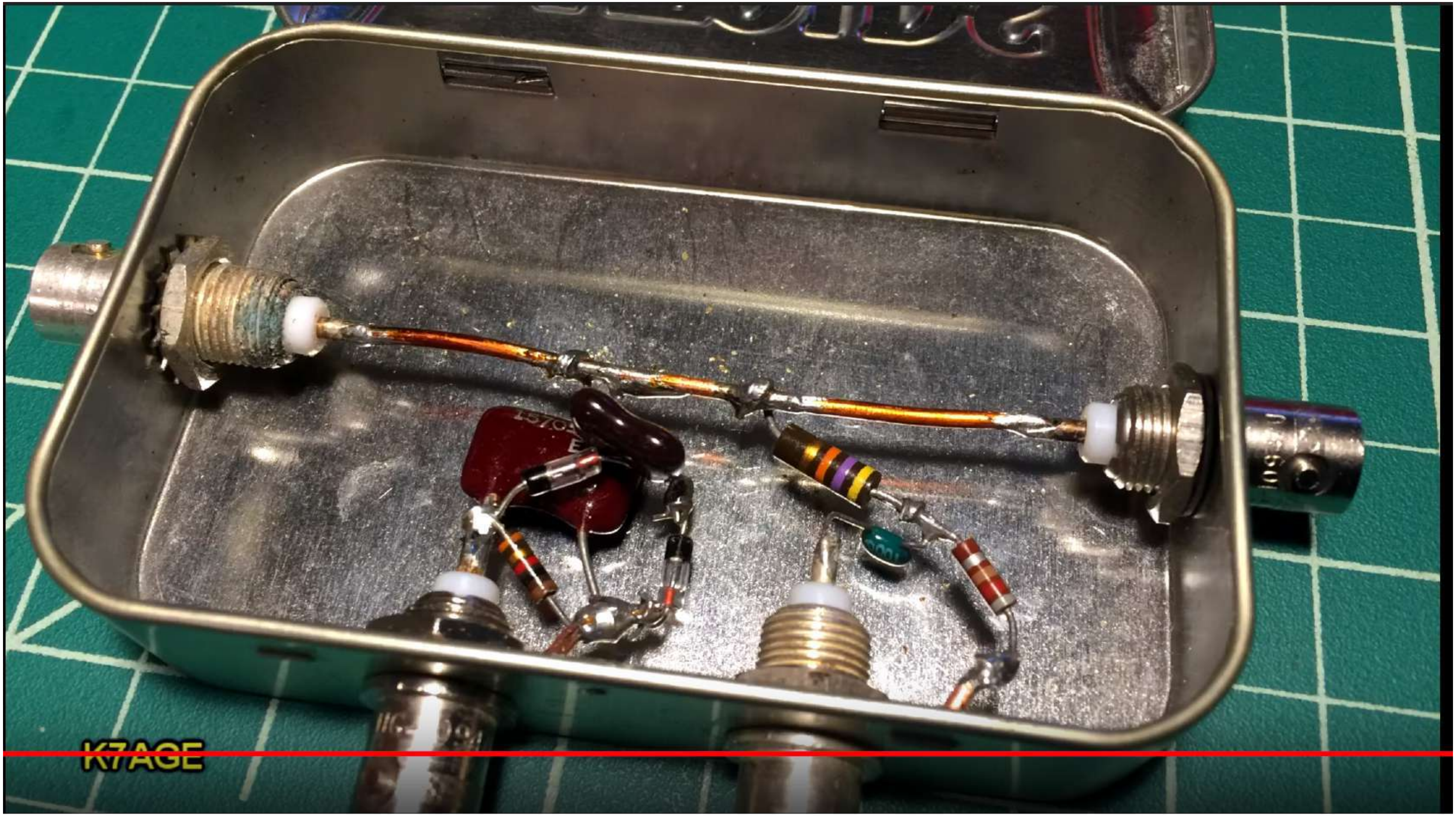

47KΩ
820Ω
10pF
1N34A
1KΩ
1000pF
AM
OUT
103K
K7AGE


K7AGE

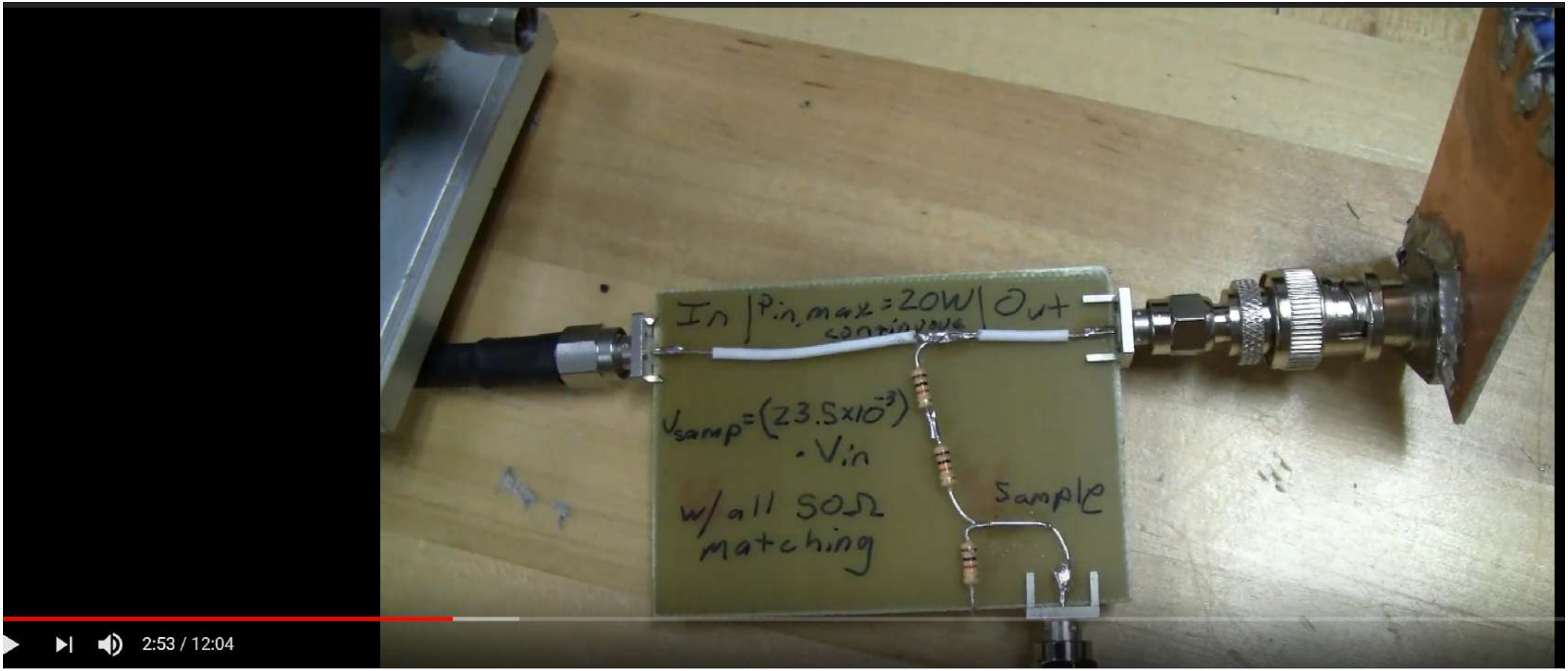

K7AGE


RANDY
ALTOIDS
OUT
47K
92
1000
K7AGE


K7AGE
RANDY
K7AGE

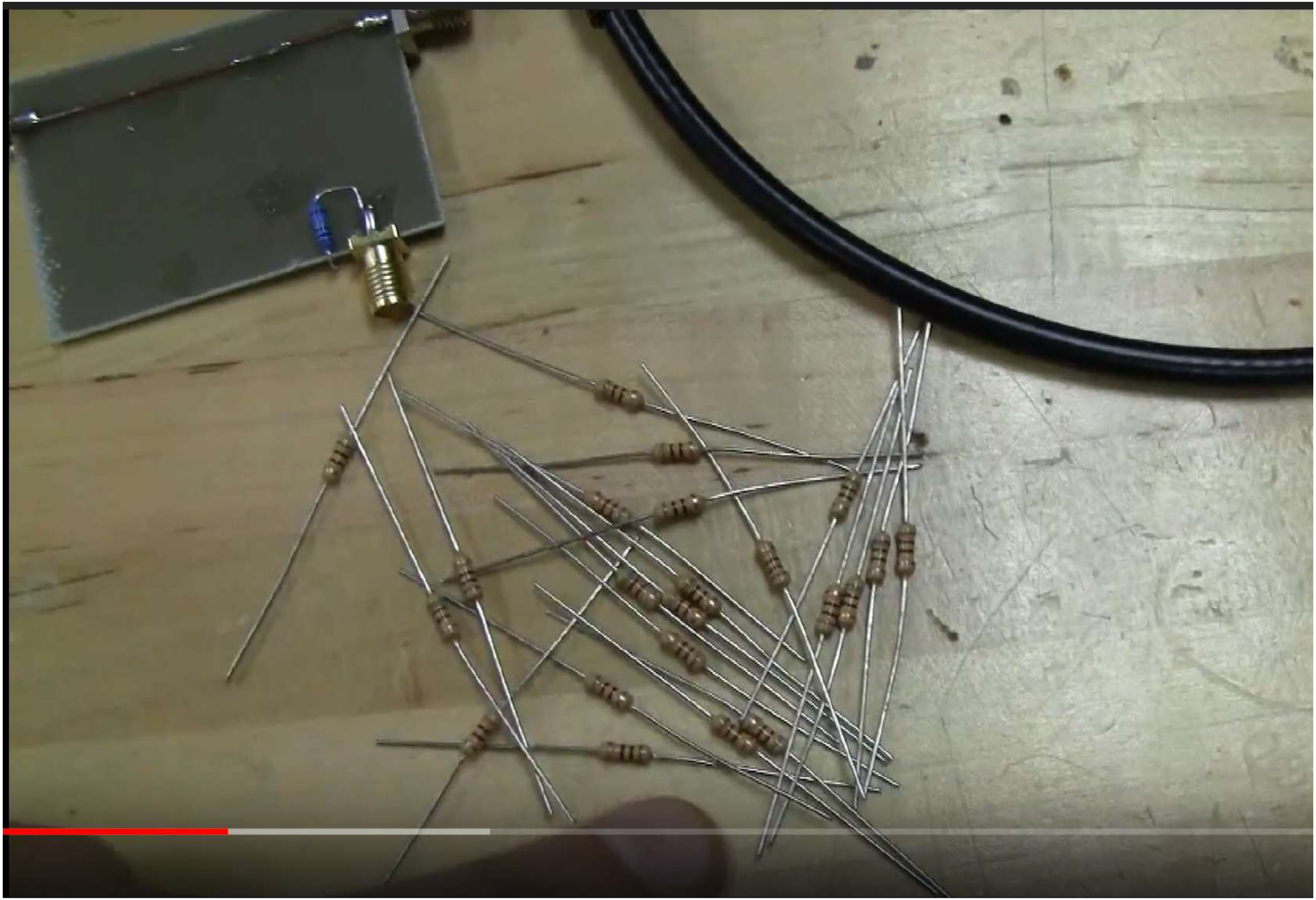

K7AGE

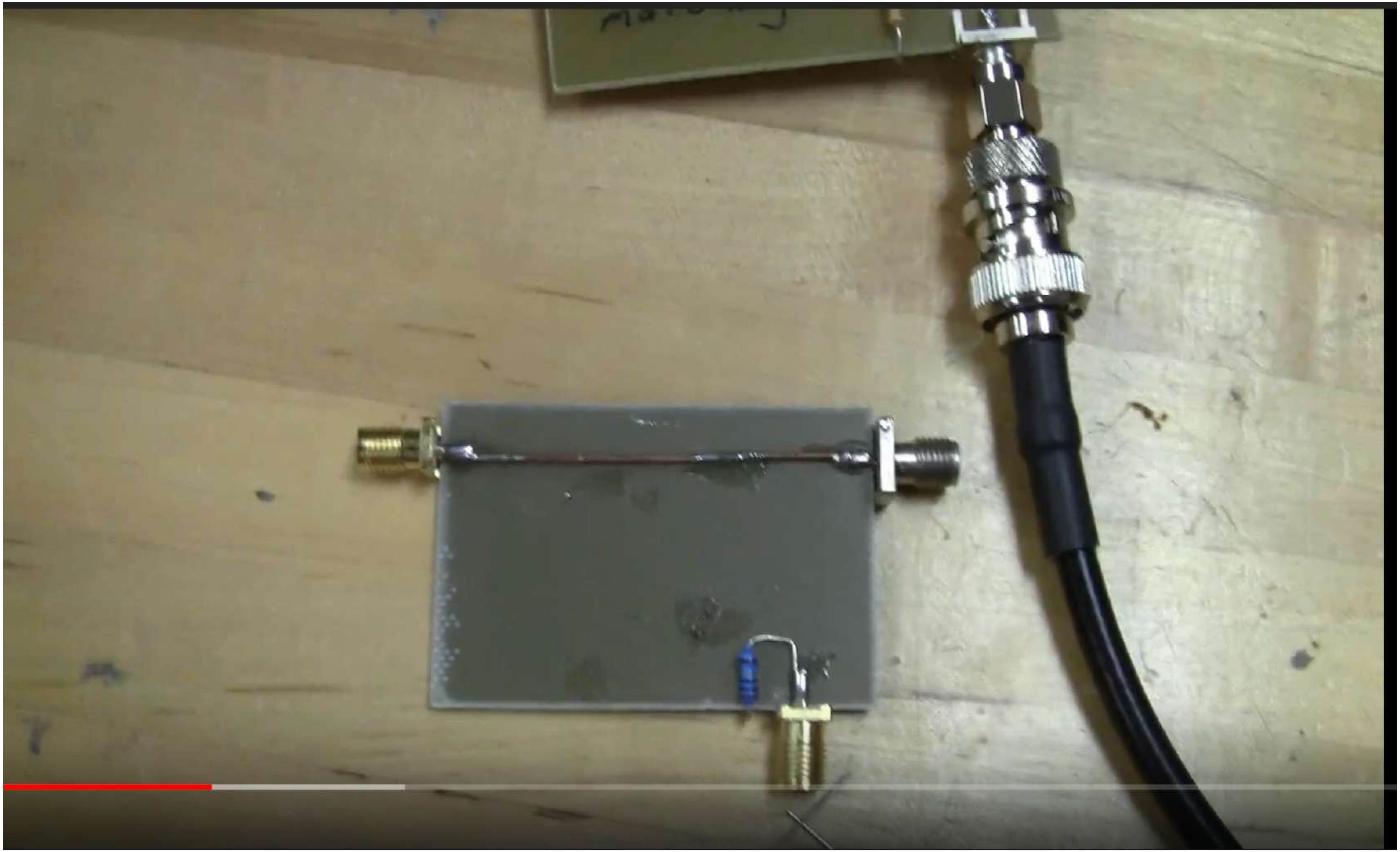

K7AGE

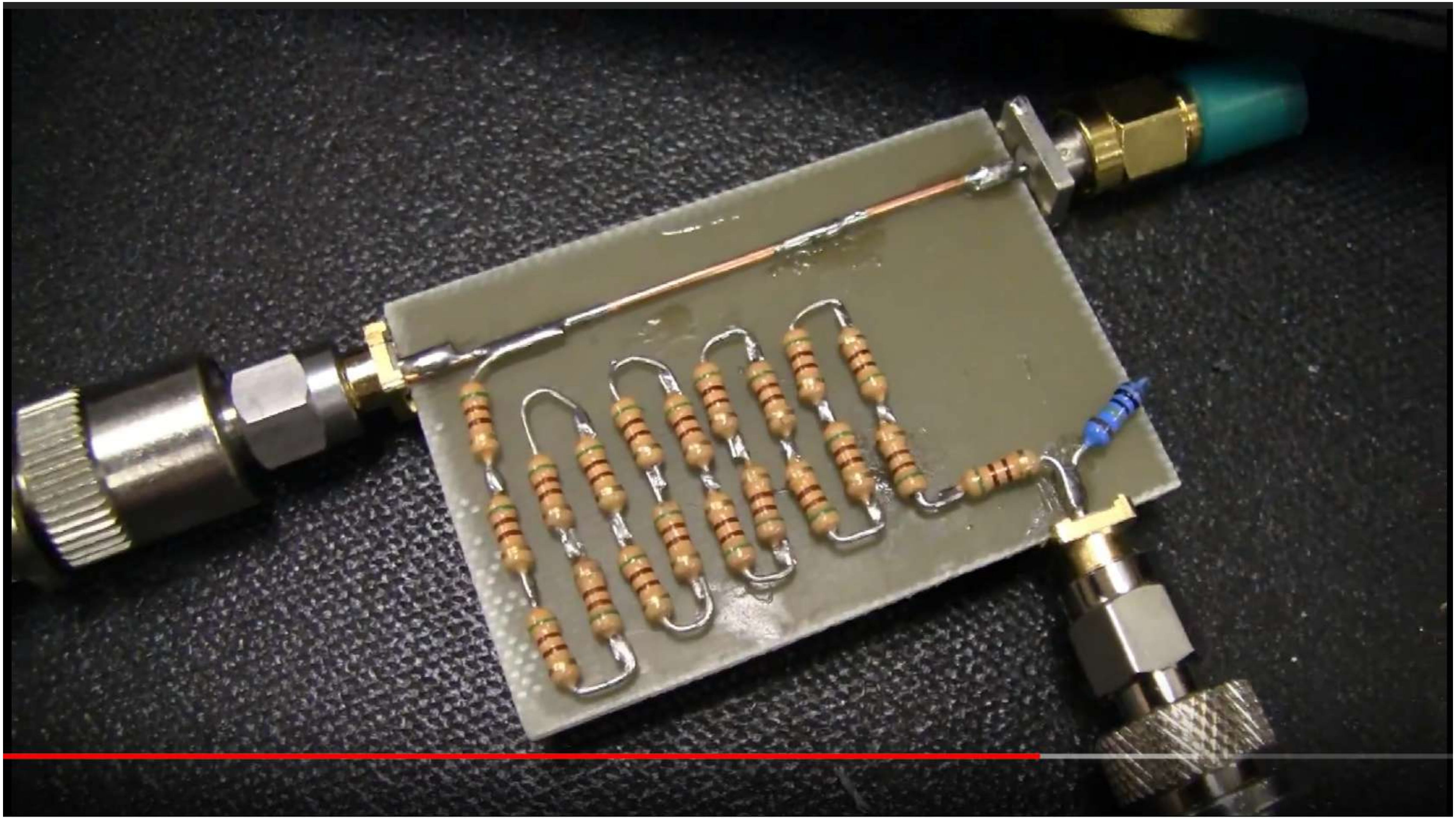


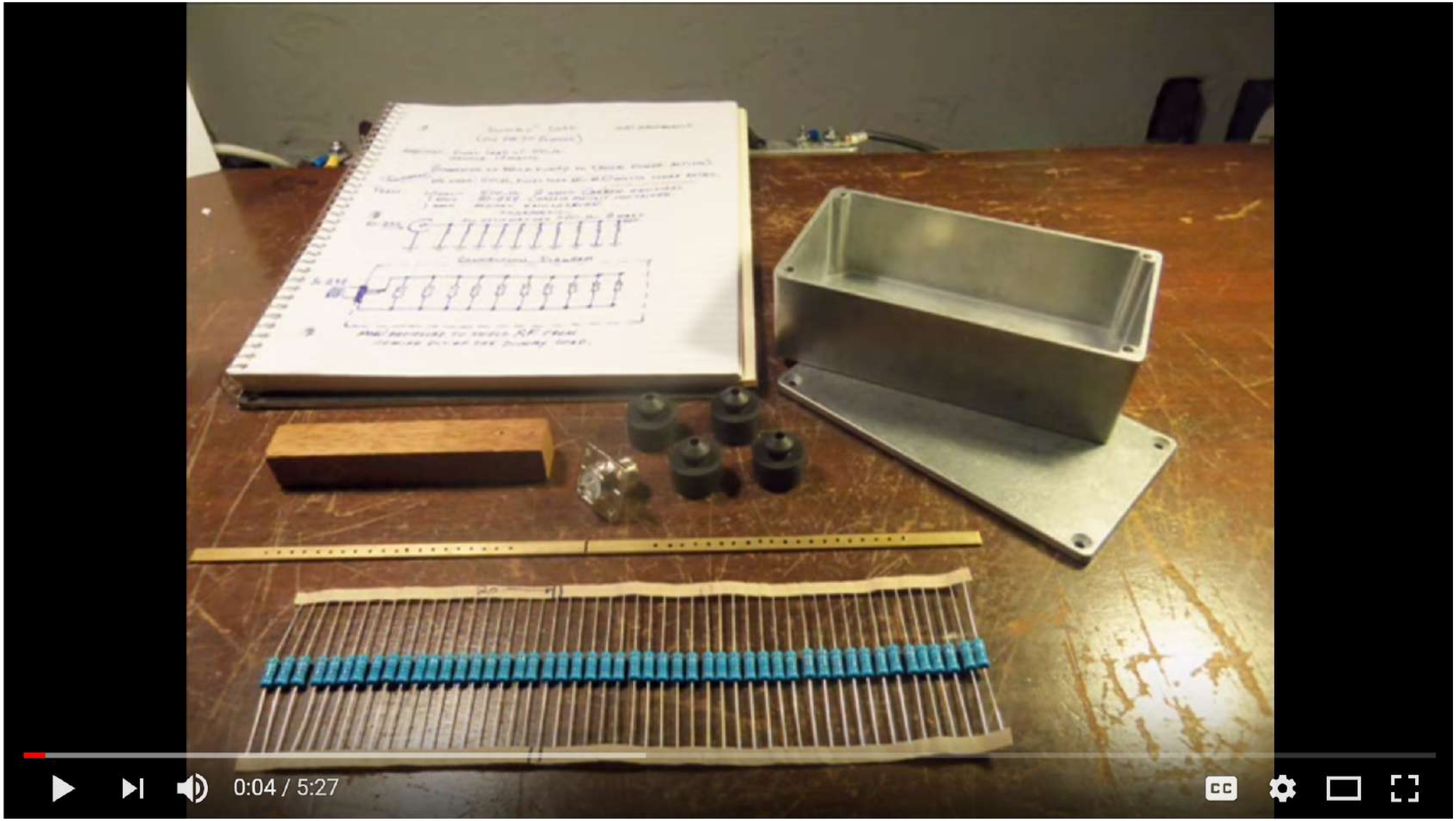
Up next

Building an RF Signal Sampler for Oscilloscope Measurements

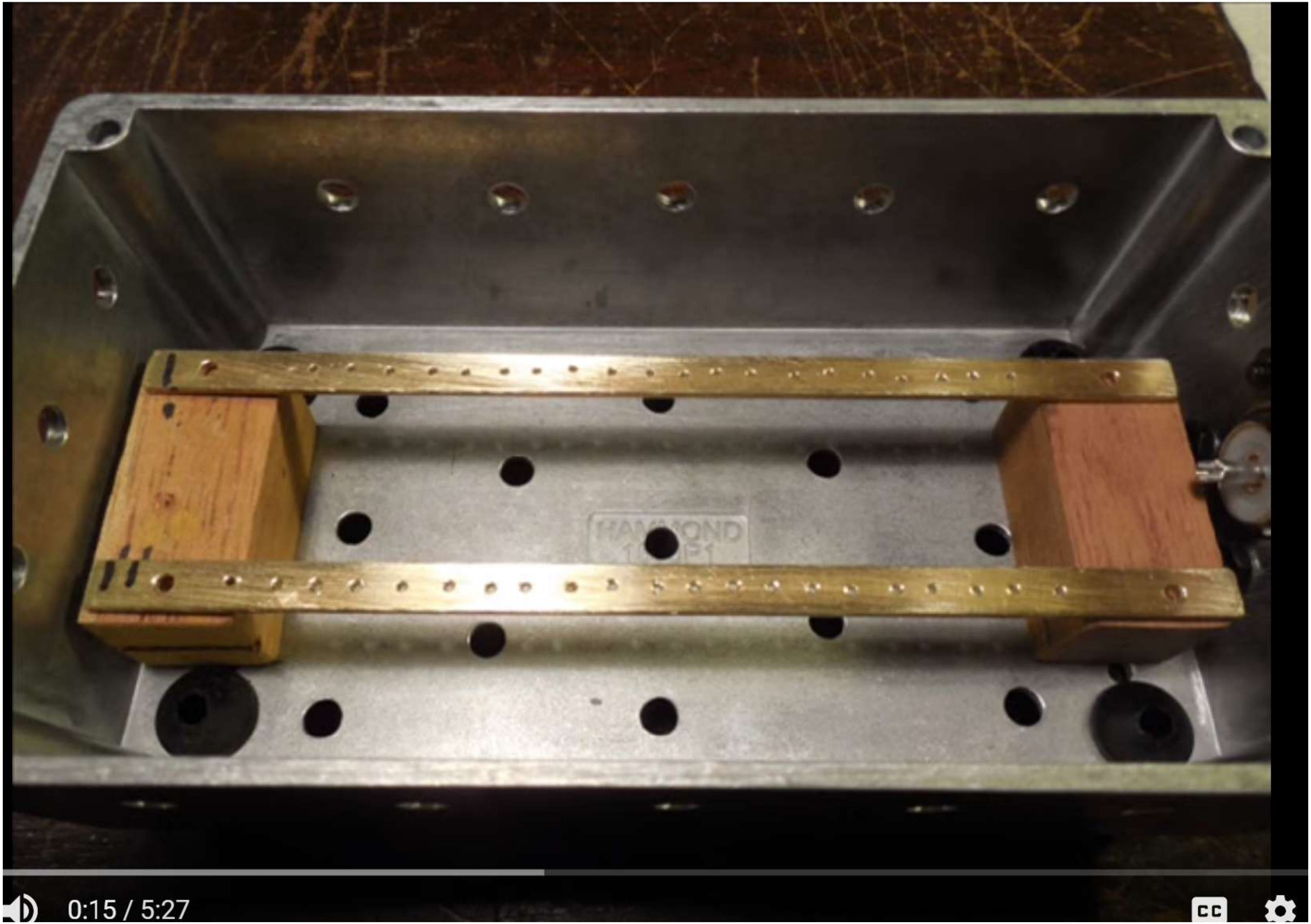


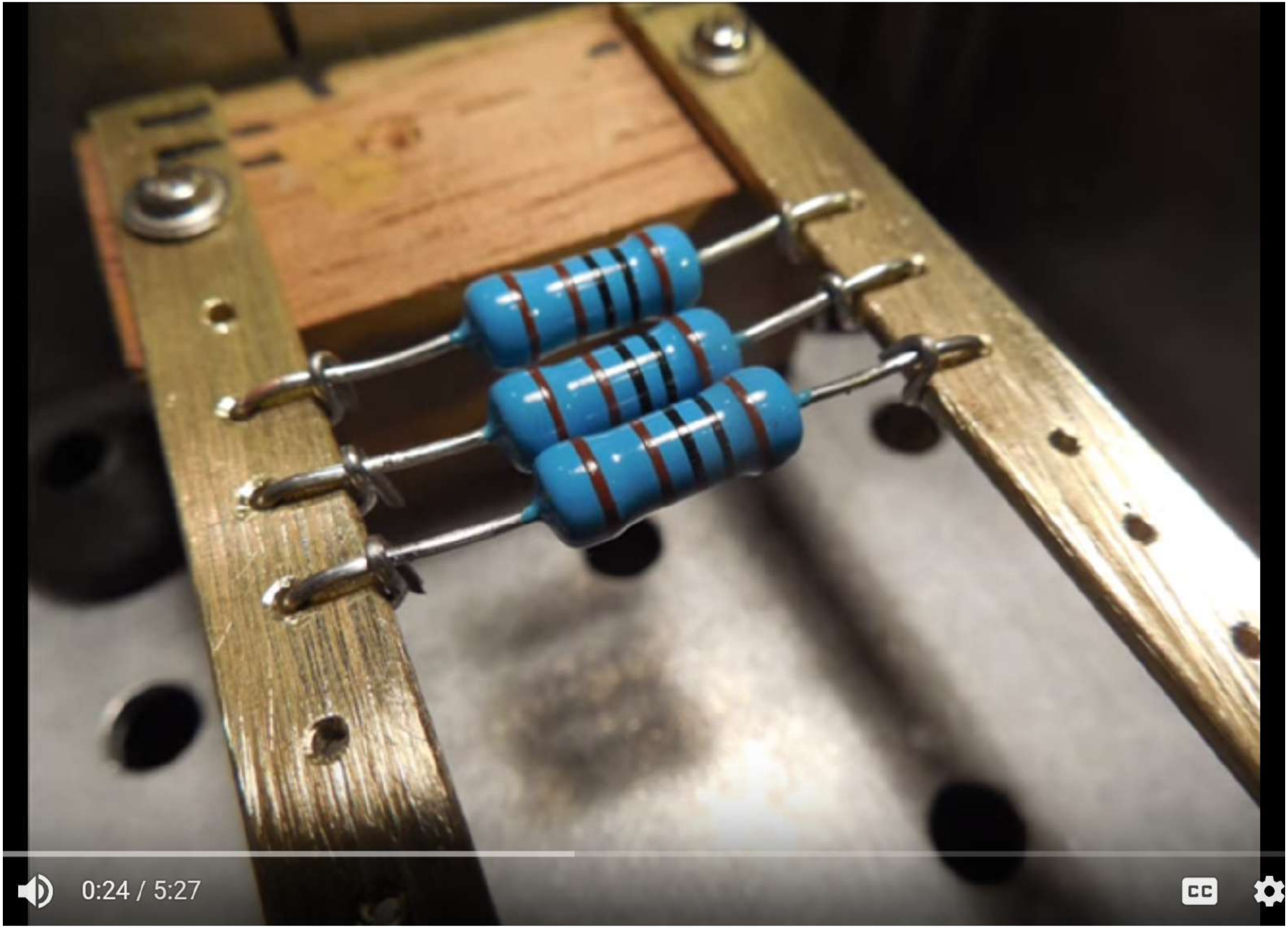


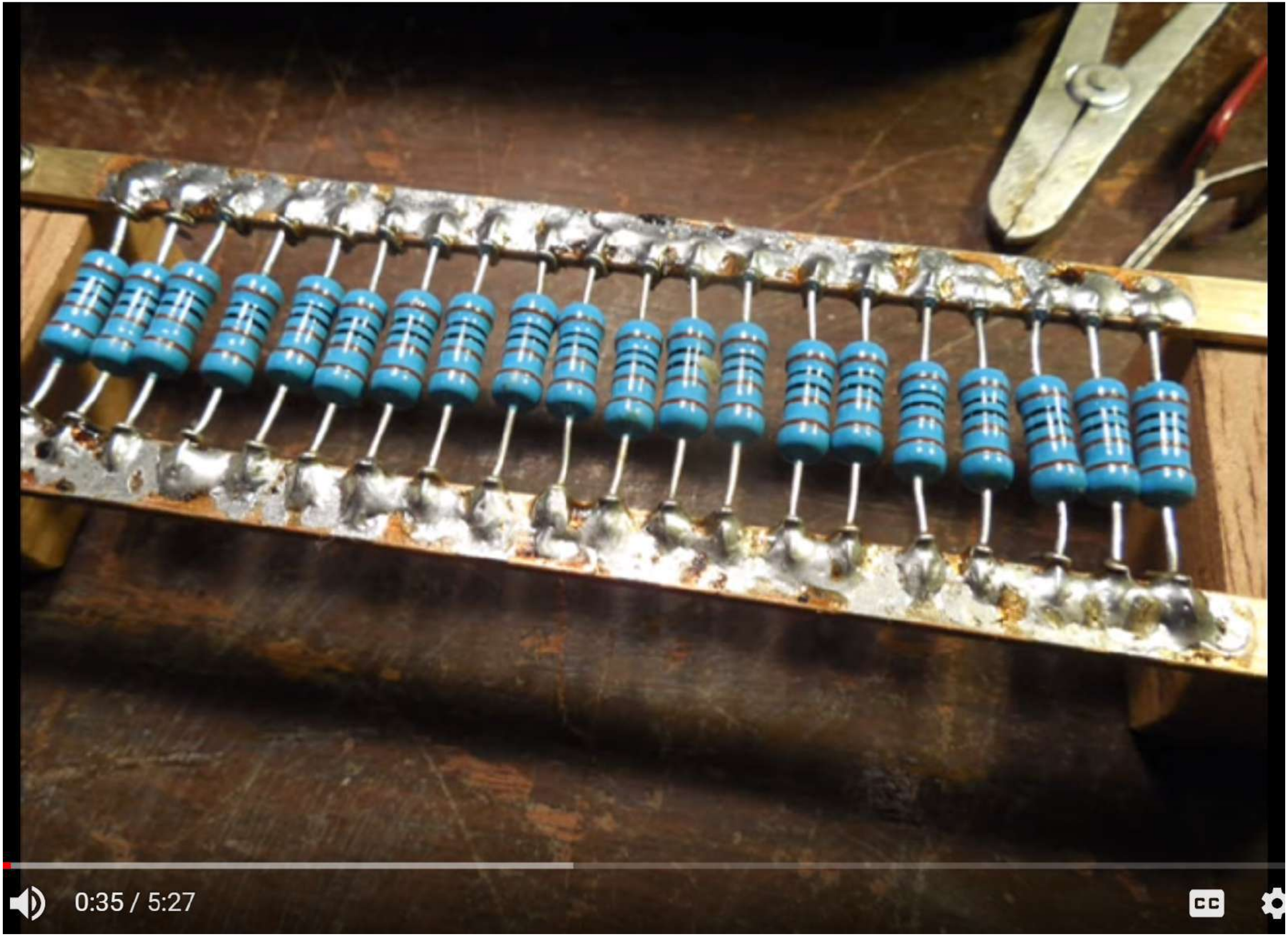




RF Dummy Load


0:15 / 5:27
CC


0:24 / 5:27
CC

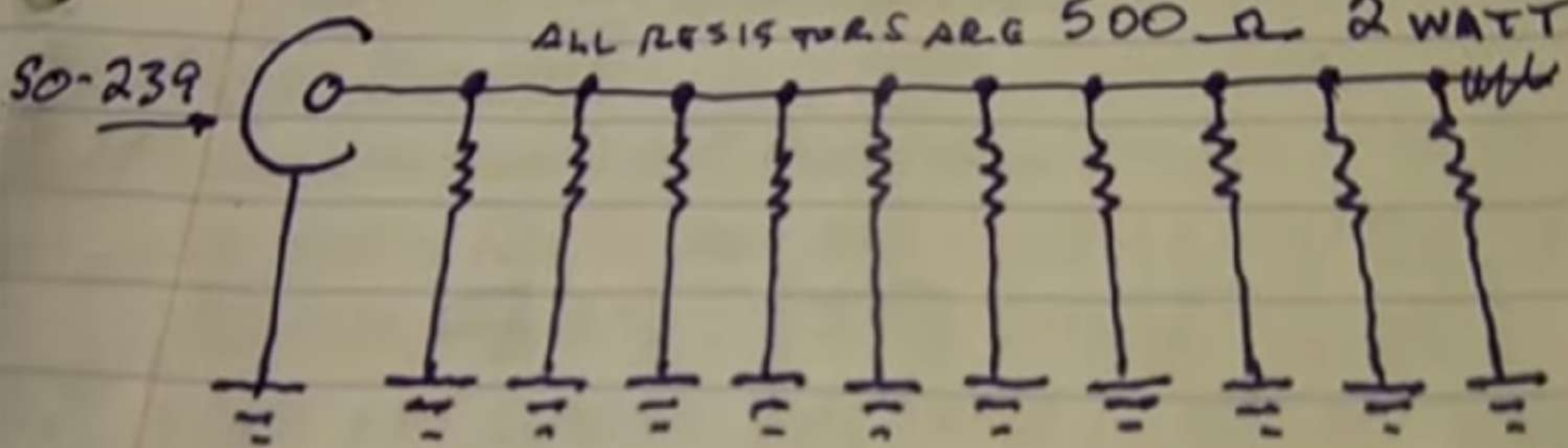

0:35 / 5:27

NEVER USE WIRE[WOUND]

PARTS:

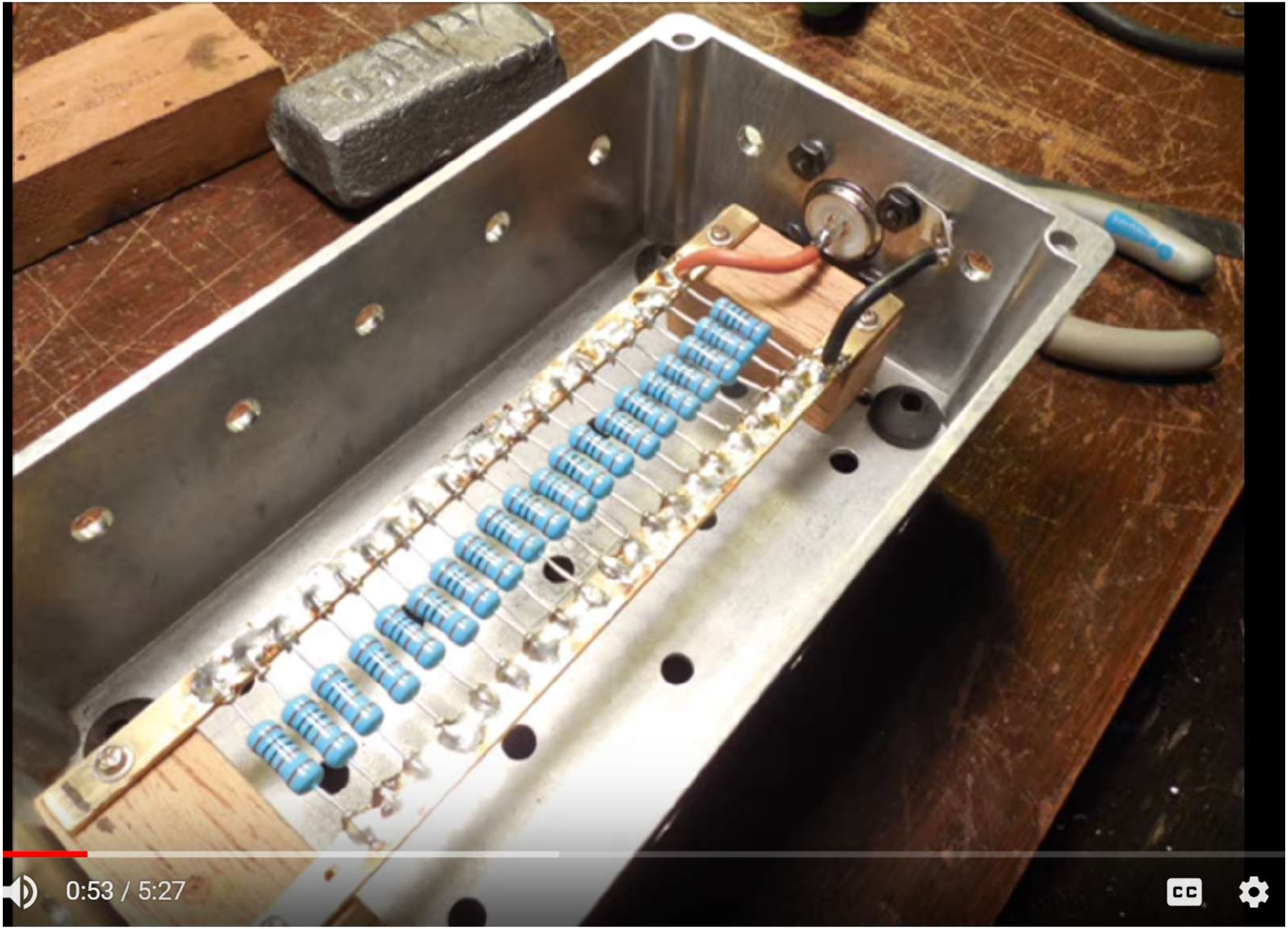
10 each	500 Ω	2 WATT CARBON RESIST[OR]
1 each	SO-239	CHASSIS MOUNT CONTAINE[R]
1 each	METAL	ENCLOSURE

SCHEMATIC

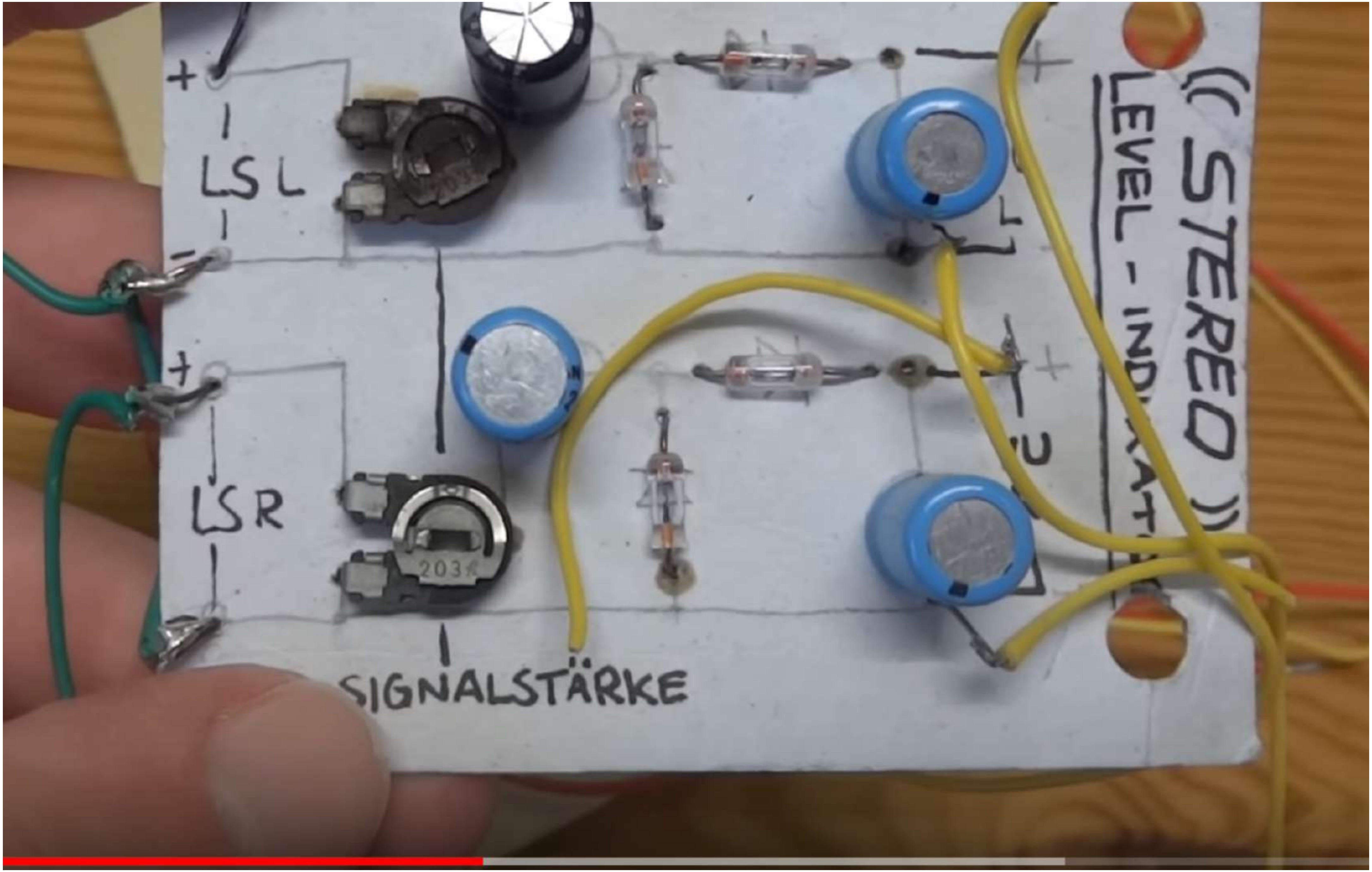


CONNECTION DIAGRAM

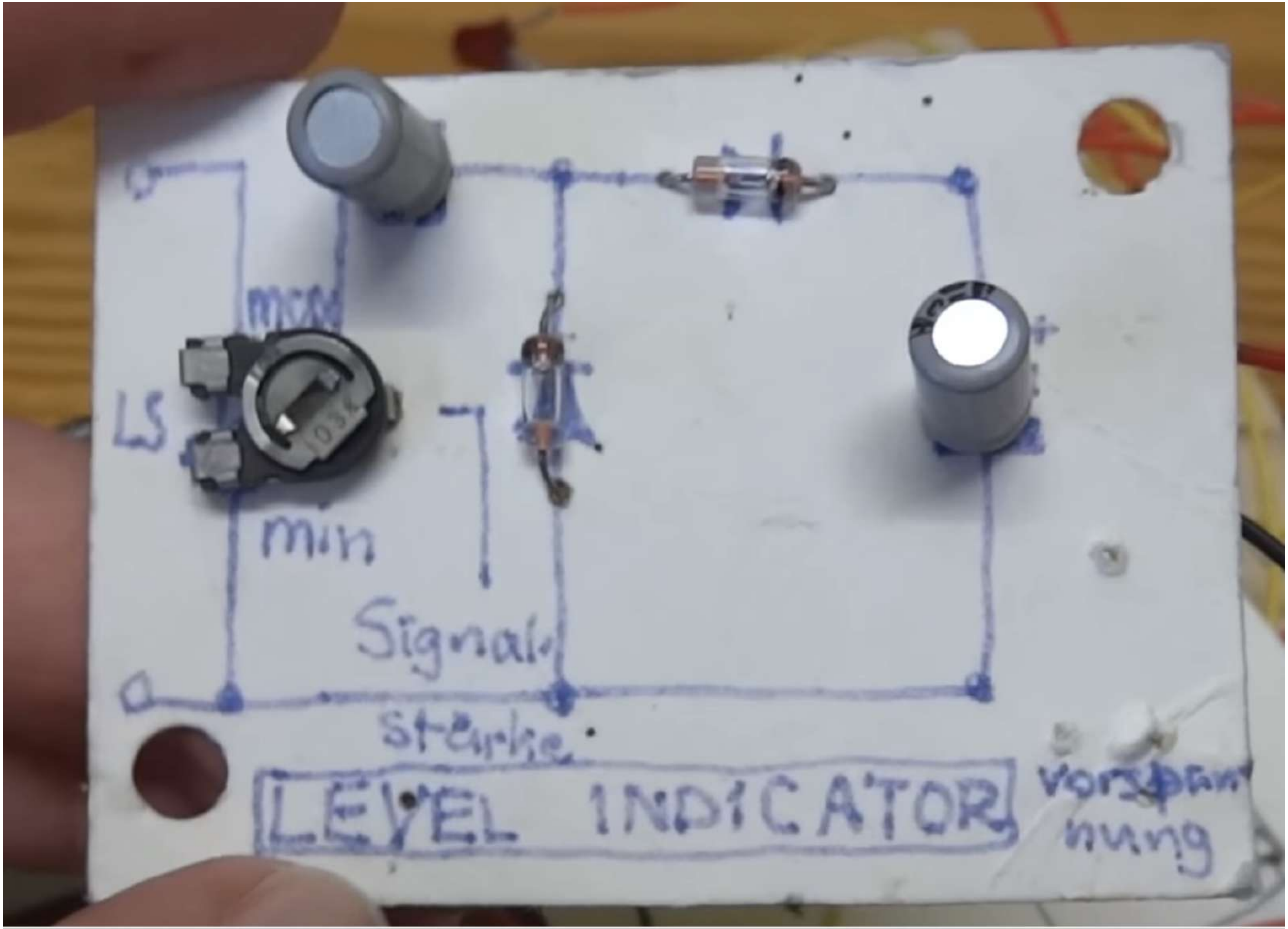
2:23 / 5:27

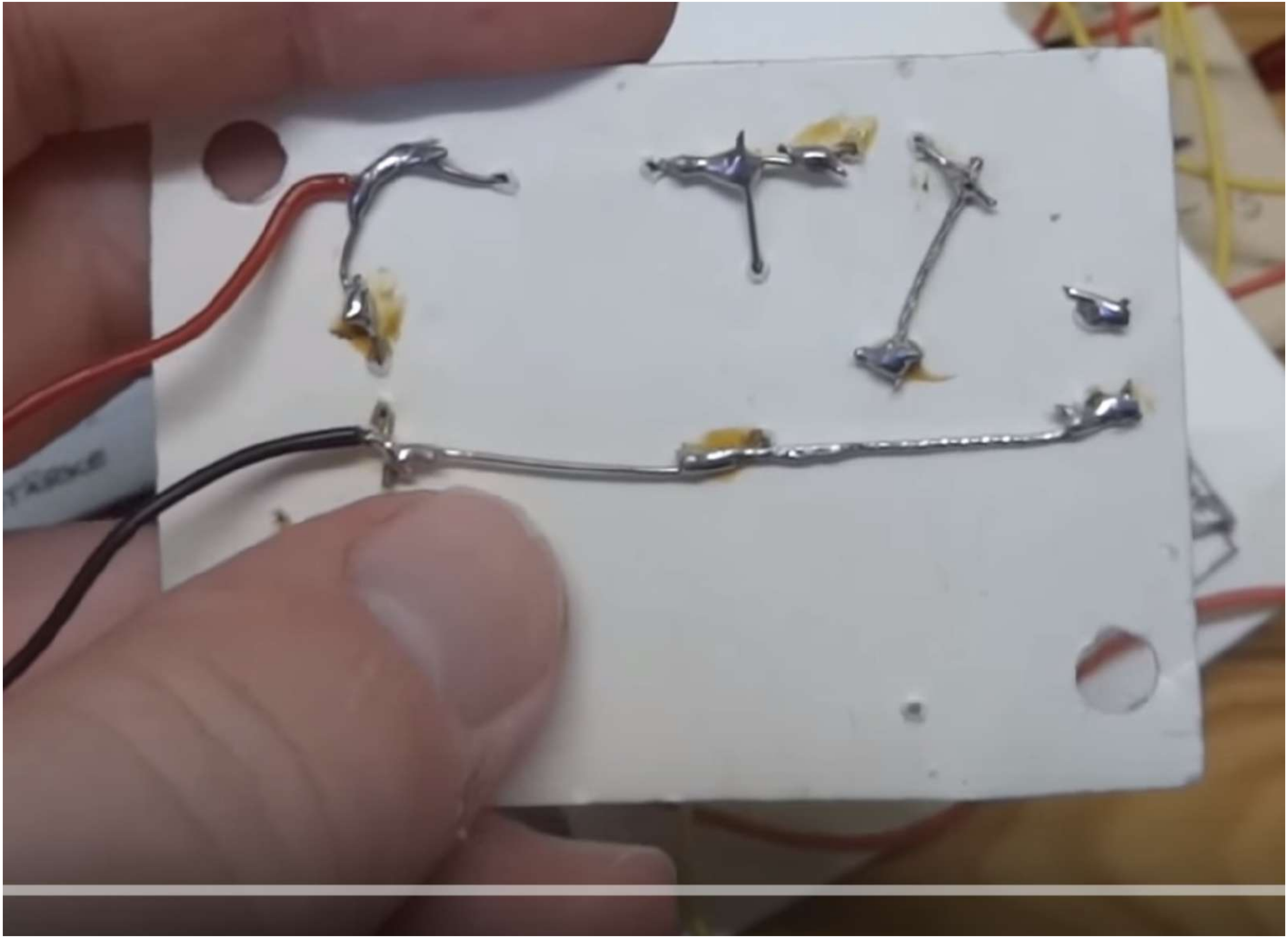

0:53 / 5:27

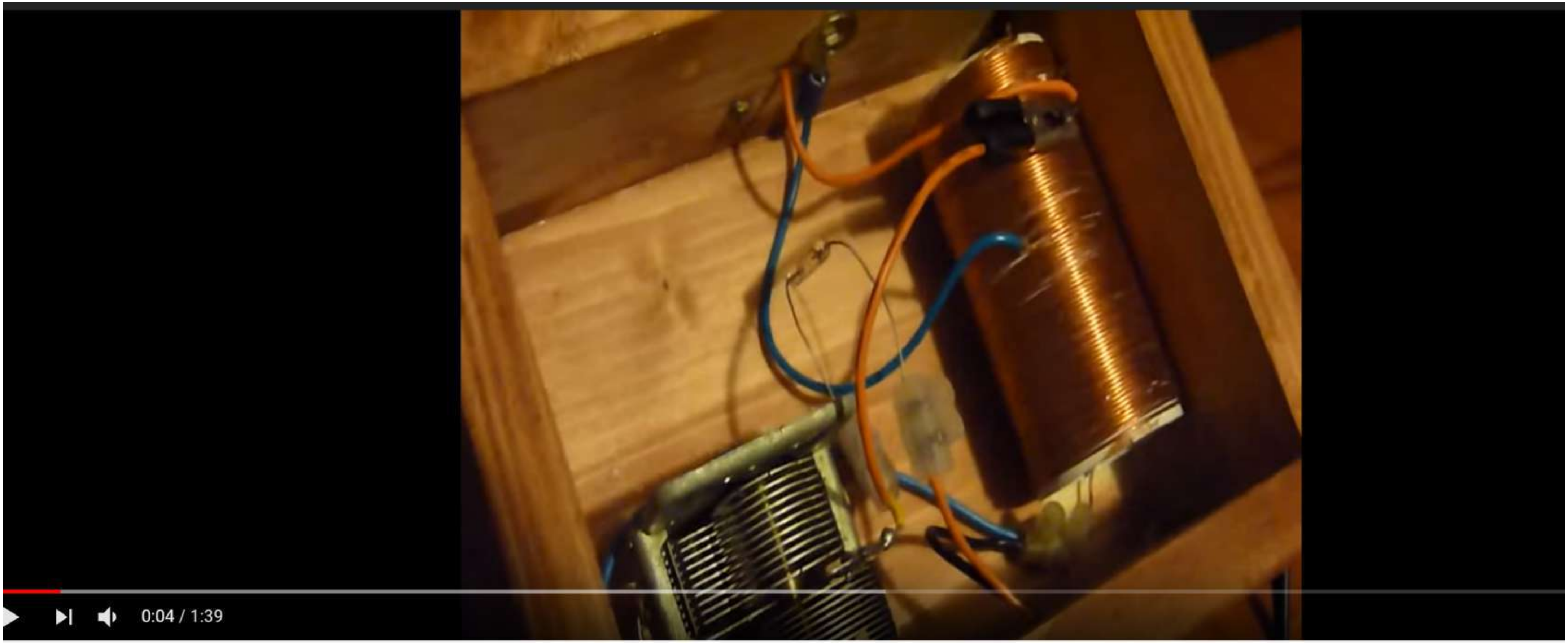

"Dummy" LOAD
(FOR HW-20 PAWNEE)
RESISTANCE
IN
PARALLEL
DUMMY LOAD
50 OHMS
20 WATTS
3:47 / 5:27



LSL
LSR
SIGNALSTÄRKE
((STEREO))
LEVEL - INDIKATOR

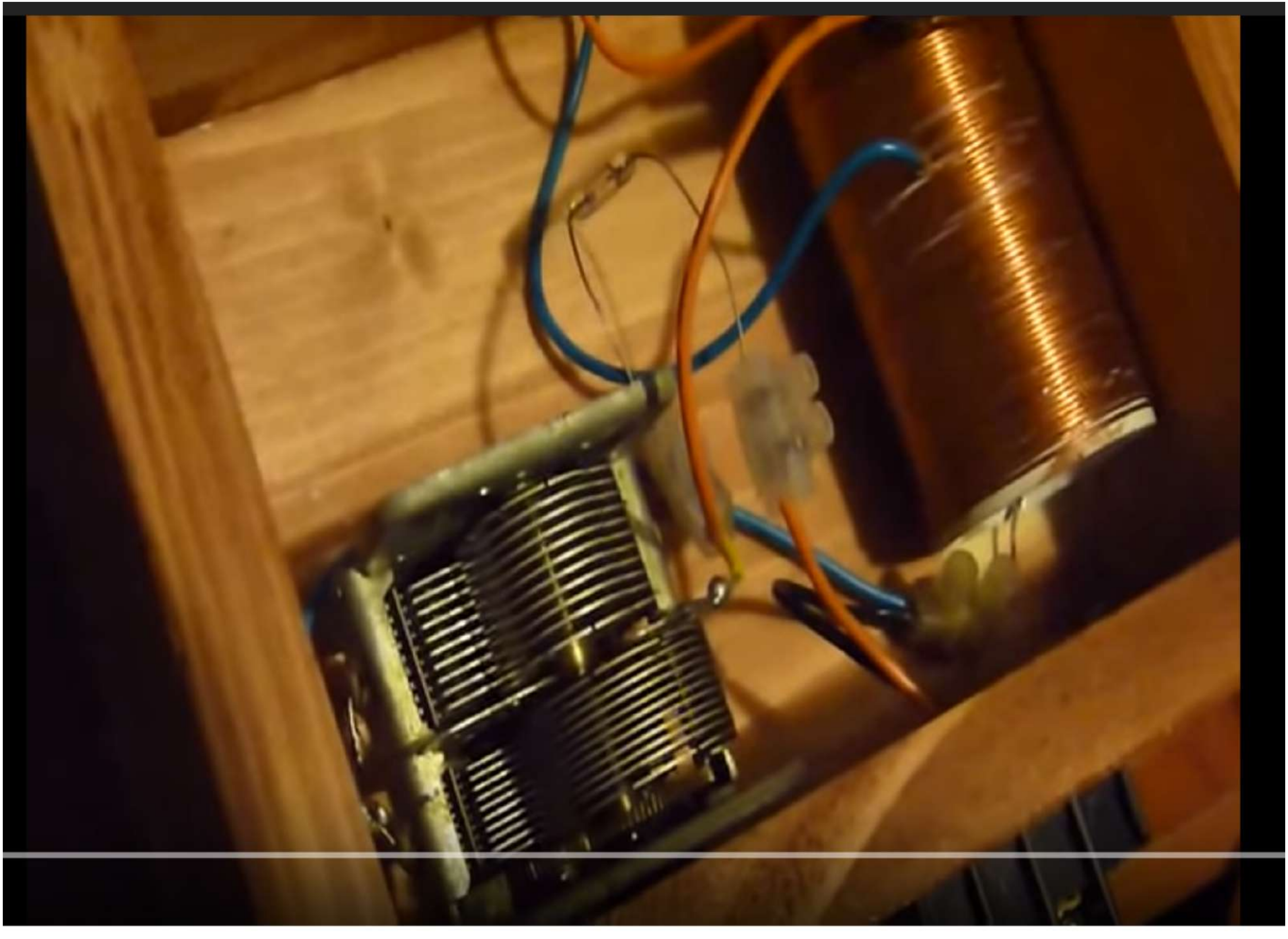

max
LS
min
Signal-
stärke
LEVEL INDICATOR
Vorspan
nung

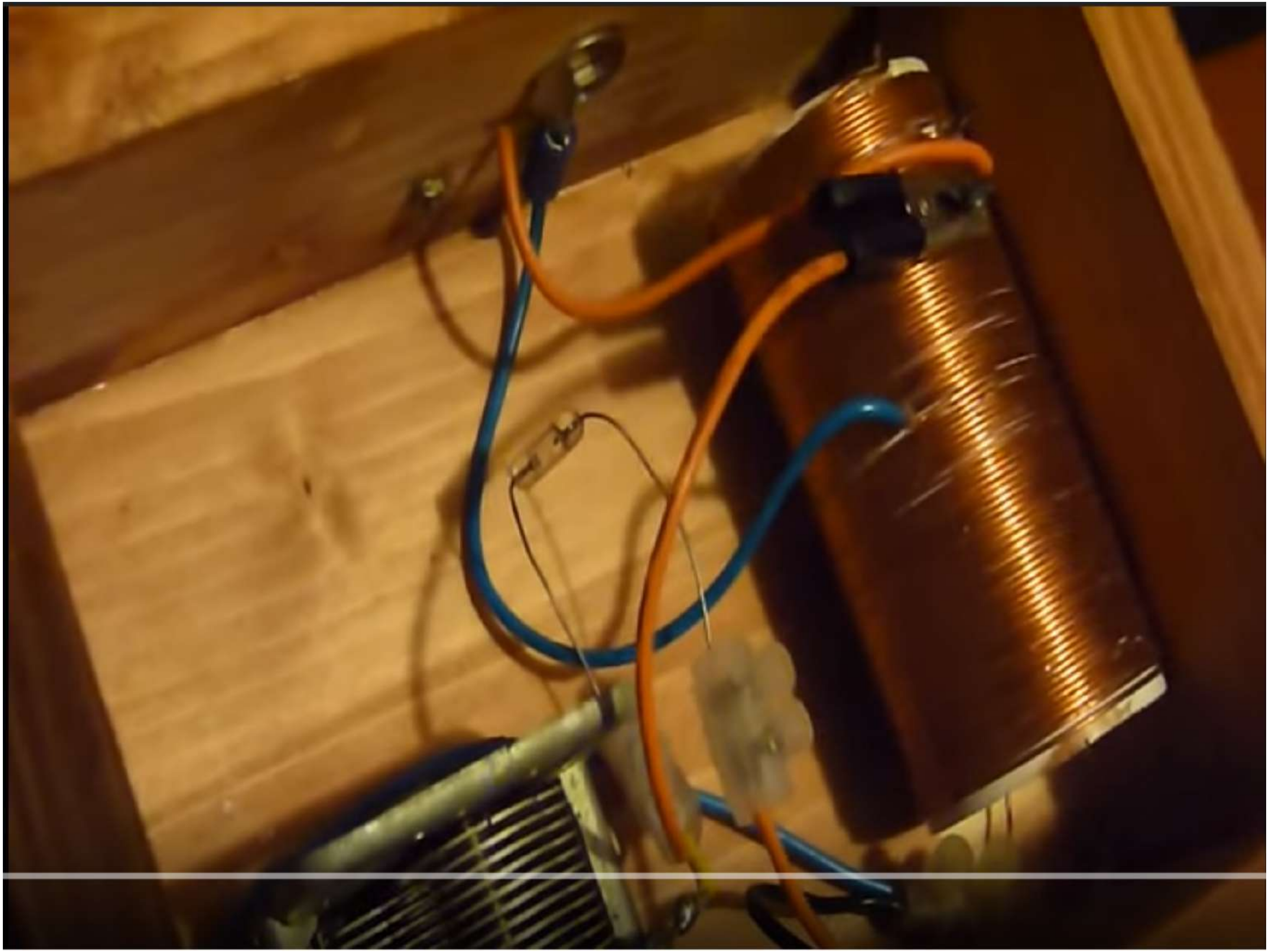


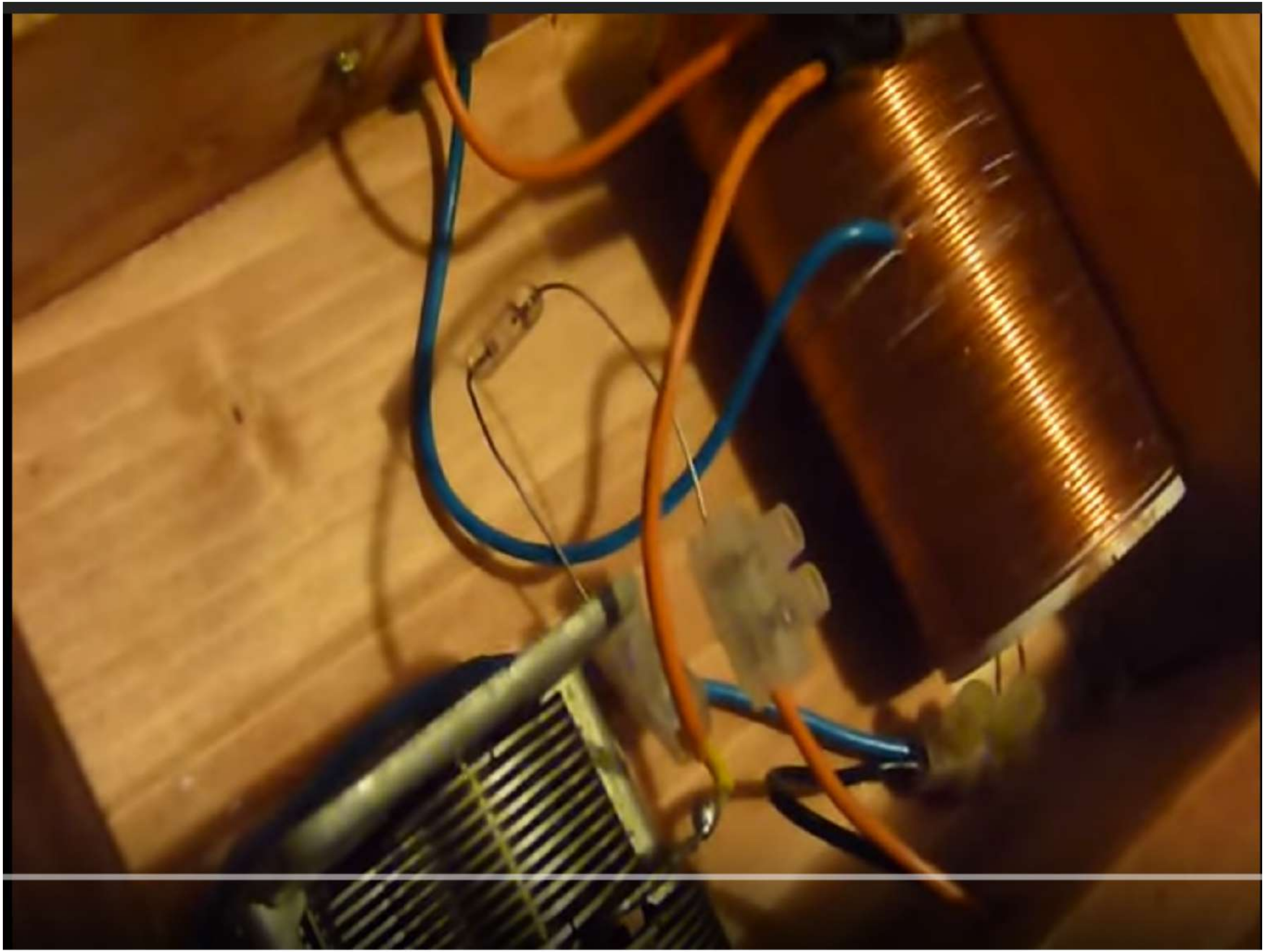


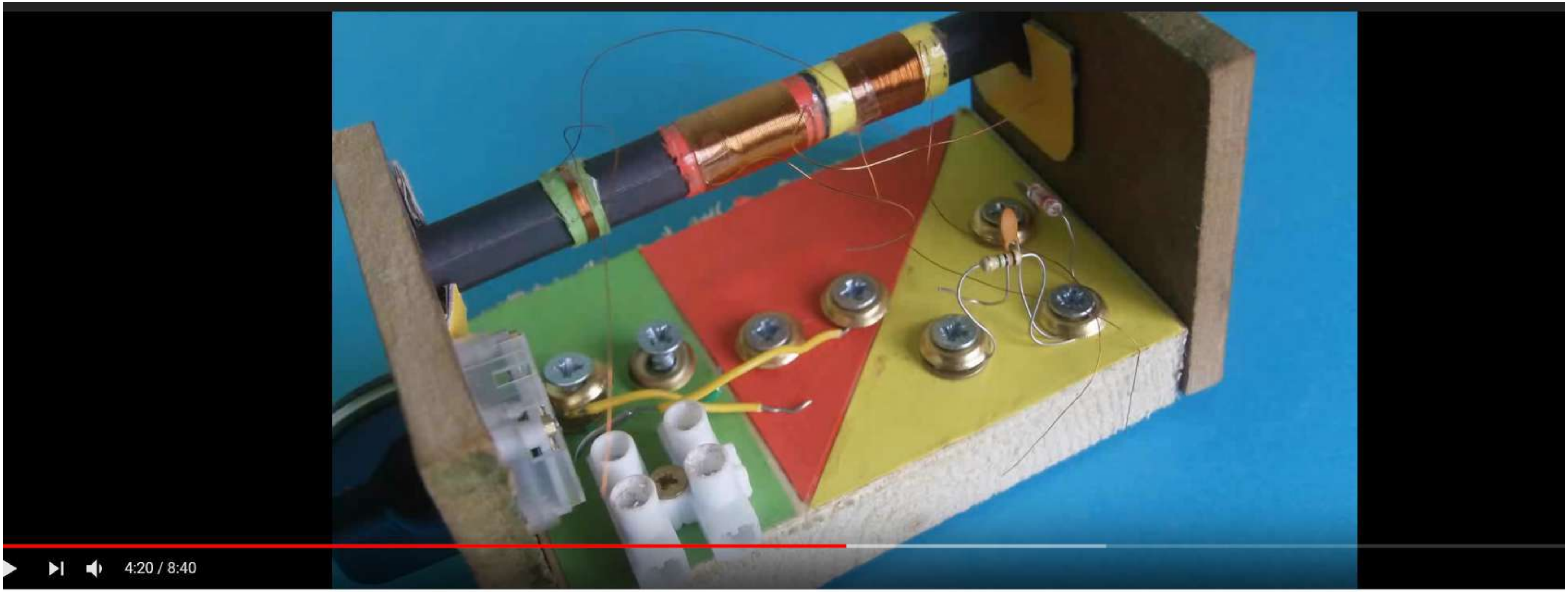
Up next

Radio a galena



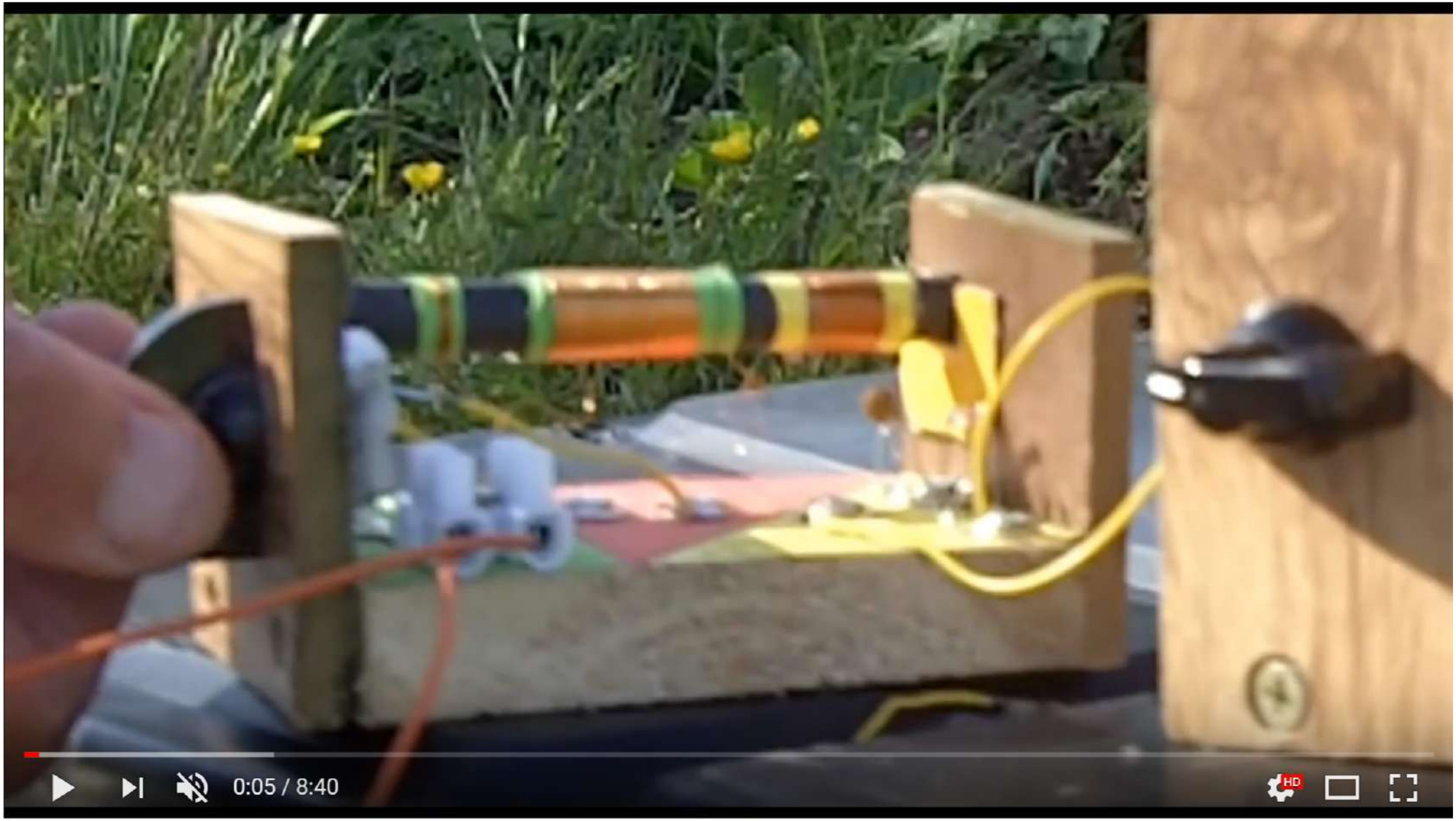


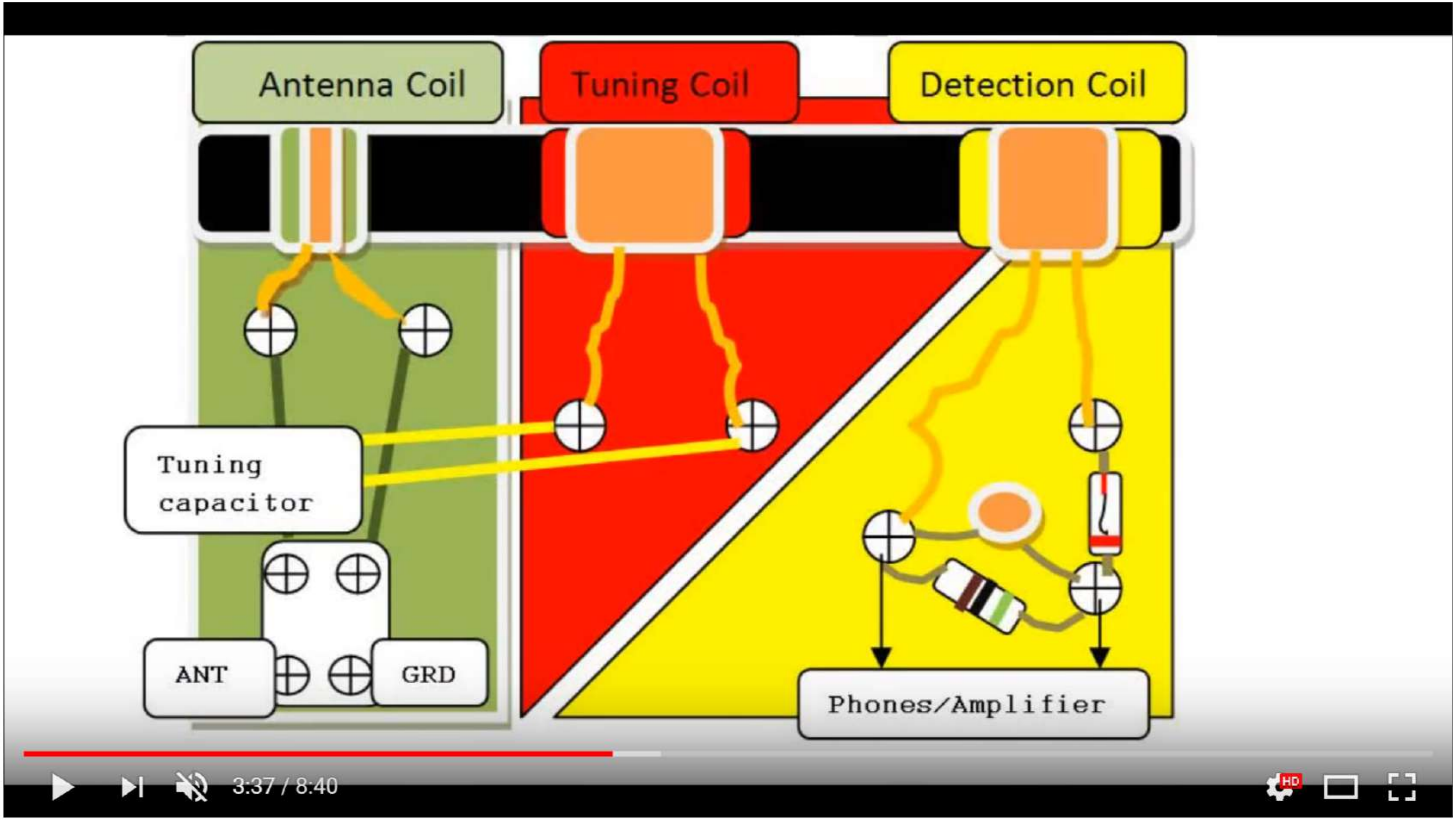


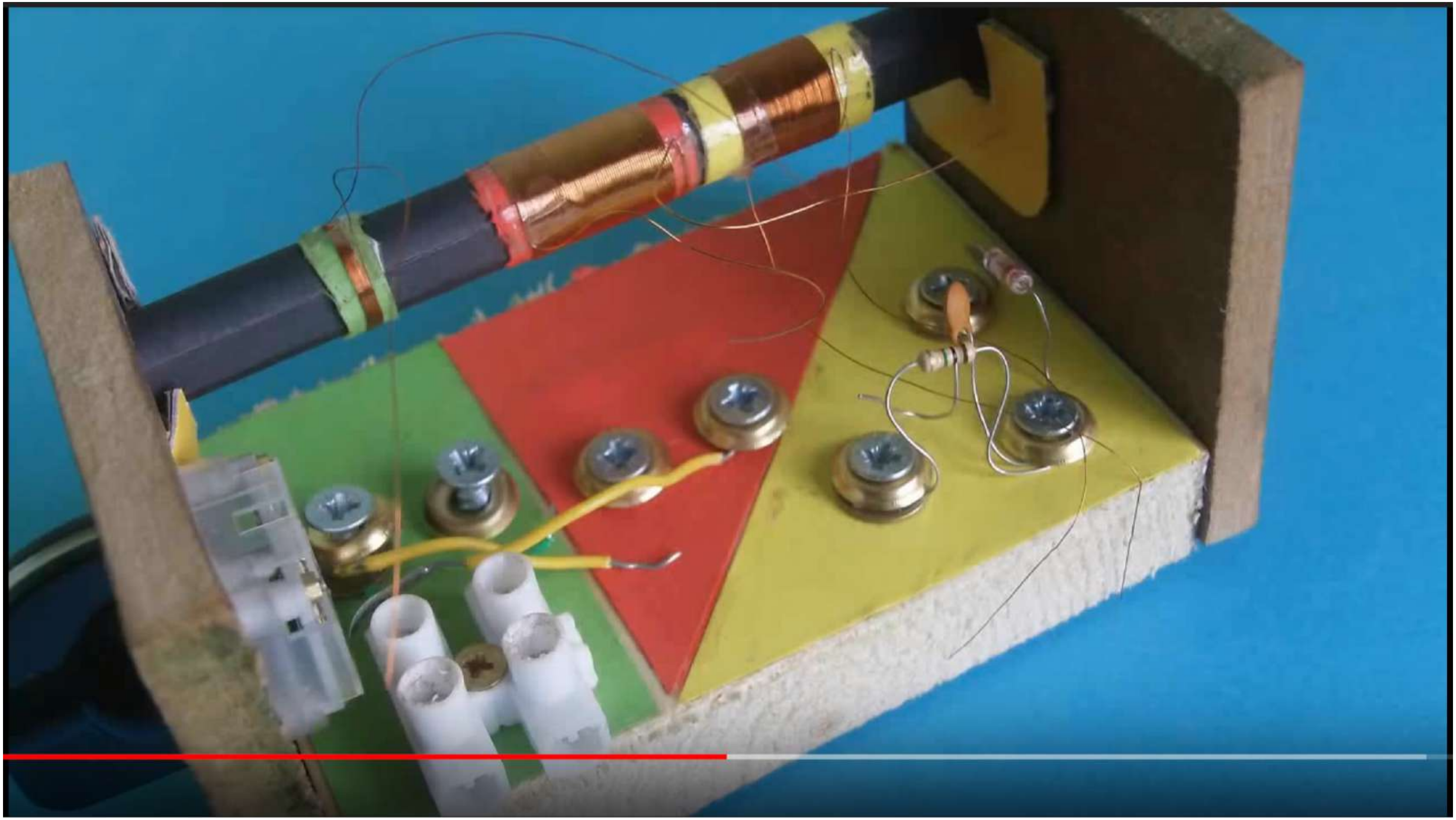


Up next

Making a Crystal Radio (How to make a Crystal Radio)

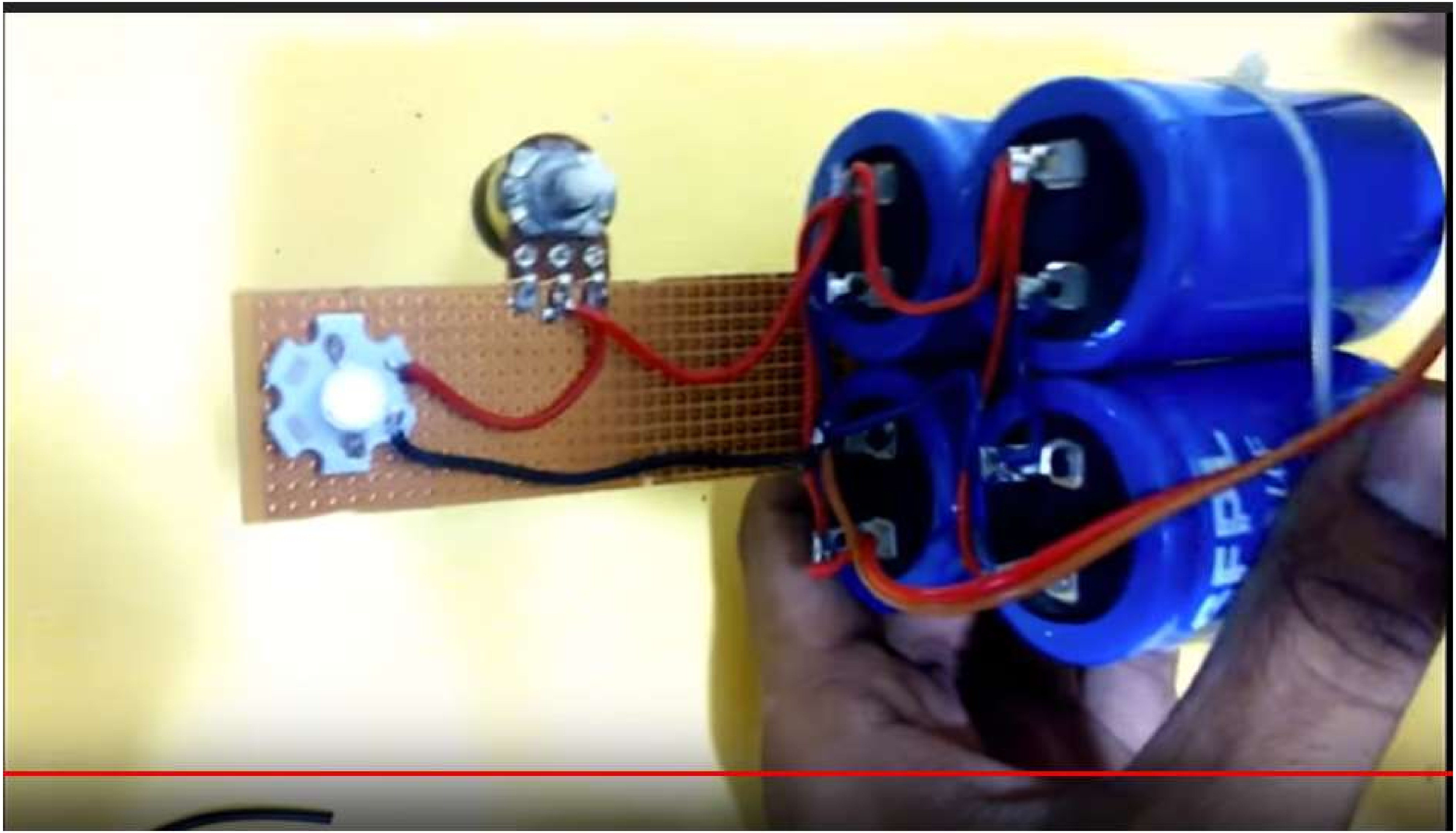

0:05 / 8:40
HD


Antenna Coil
Tuning Coil
Detection Coil
Tuning
capacitor
ANT
GRD
Phones/Amplifier
3:37 / 8:40



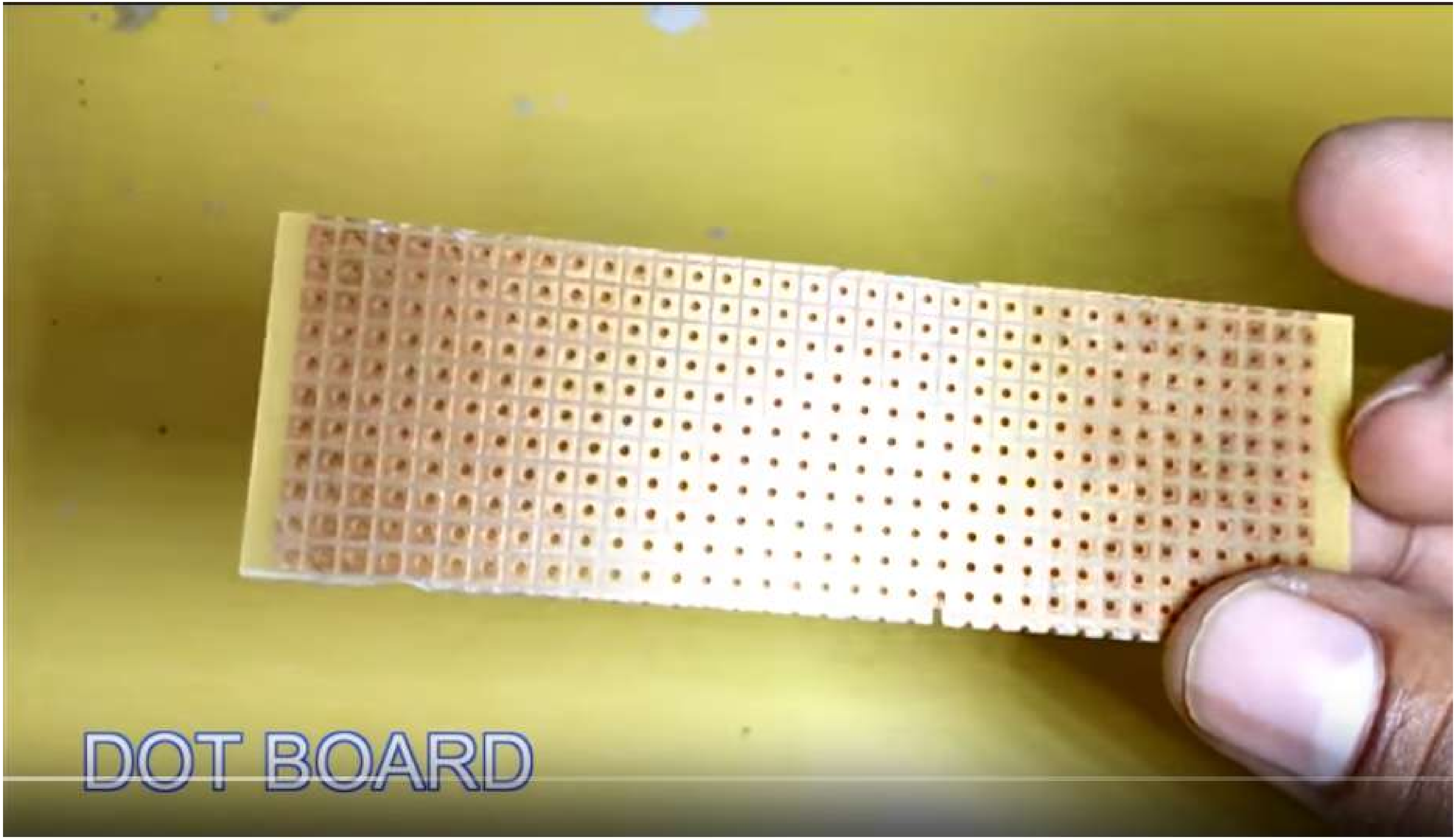

fix tip of coil end to
base with tape

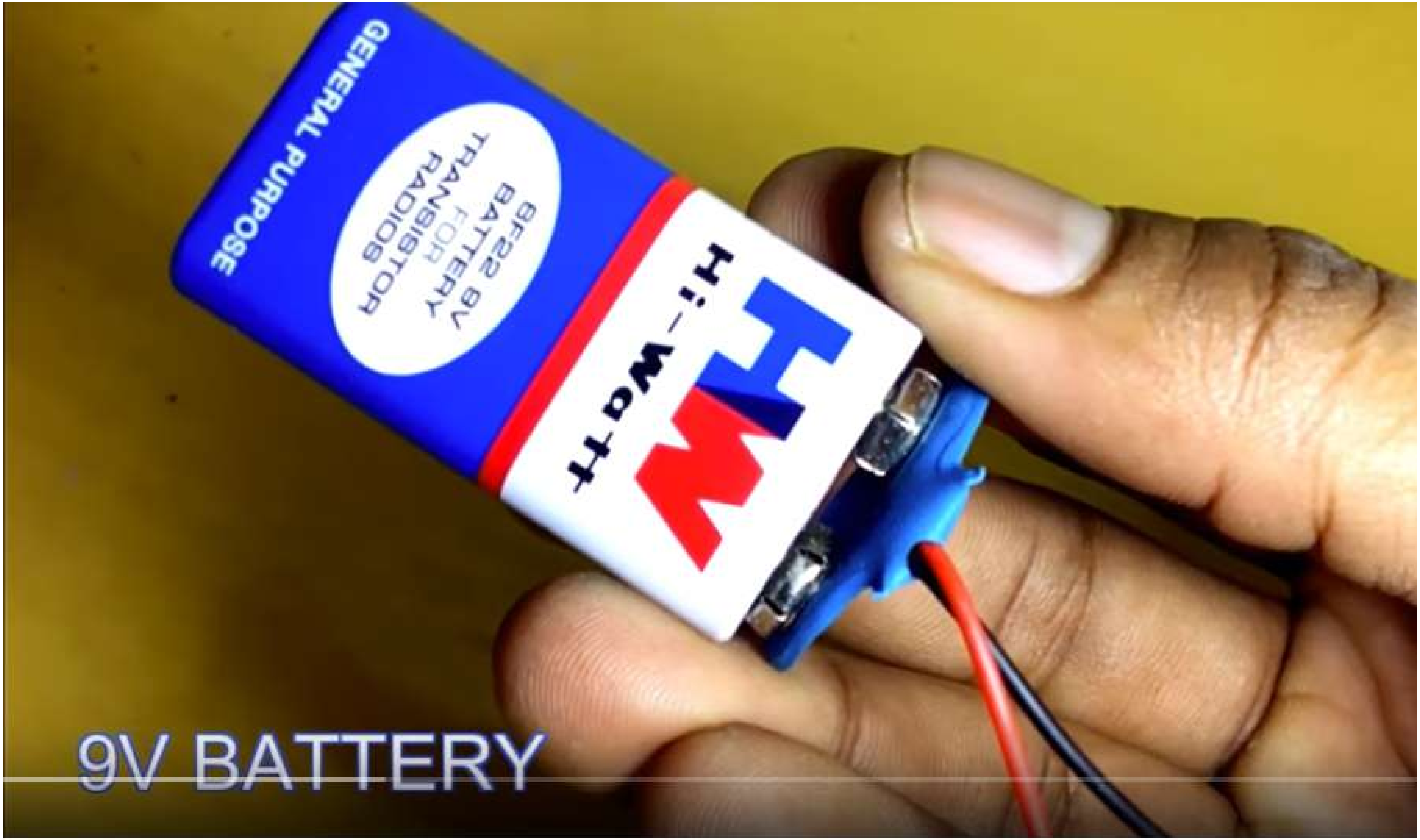

inspired by
Making a Transistor Radio
Ladybird Books
1972



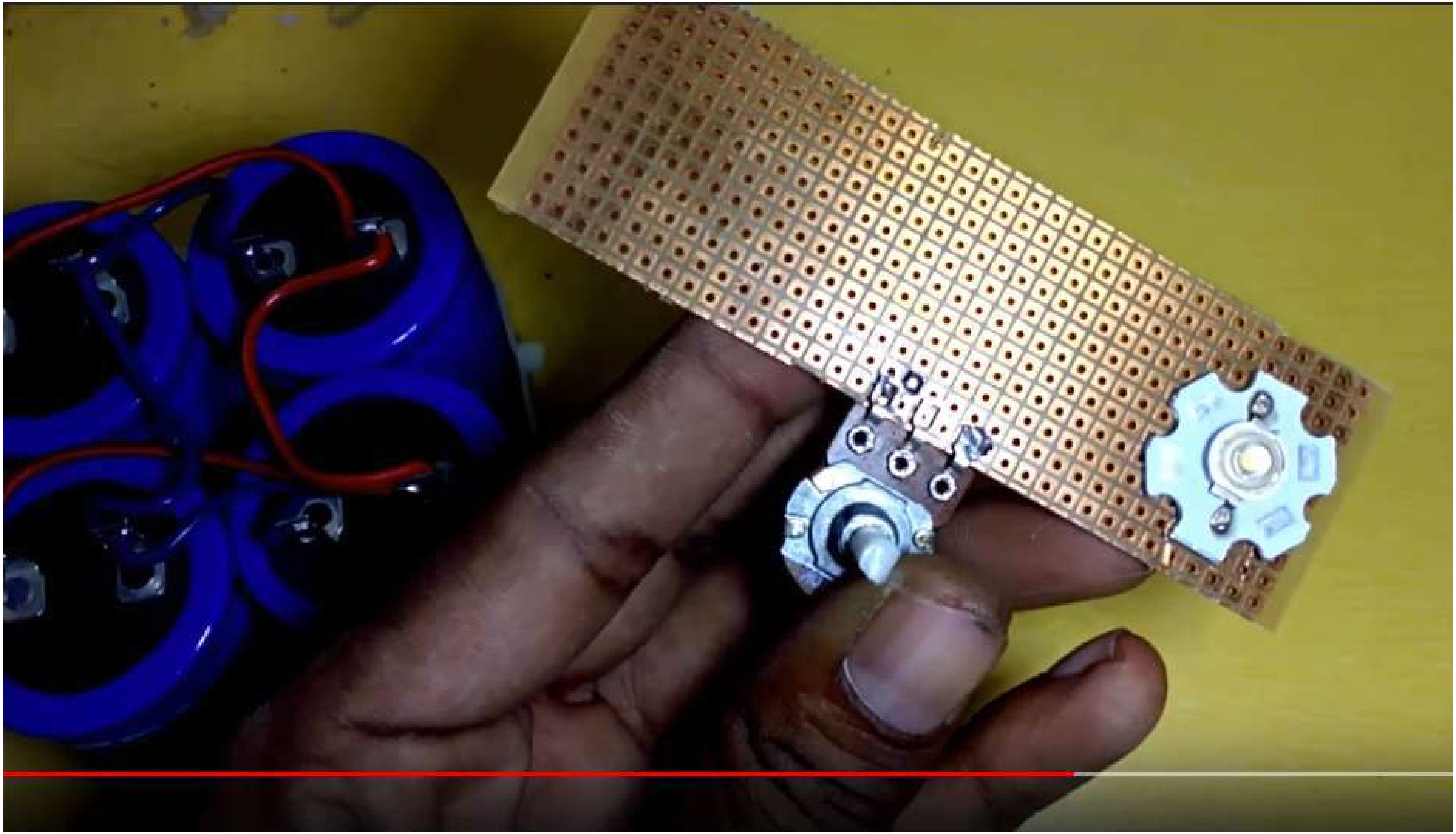

SFPL
5000µF
50 vdc
105°C
-10 + 10%
(Black Neg.)
5000MFD/50V

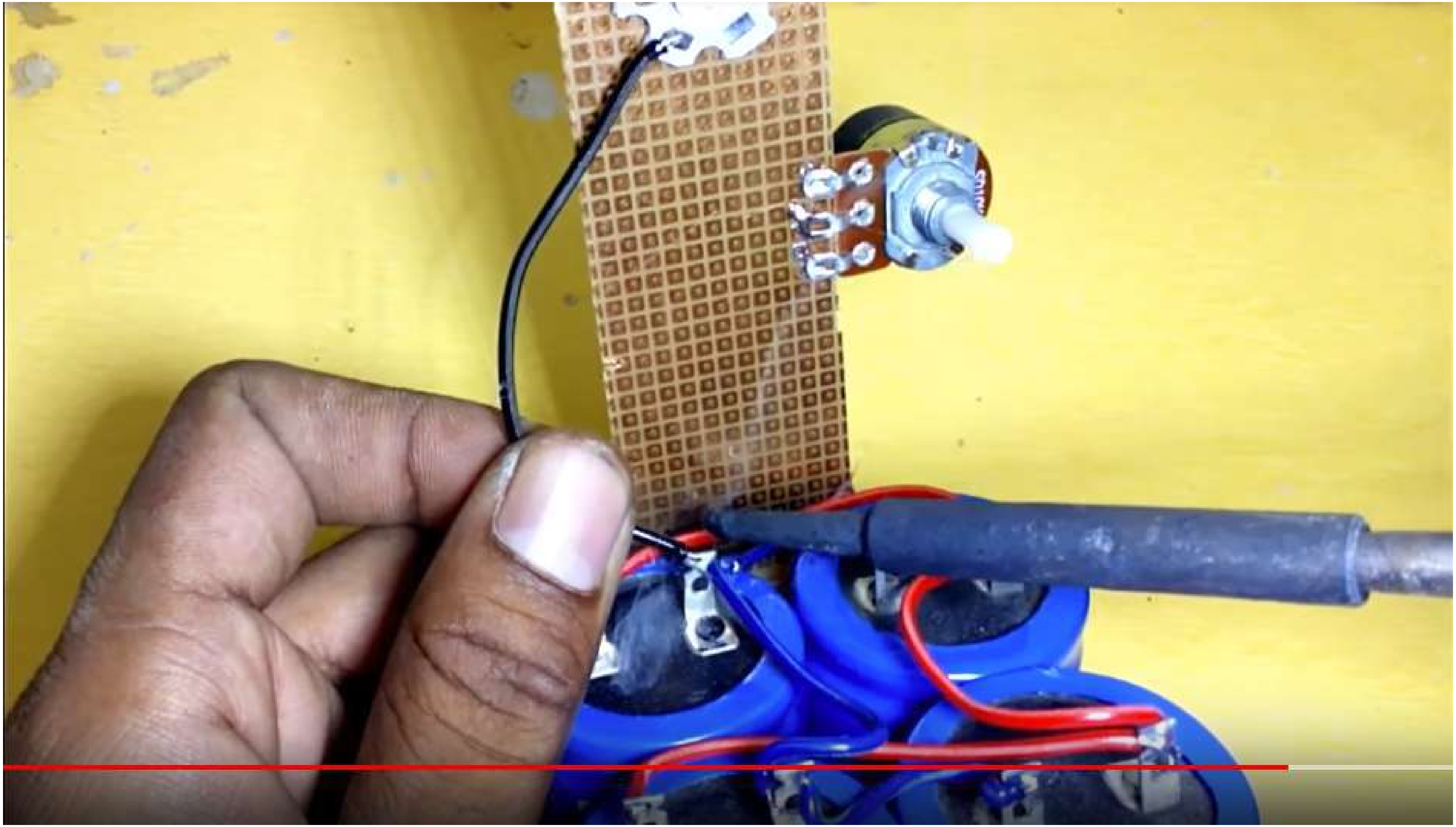

10K V.C

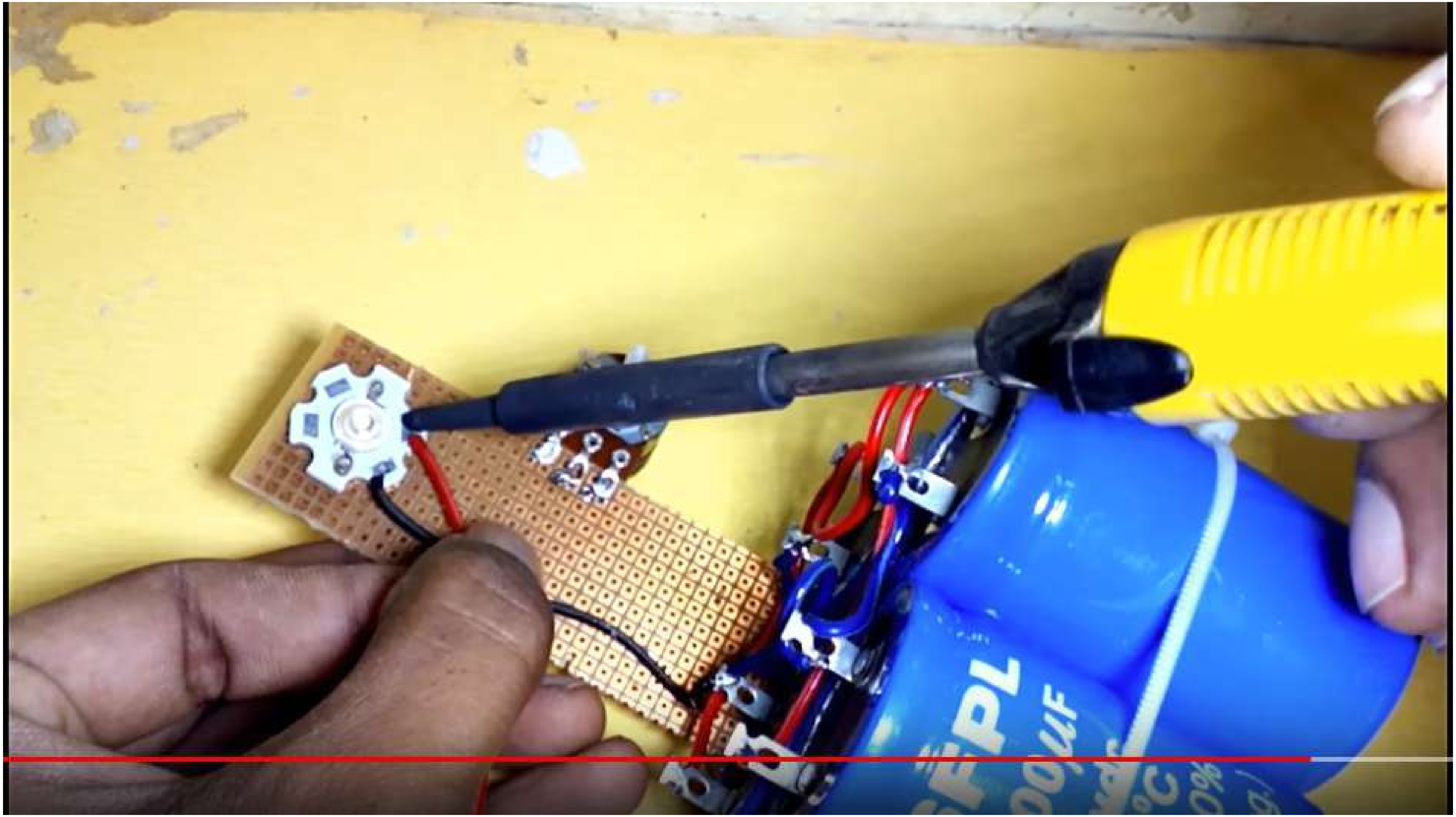

DOT BOARD

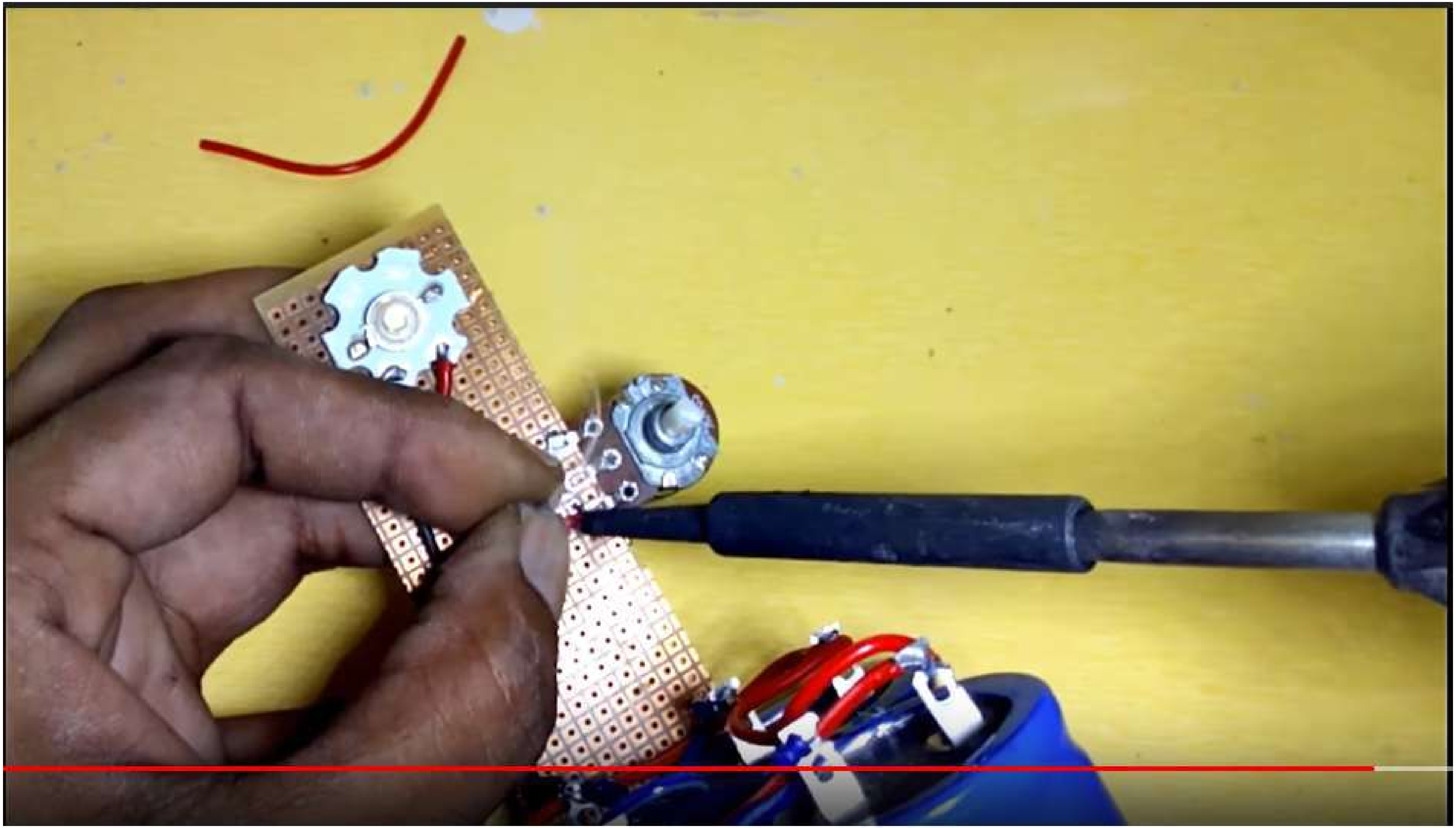

GENERAL PURPOSE
6F22 9V
BATTERY
FOR
TRANSISTOR
RADIOS
Hi-Watt
9V BATTERY

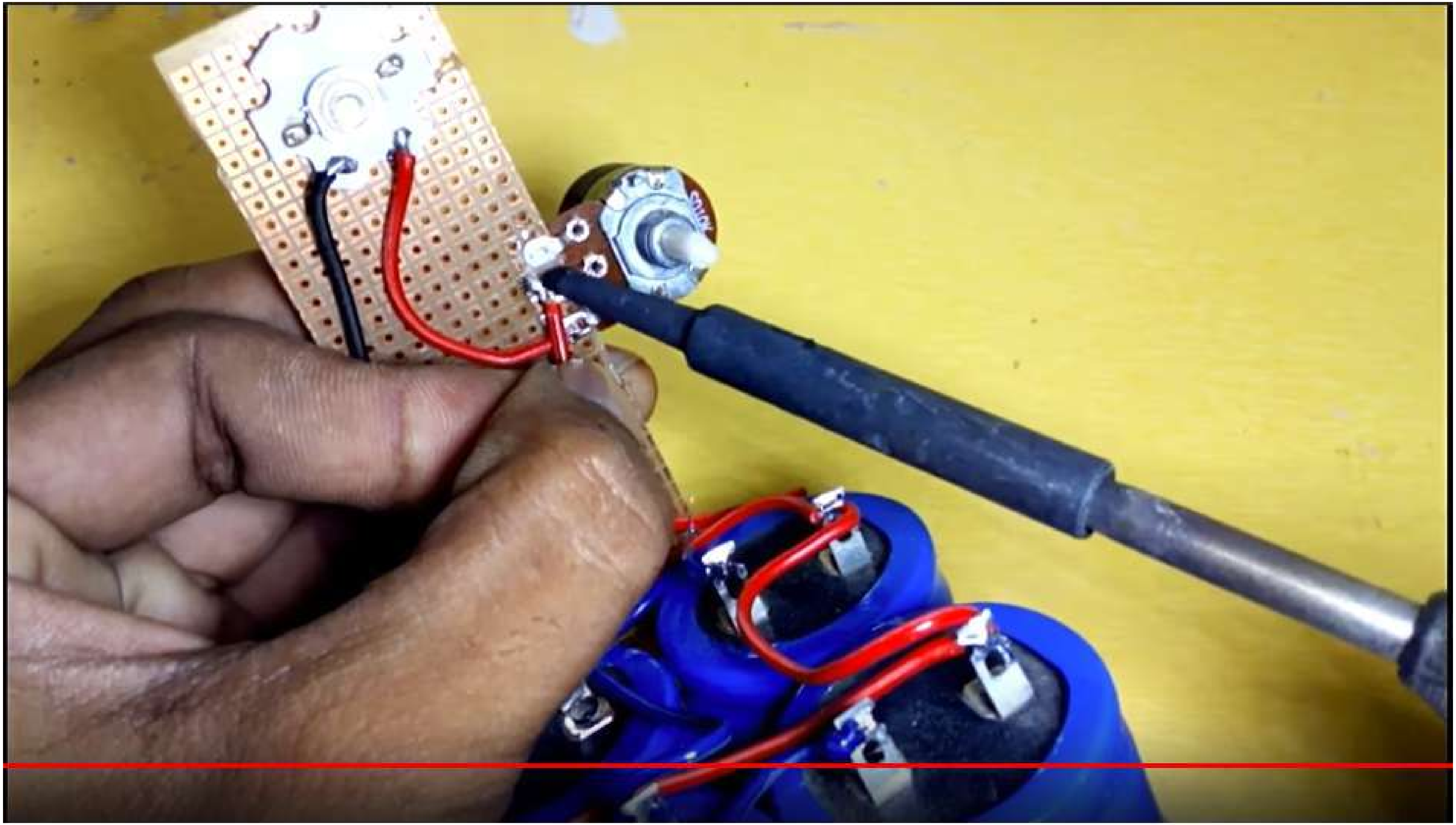

3V LED

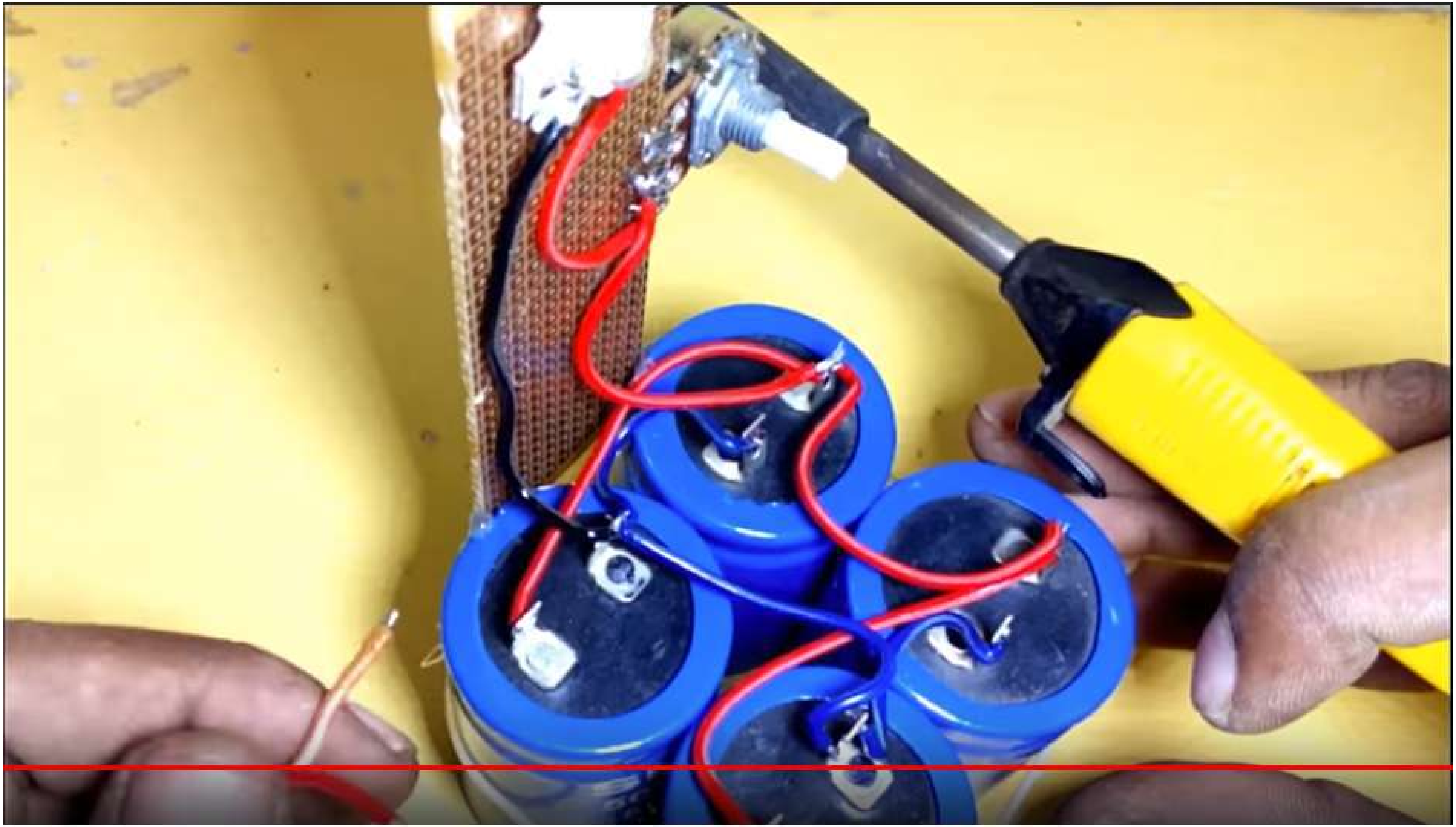


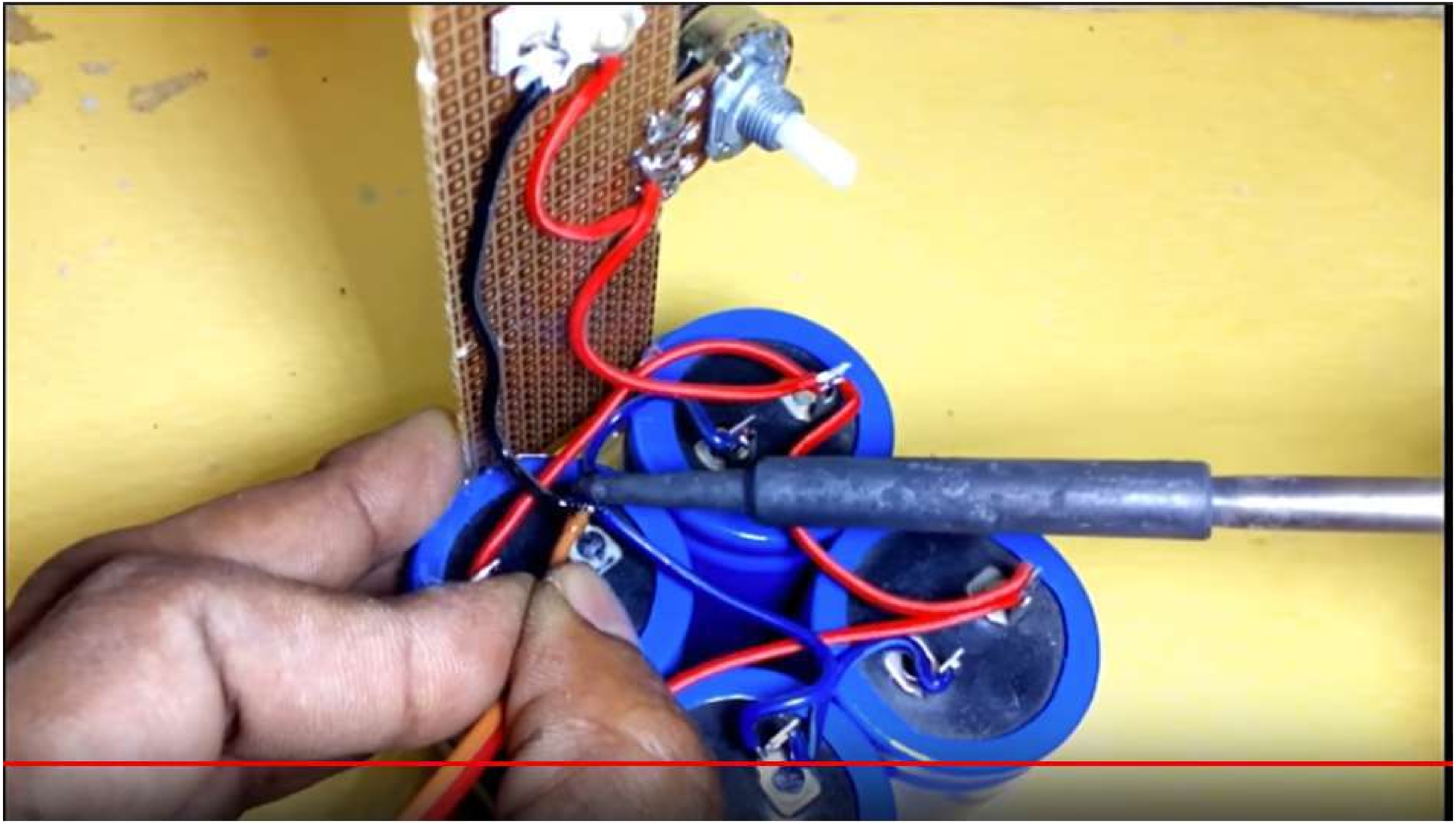


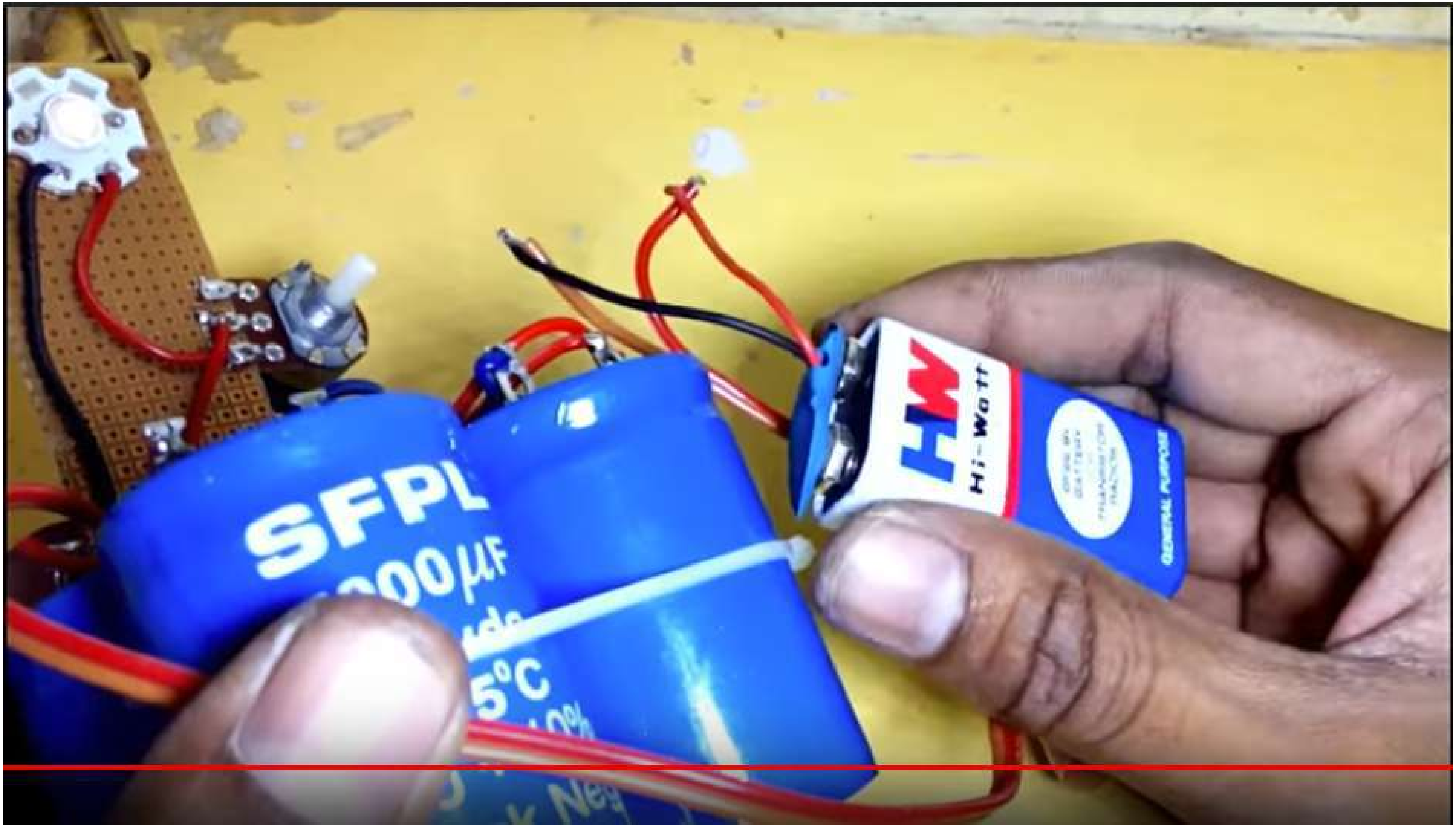


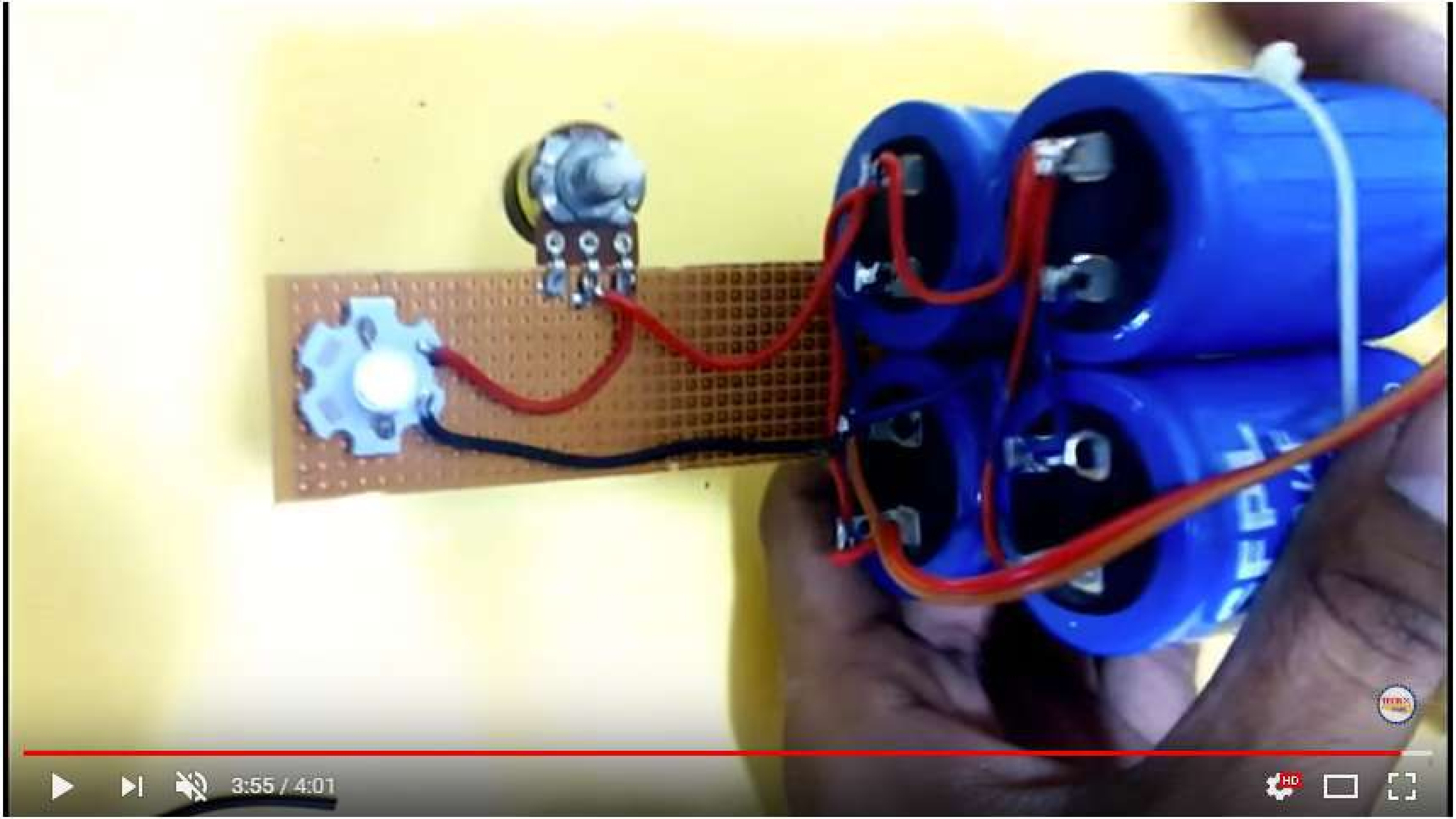




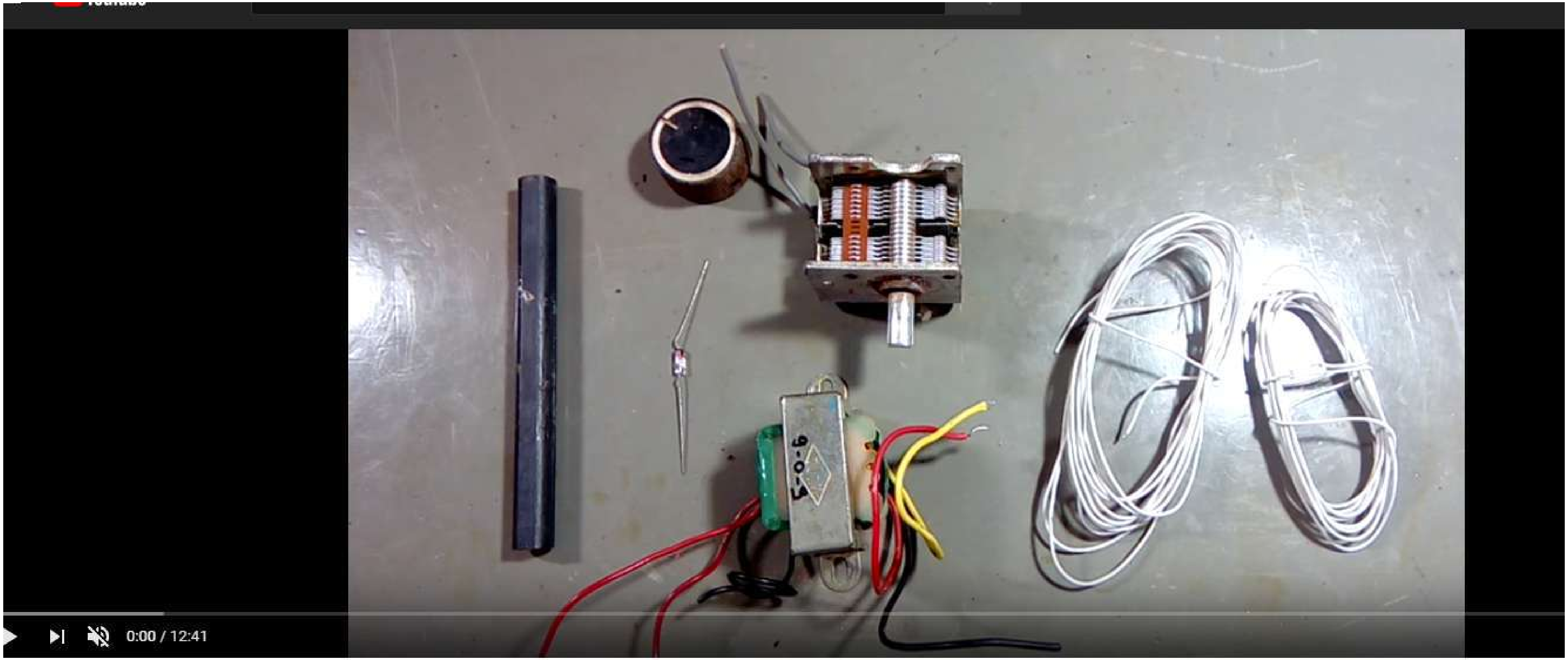




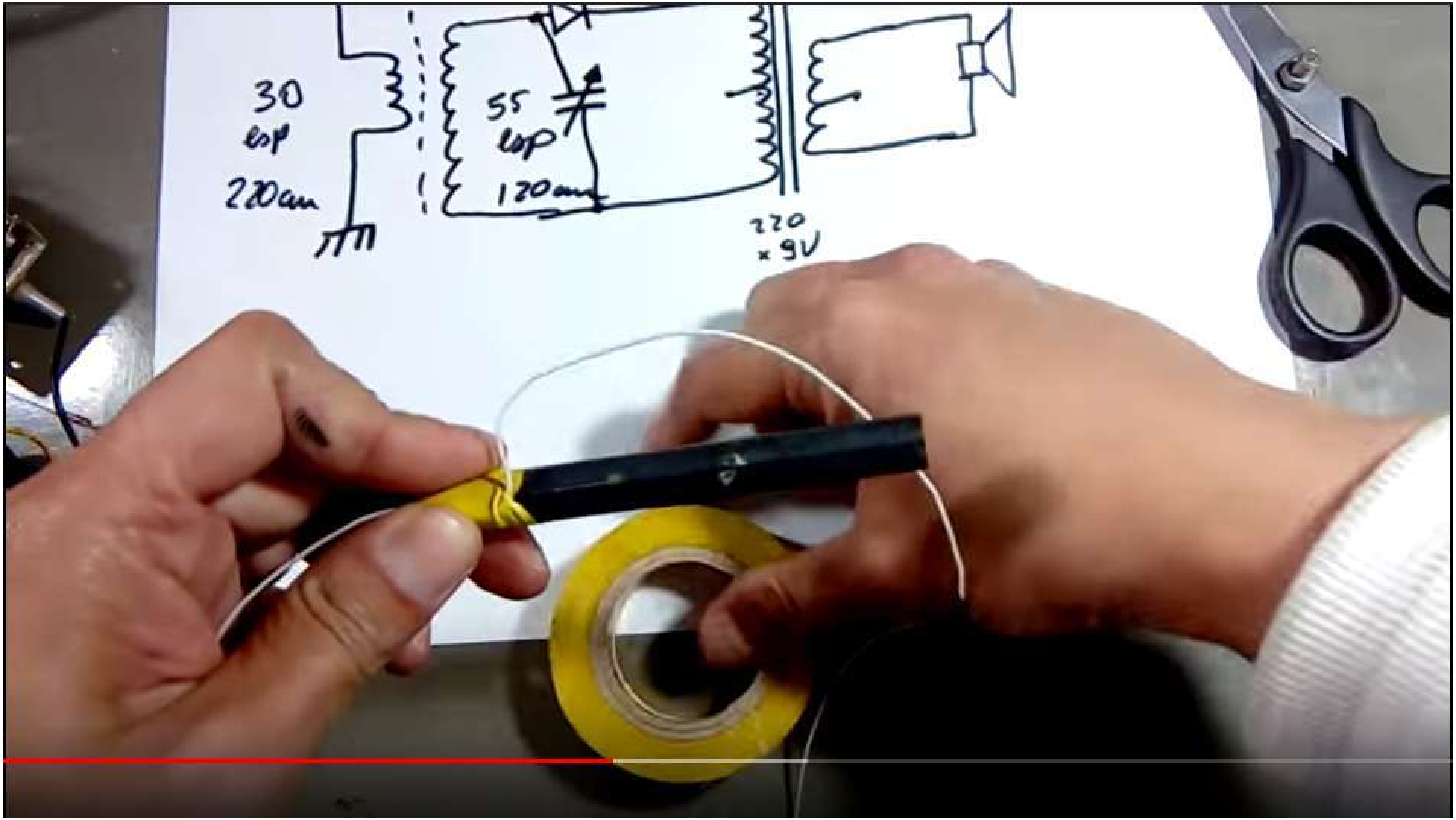

SFPL
Hi-Watt

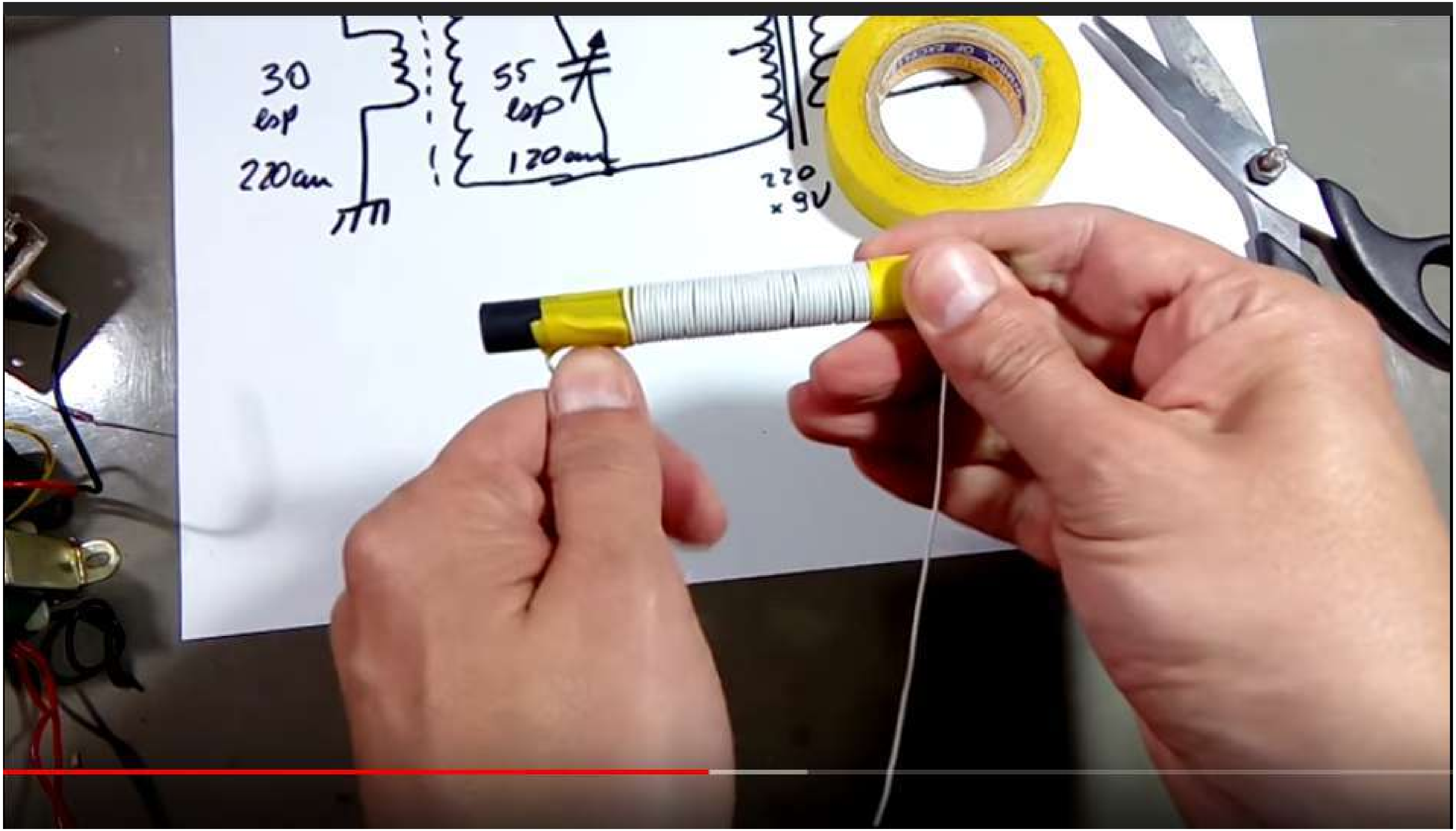


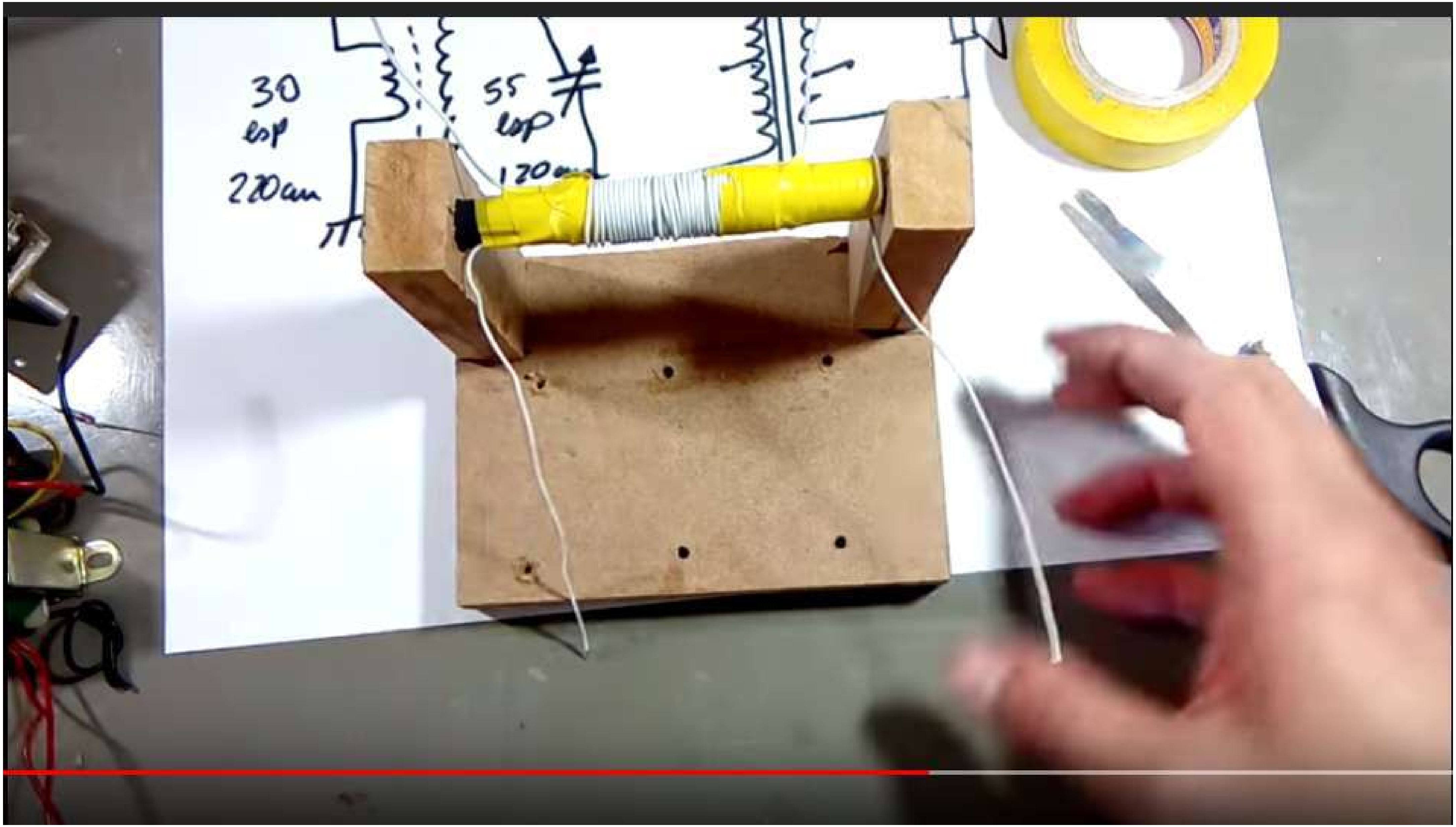
Real free energy using capacitor 1000% working

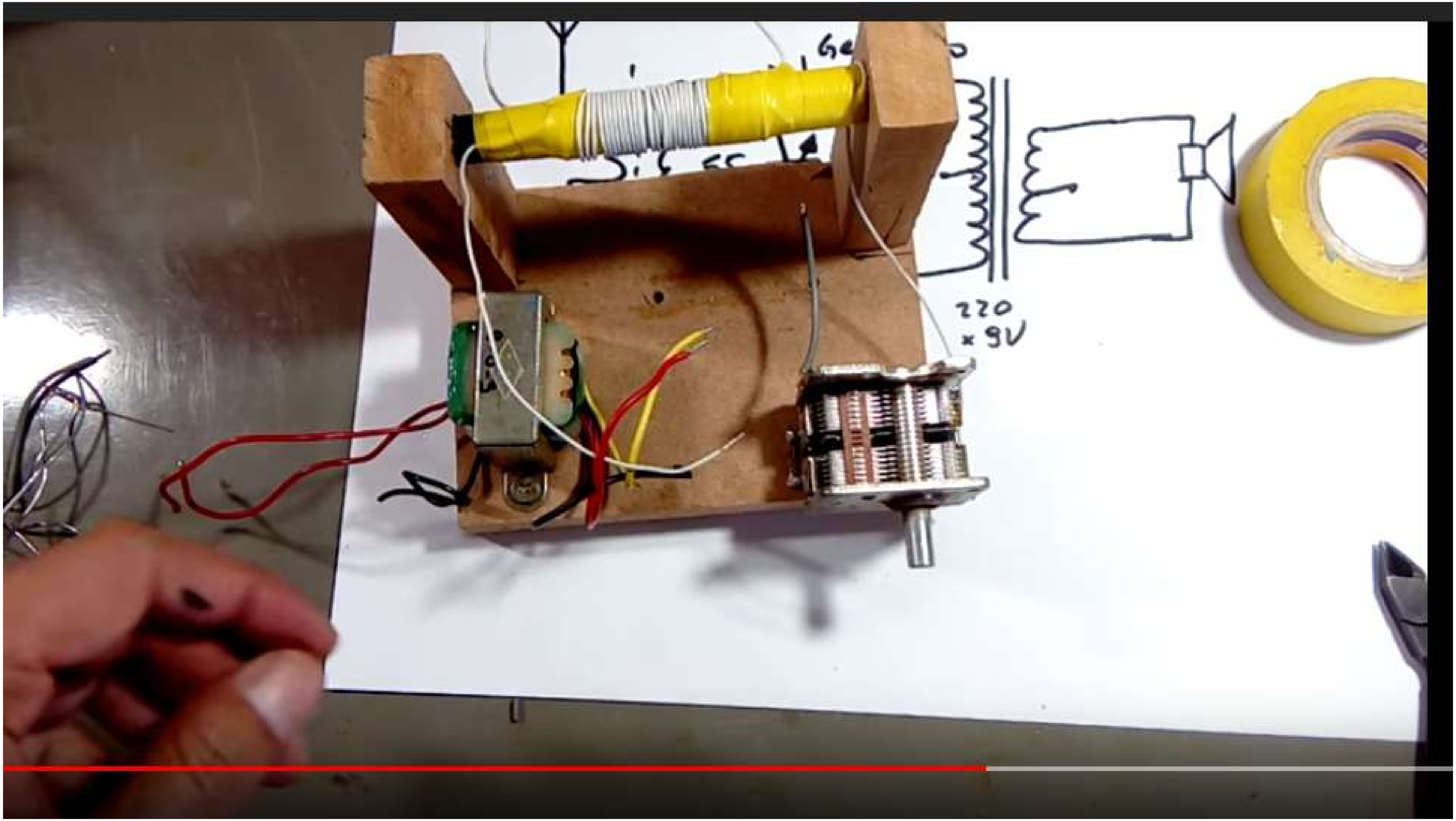


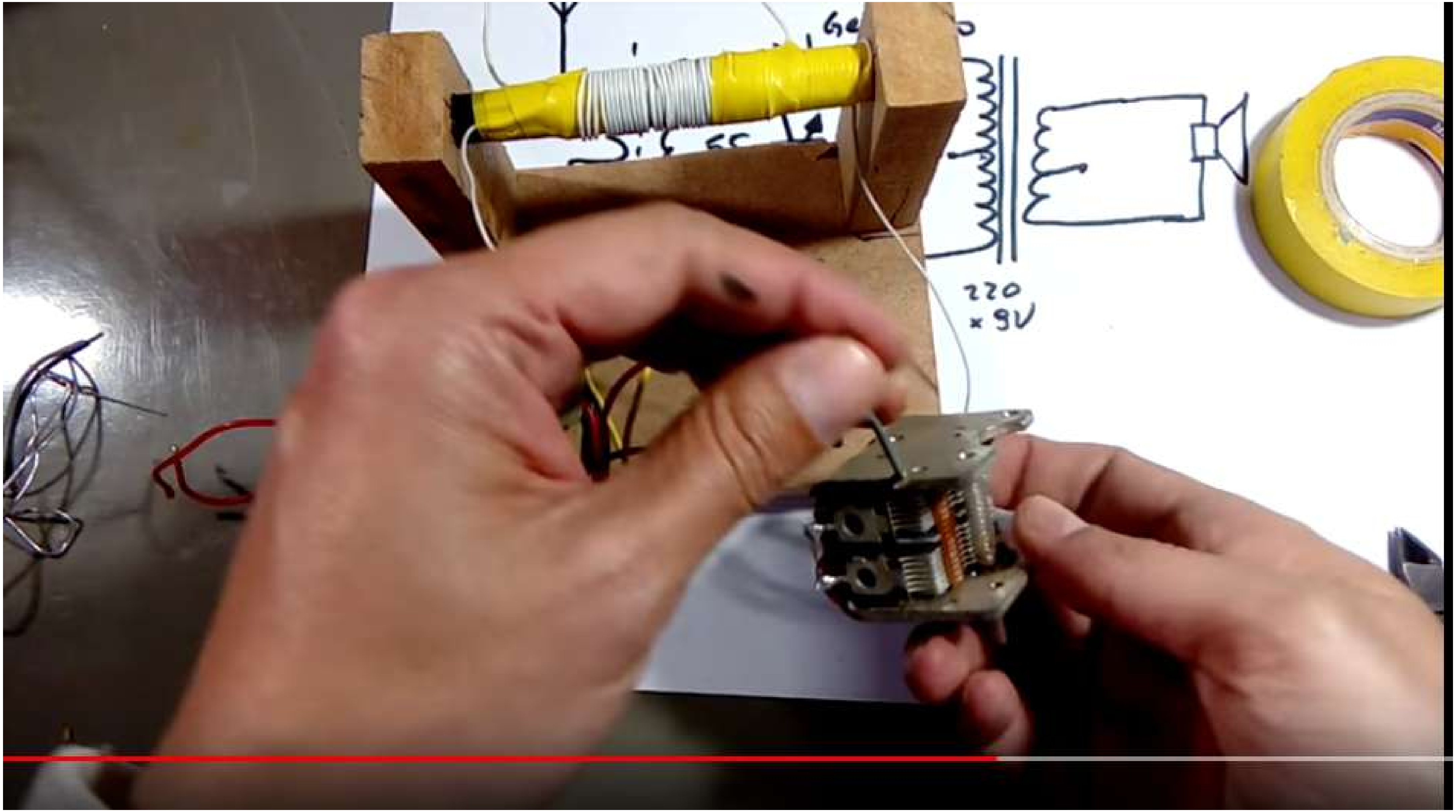
Montagem de um rádio AM a cristal de Germânio

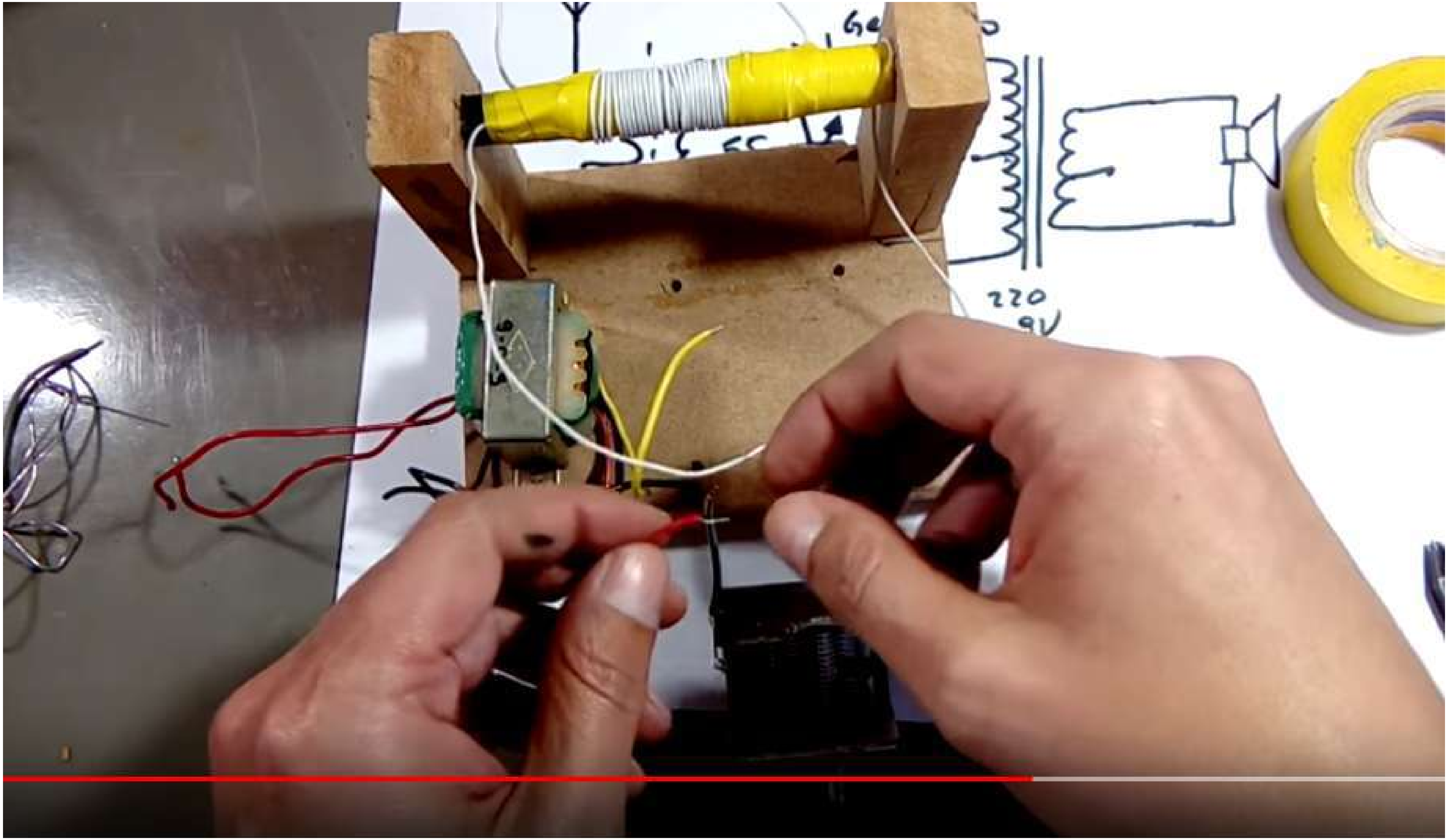

30
esp
220cm
55
esp
120cm
220
x 9V

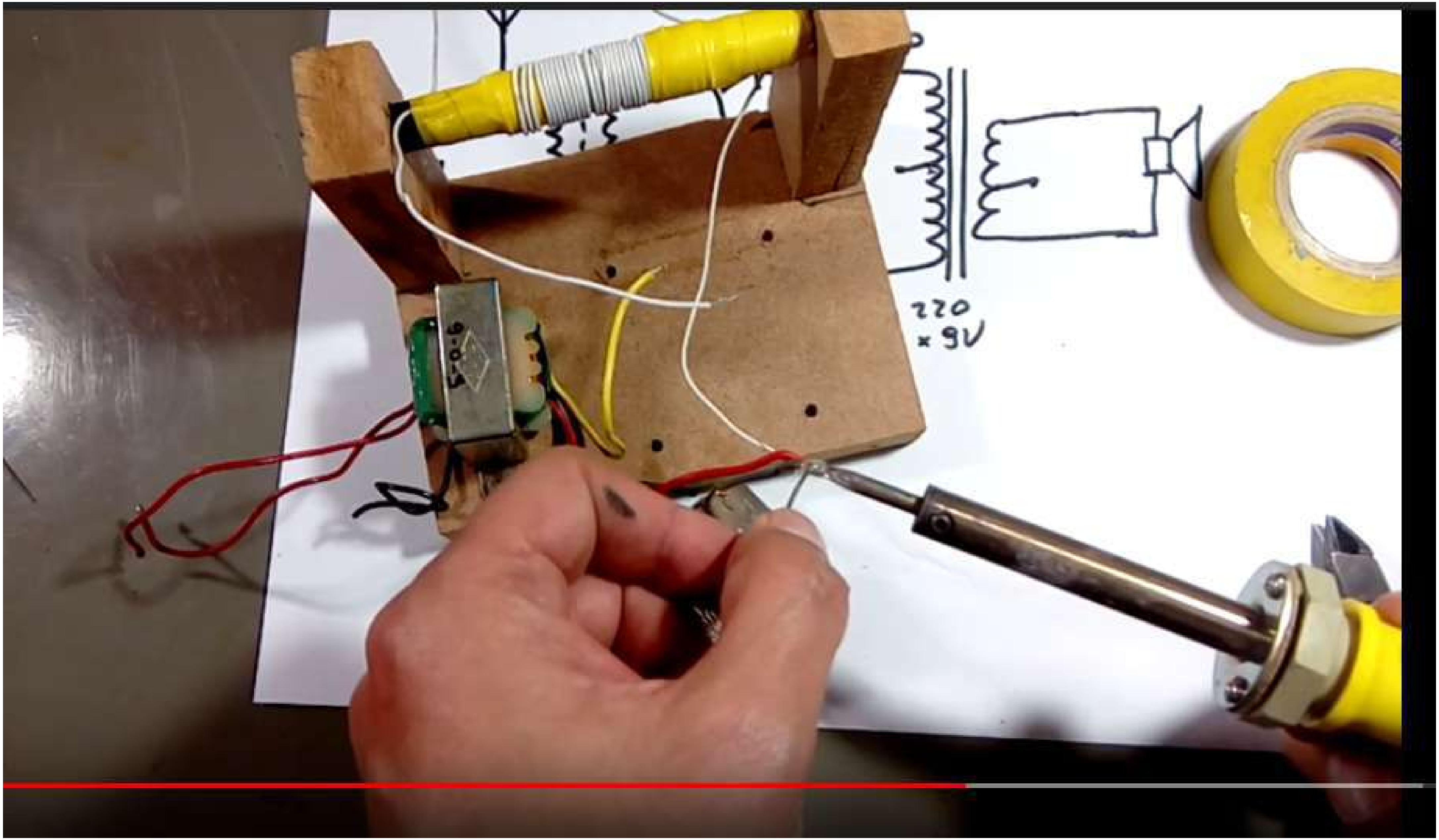

30
esp
220cm
55
esp
120cm
220
x 9V

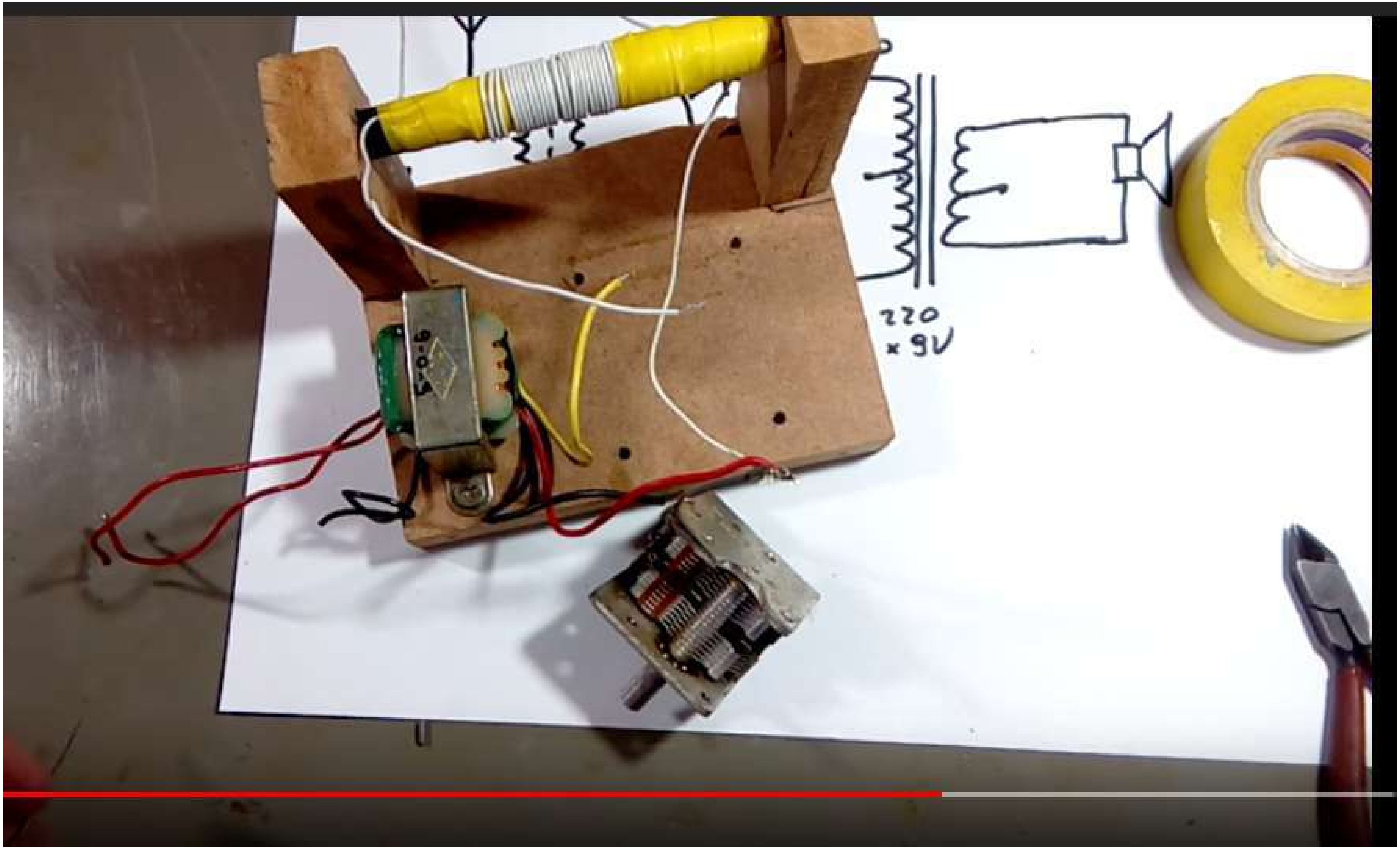

30
esp
220cm
55
esp

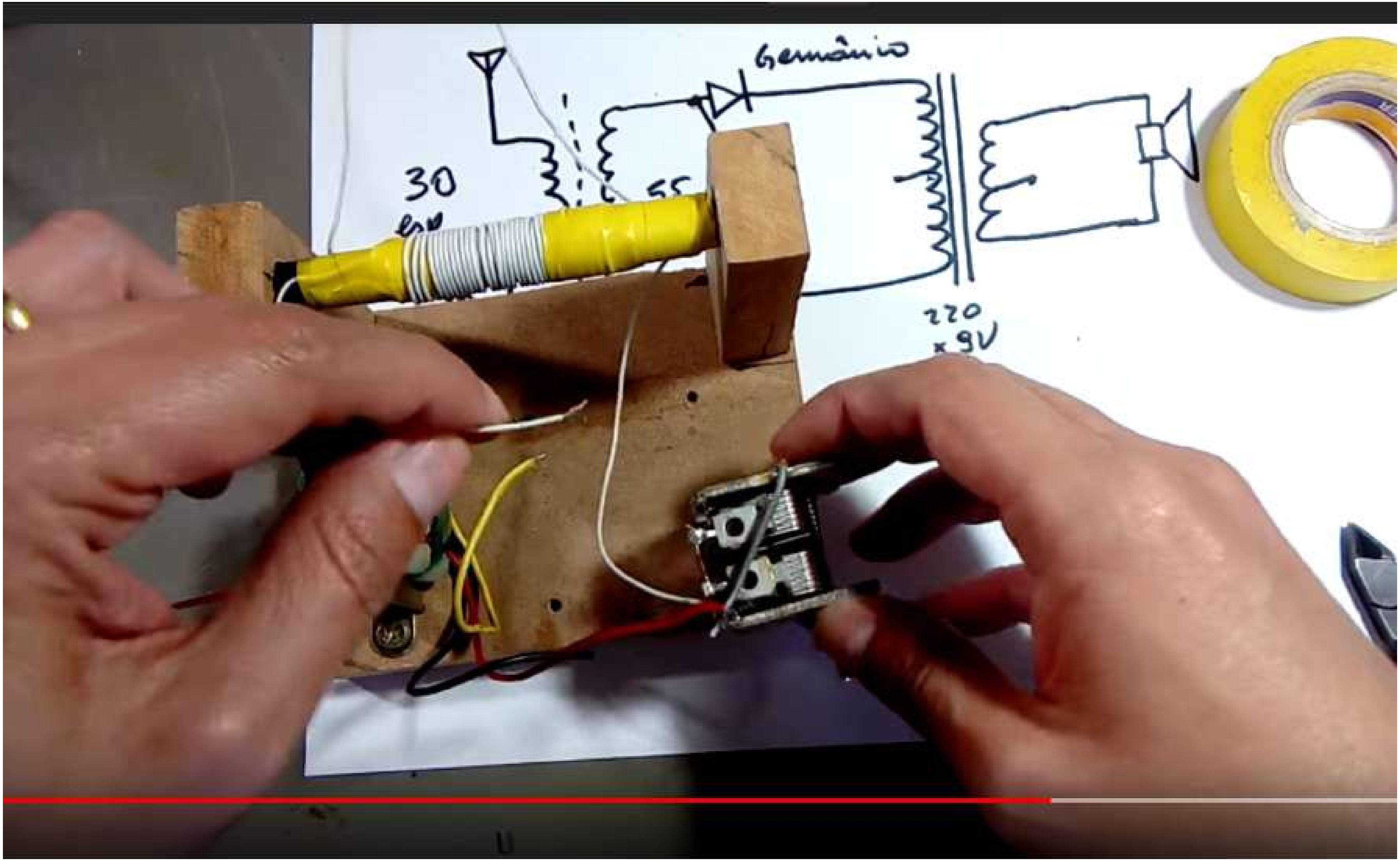

220
× 9V

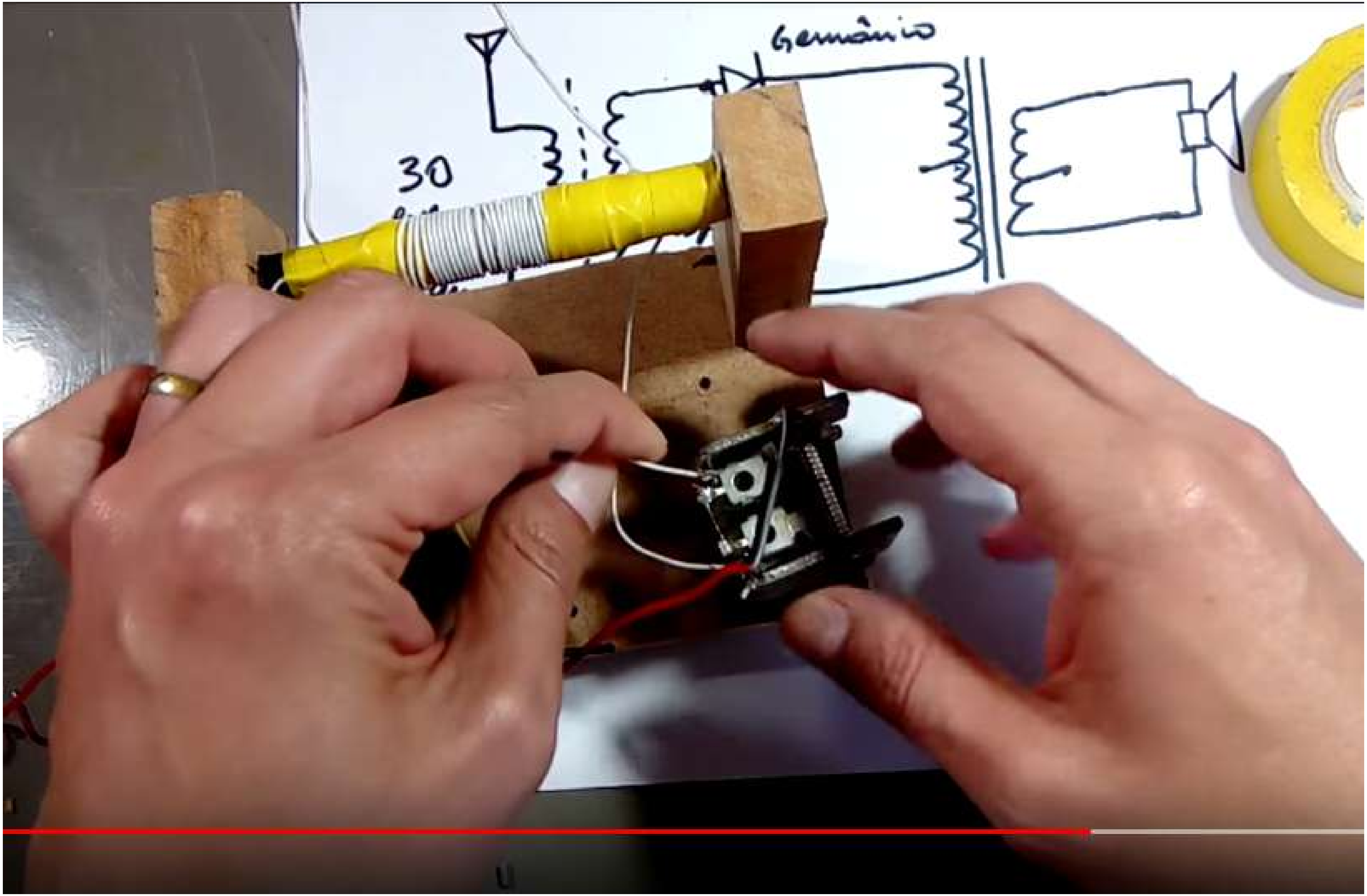

220
x 9V

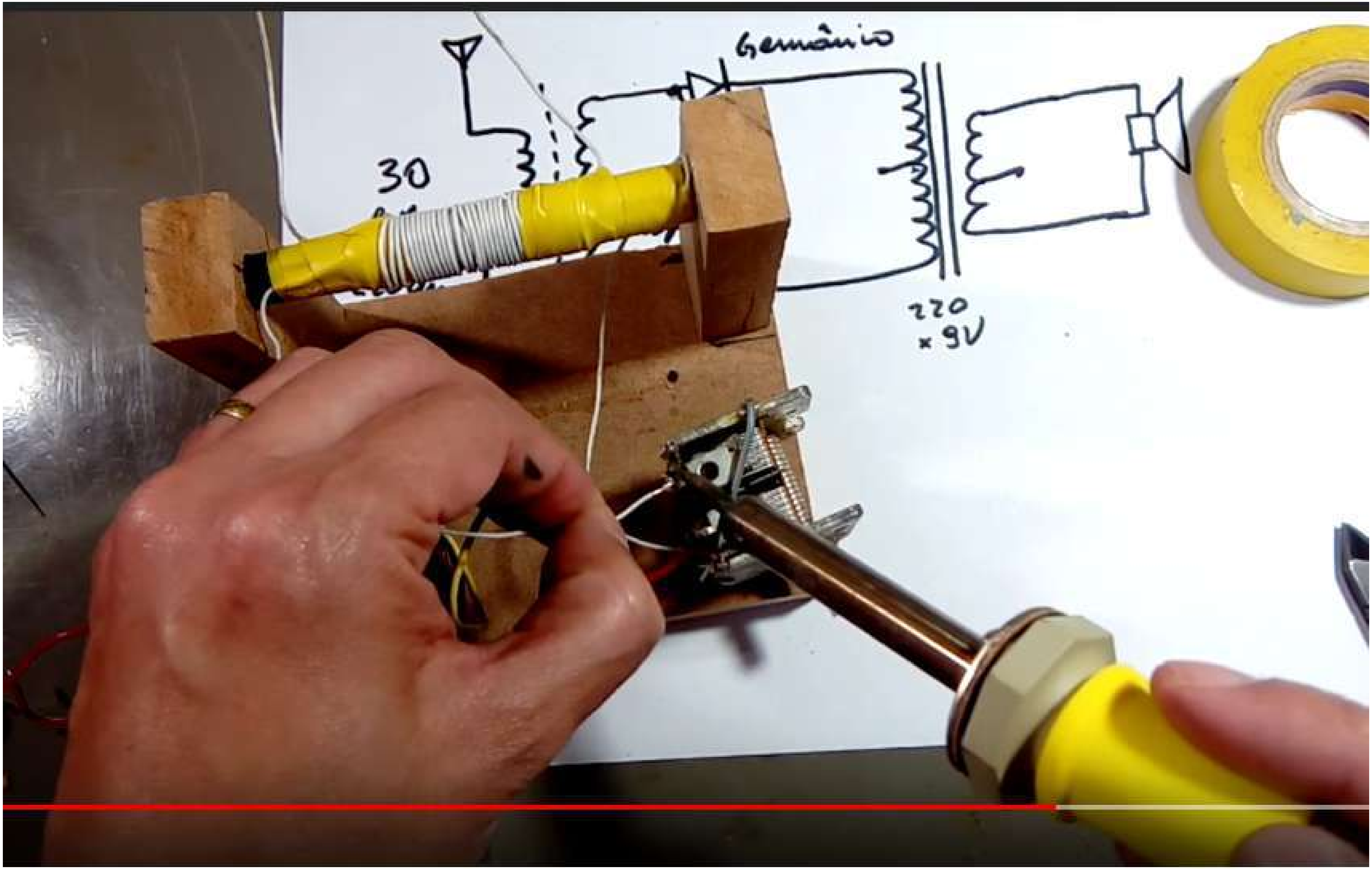

220
9V

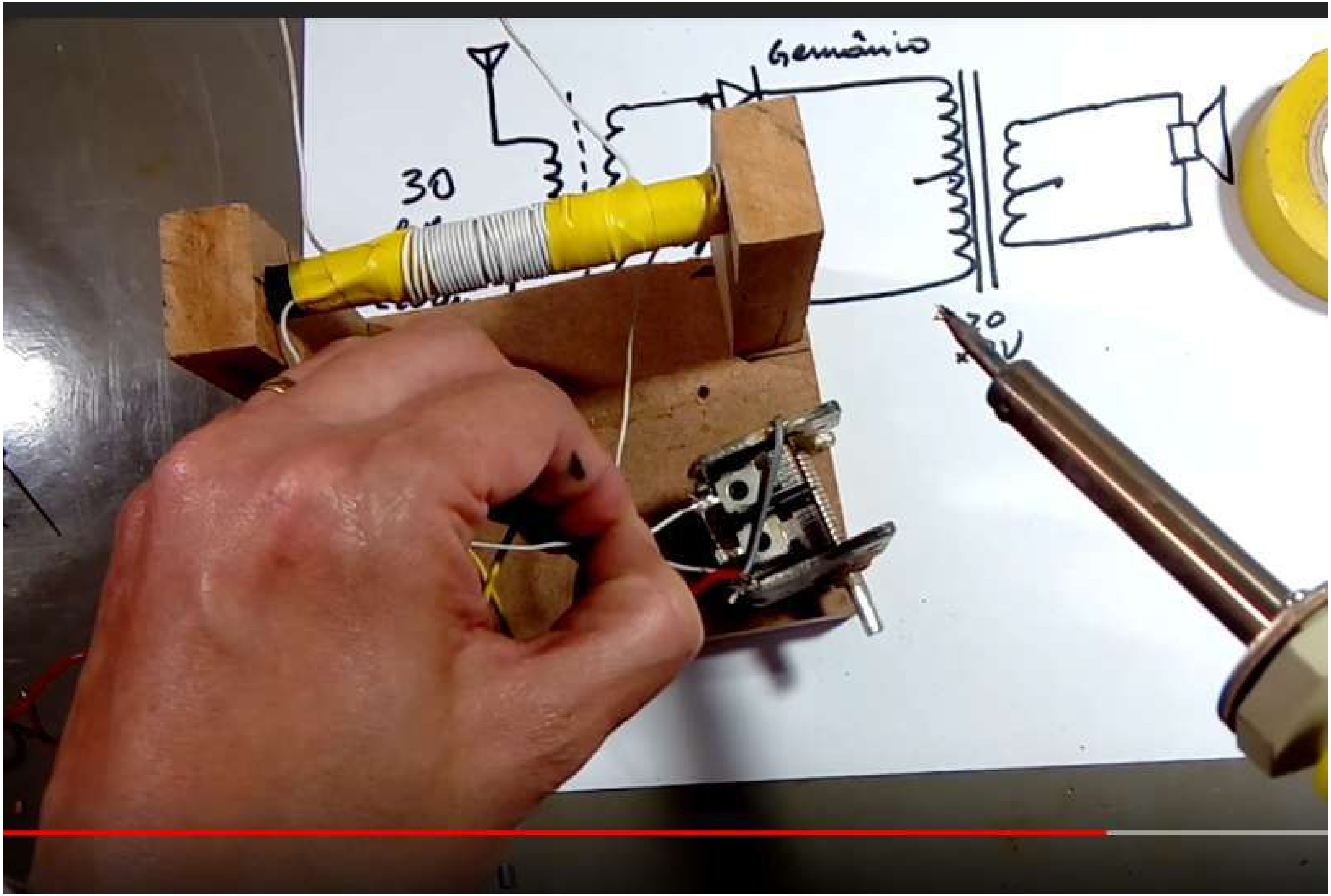

220
x 9V

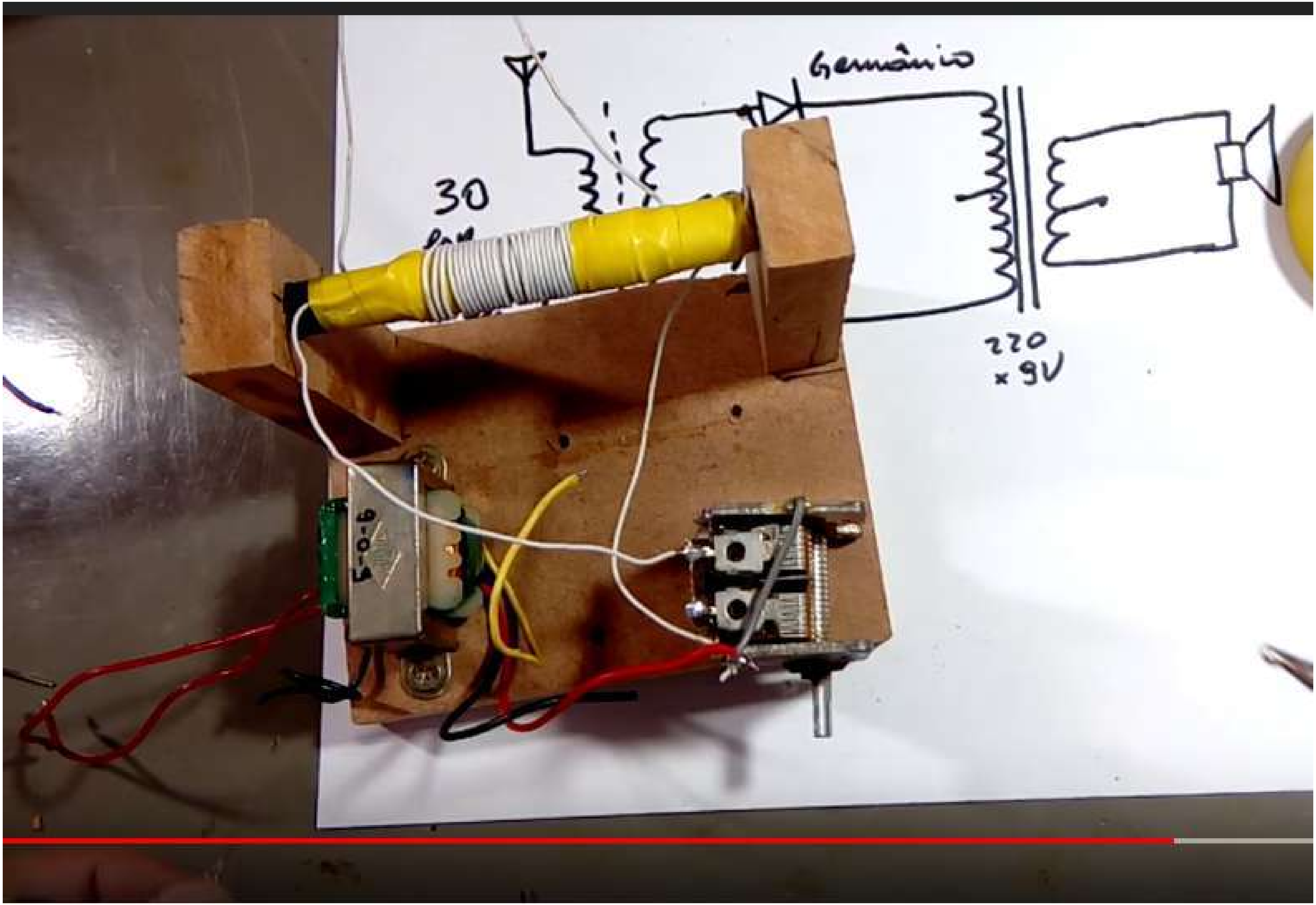

220
x 9V

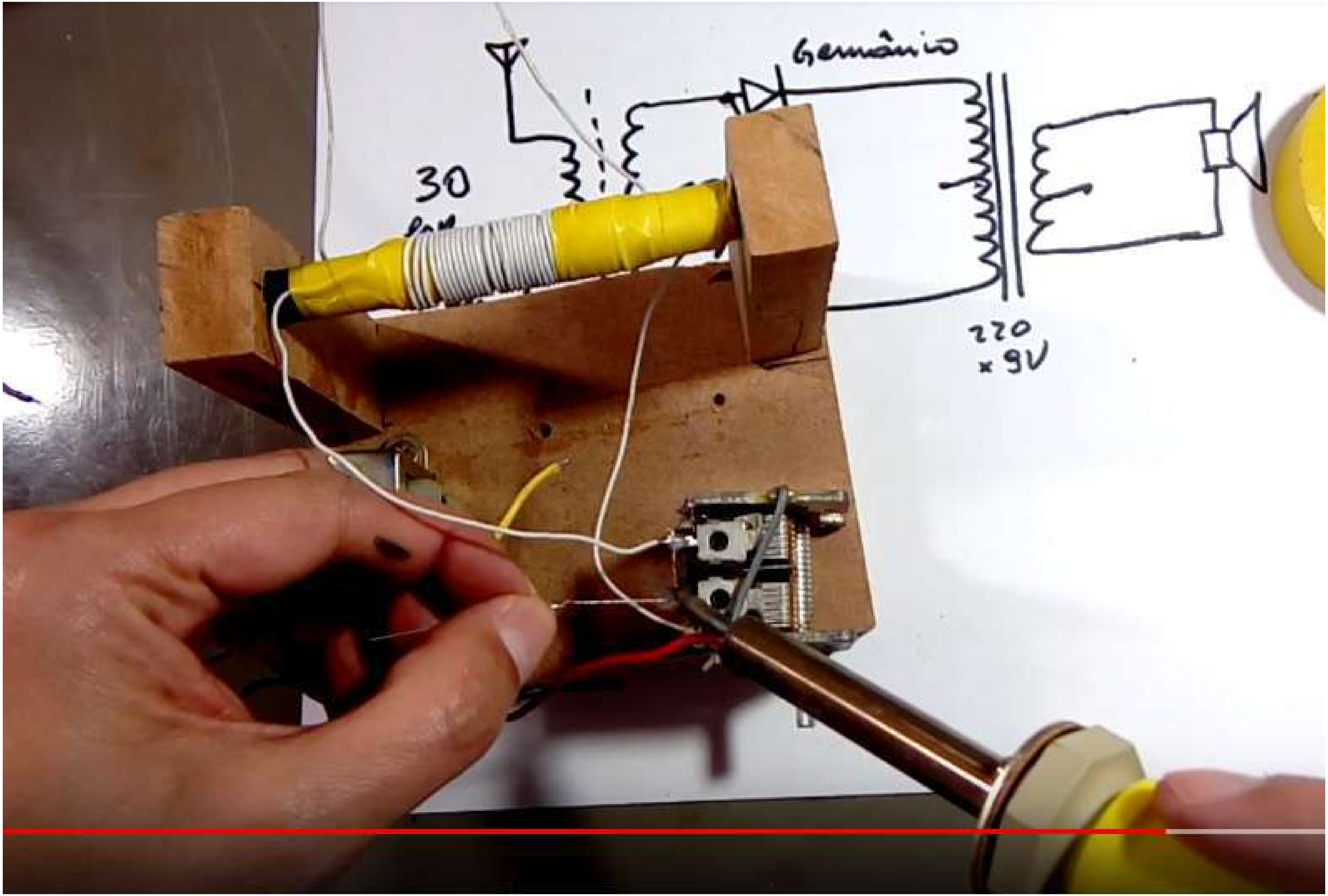

Germânio
30
55
220
x 9V

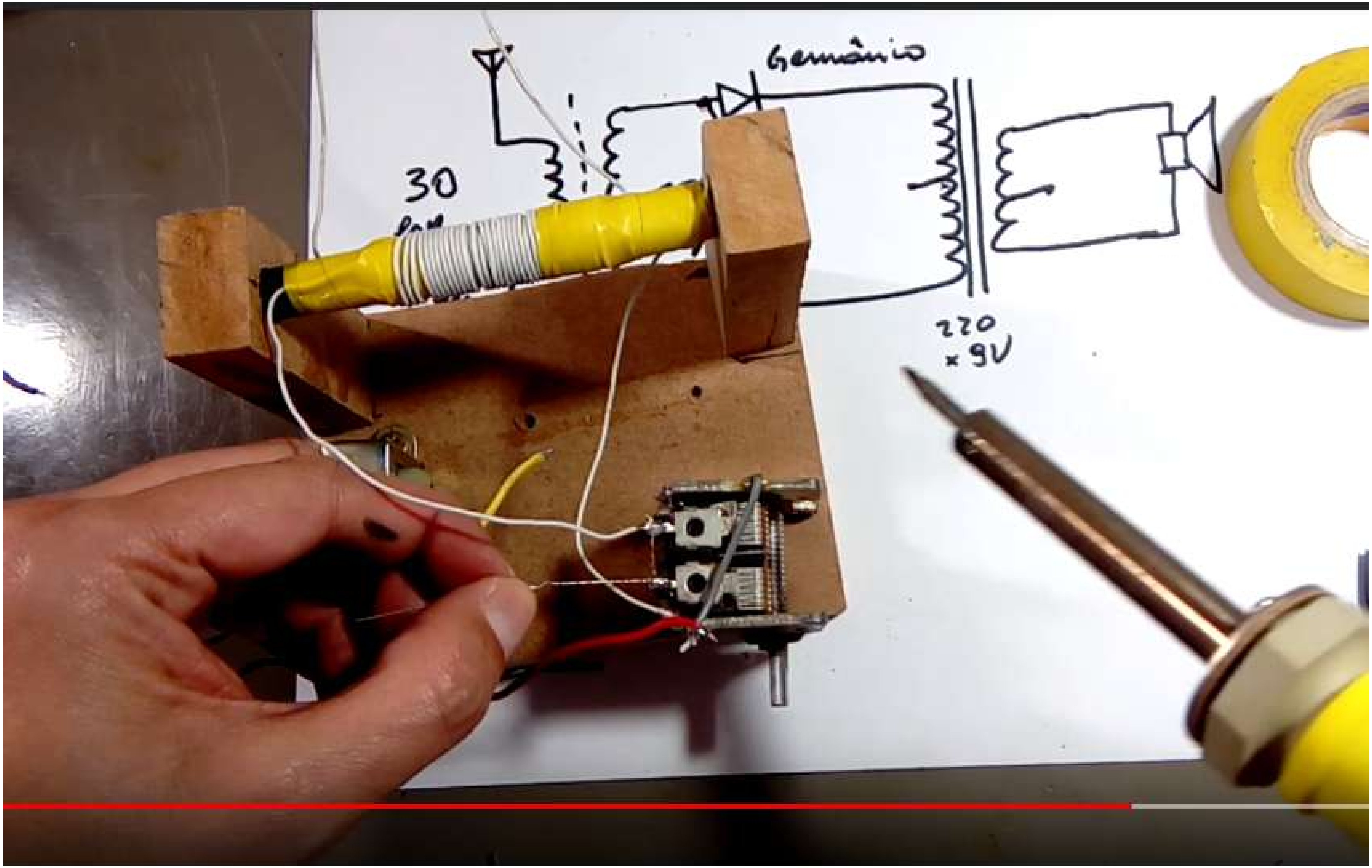

Germânio
30

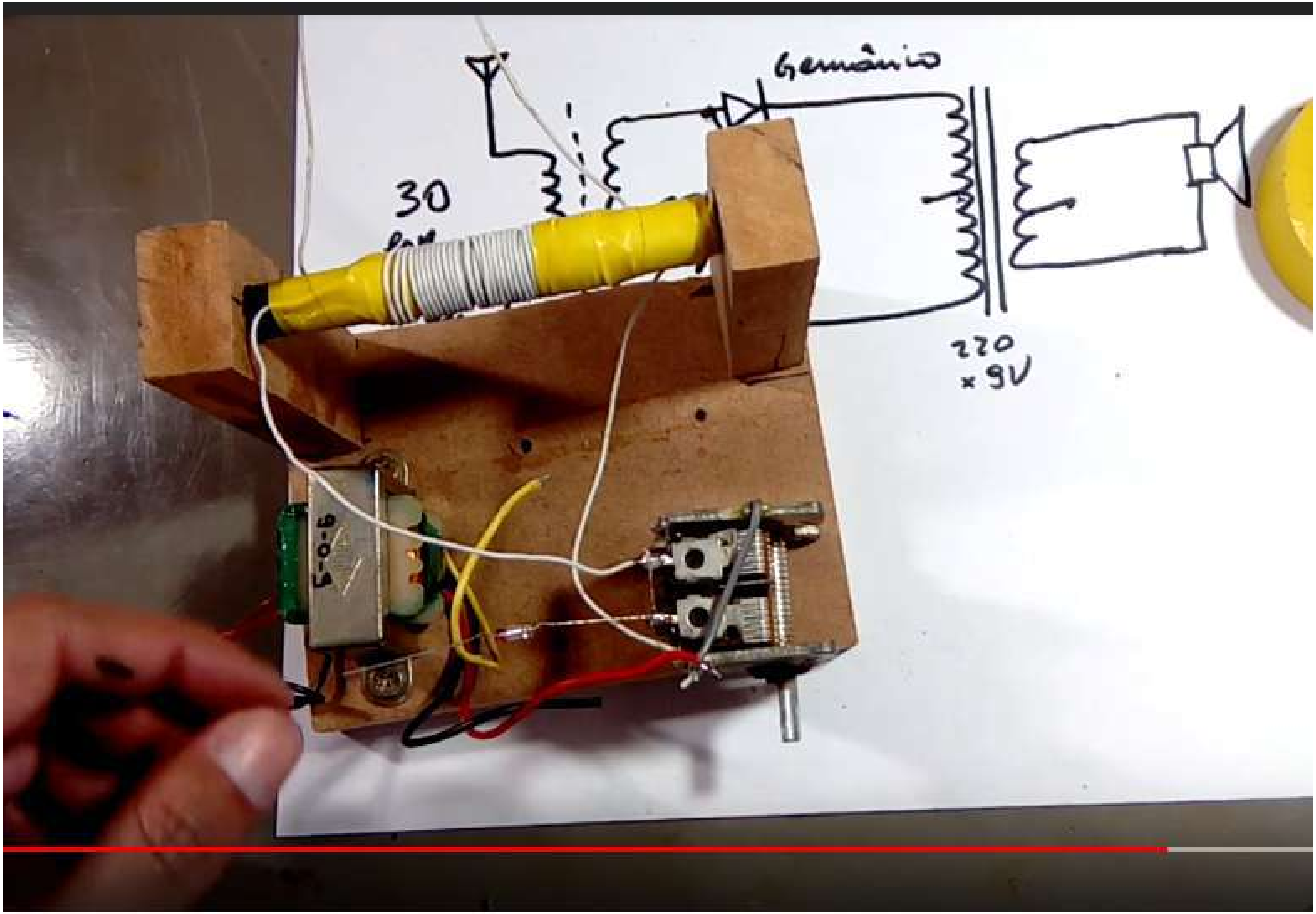

Germânio
30
220
x 9V

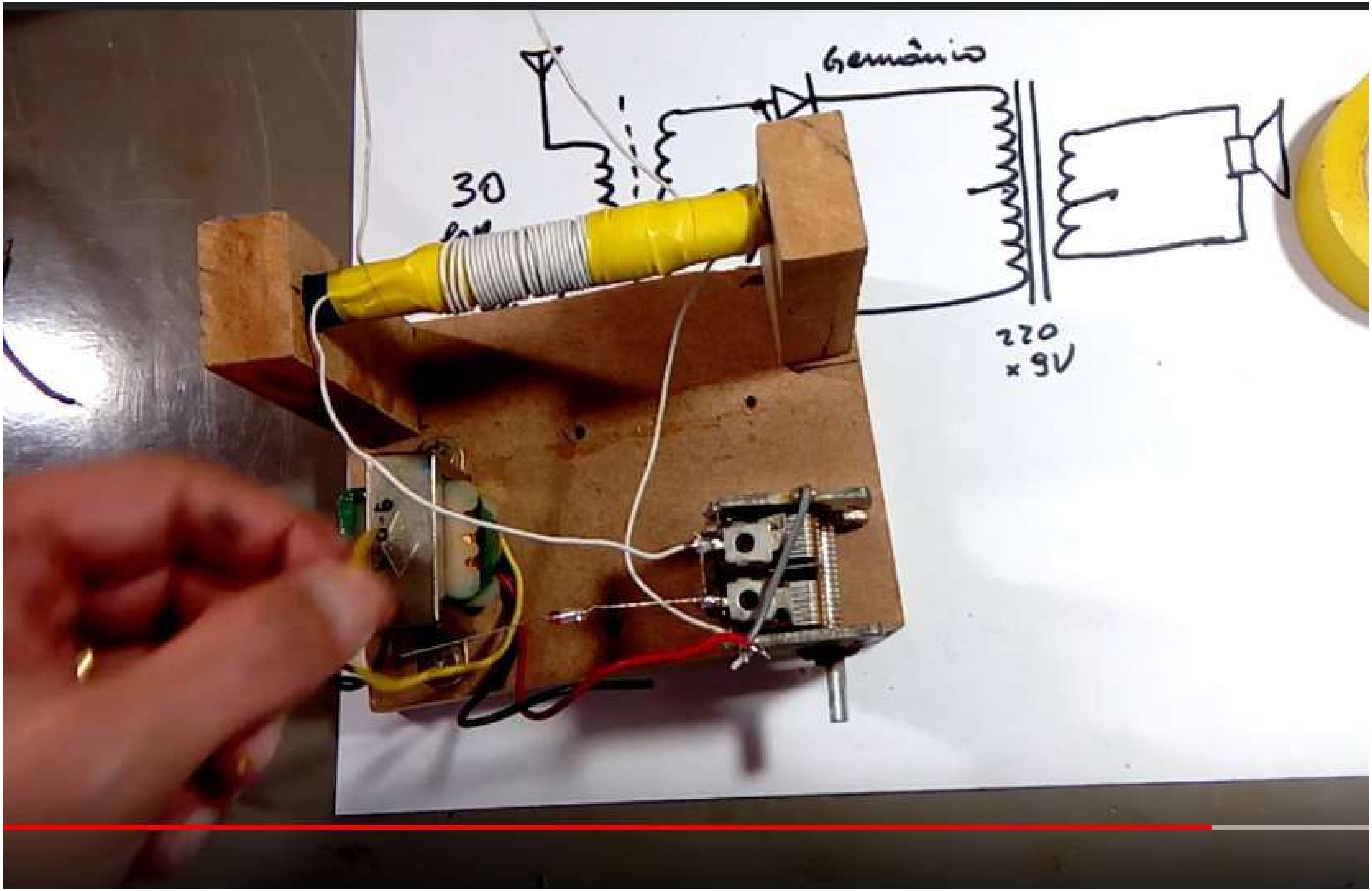

Germânio
30

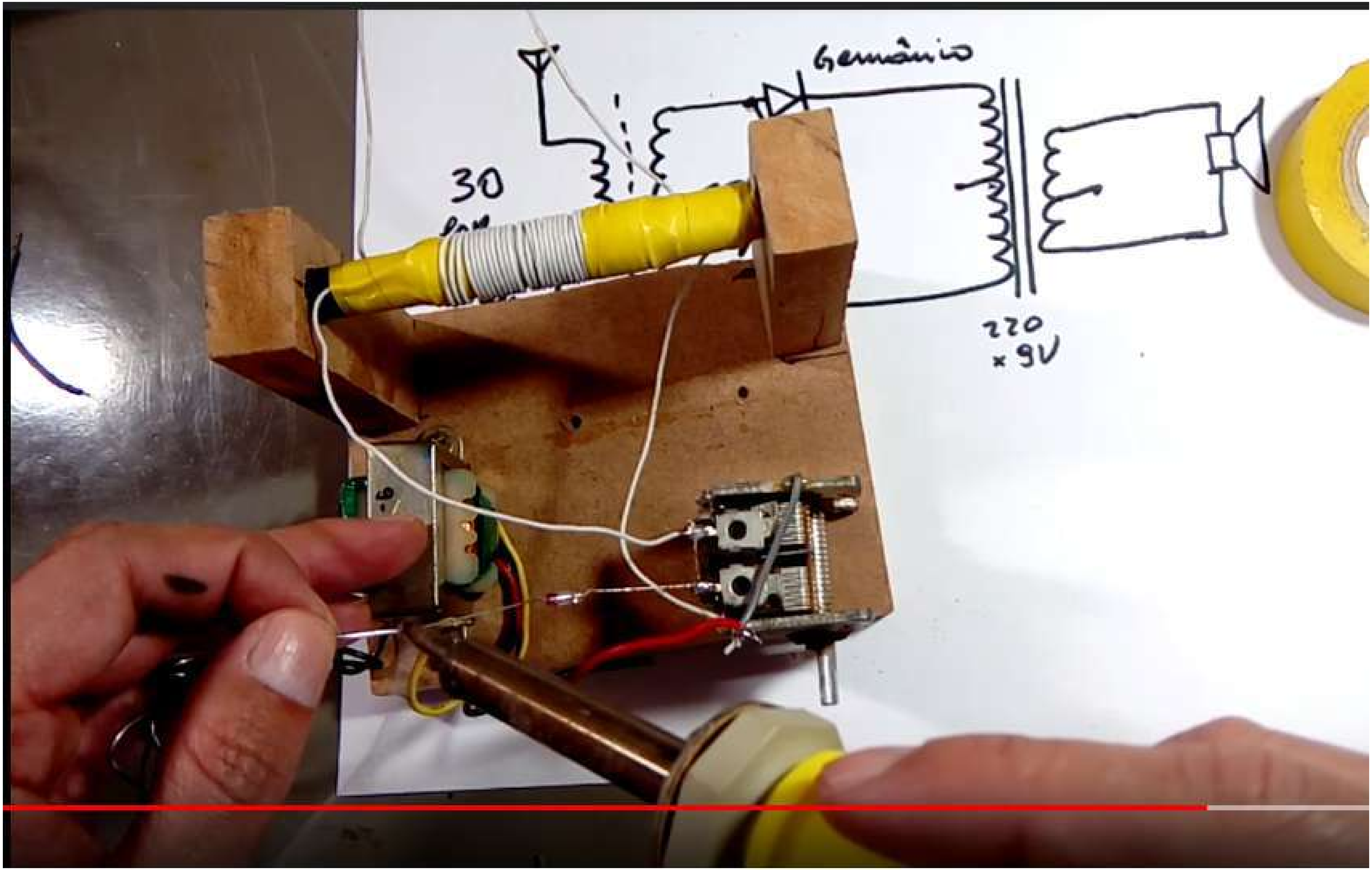

Germânio
30
220
x 9V
9-0-9

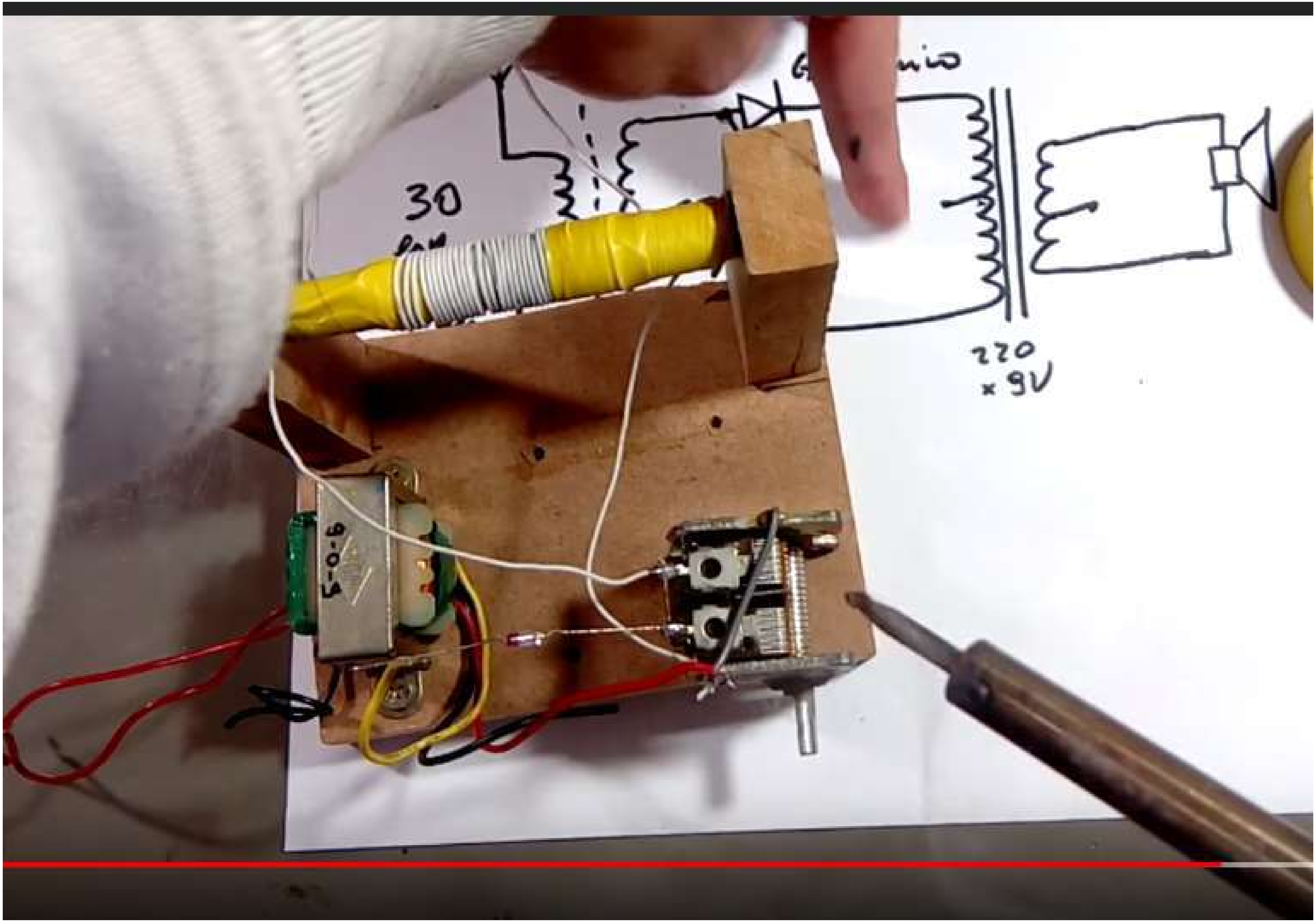

Germânio
30
220
x 9V

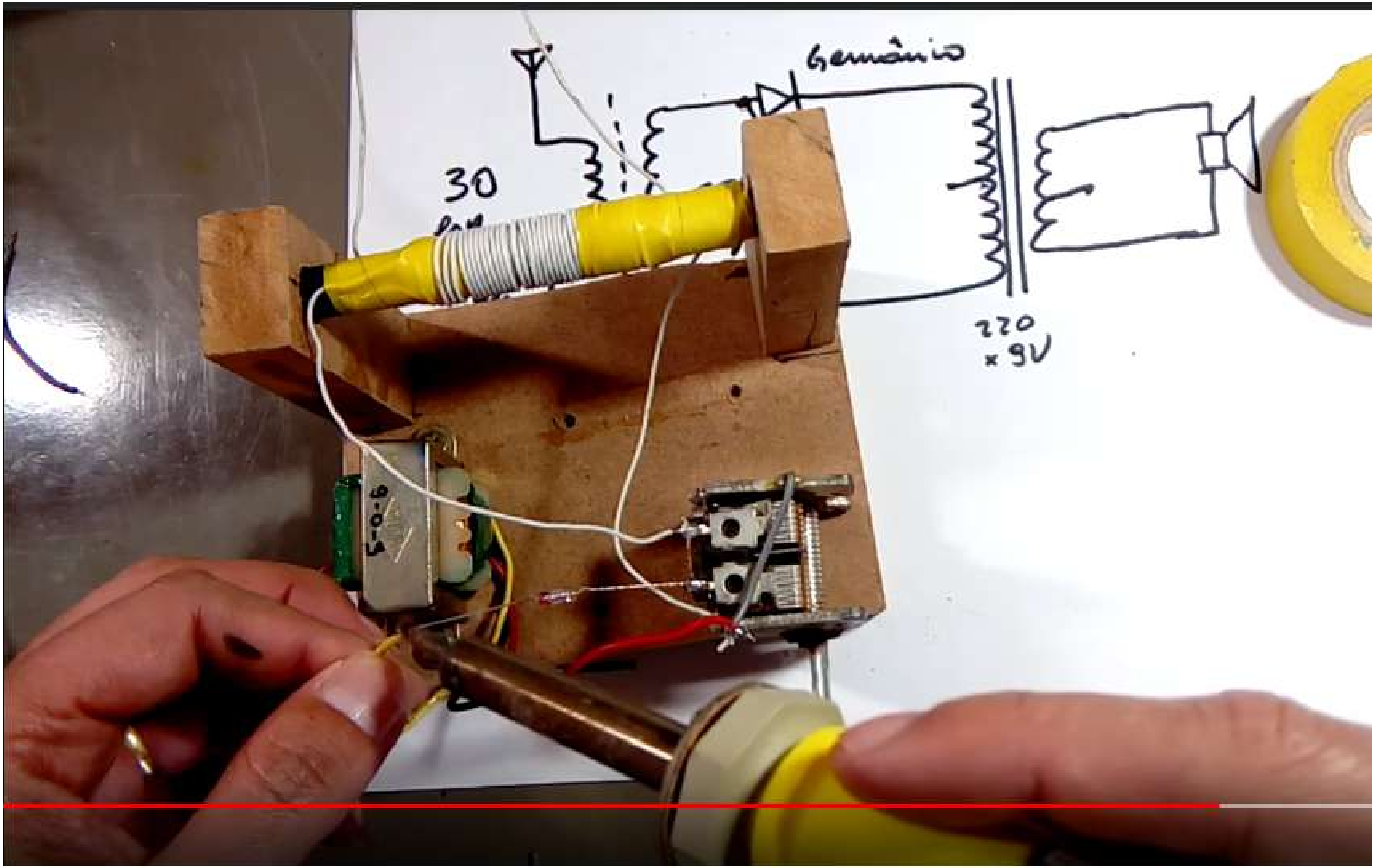

Germânio
30
220
x 9V

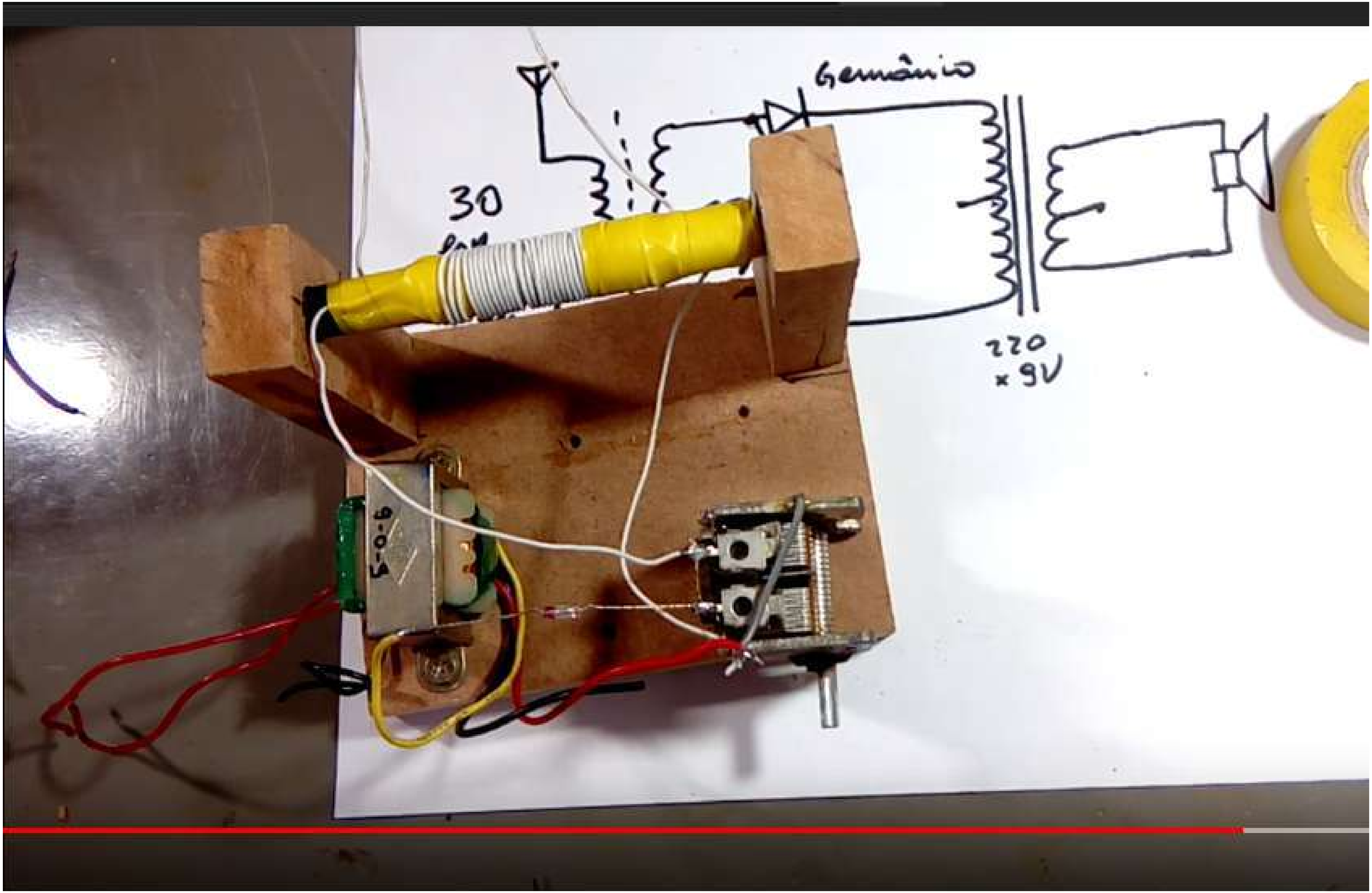

Germânio
30
220
x 9V

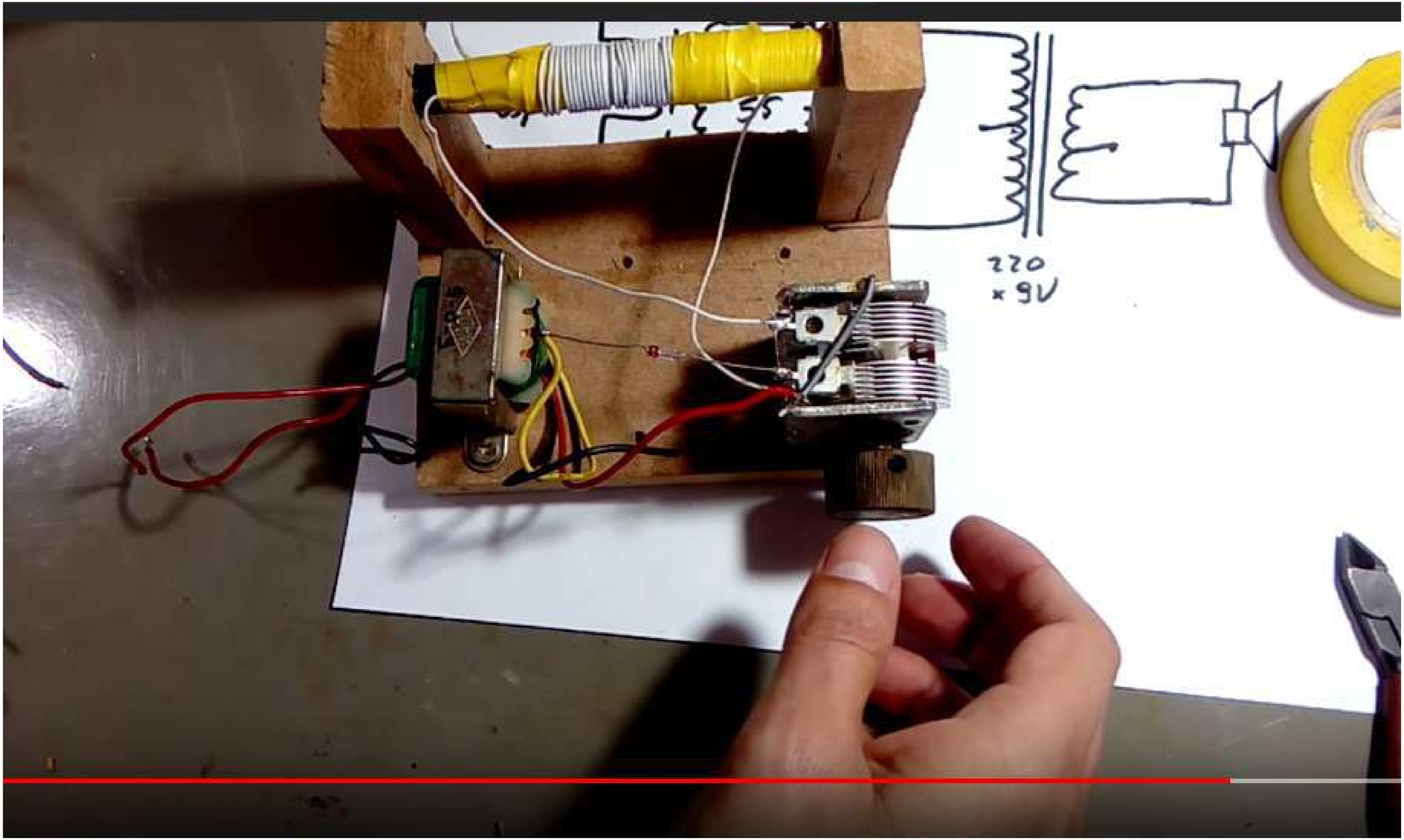

Germânio
30
220
x 9V


Germânio
30
220
x 9V


30
220
x 9V


Germânio
30
220
x 9V


Germânio
30
220
x 9V
9-0-9


220
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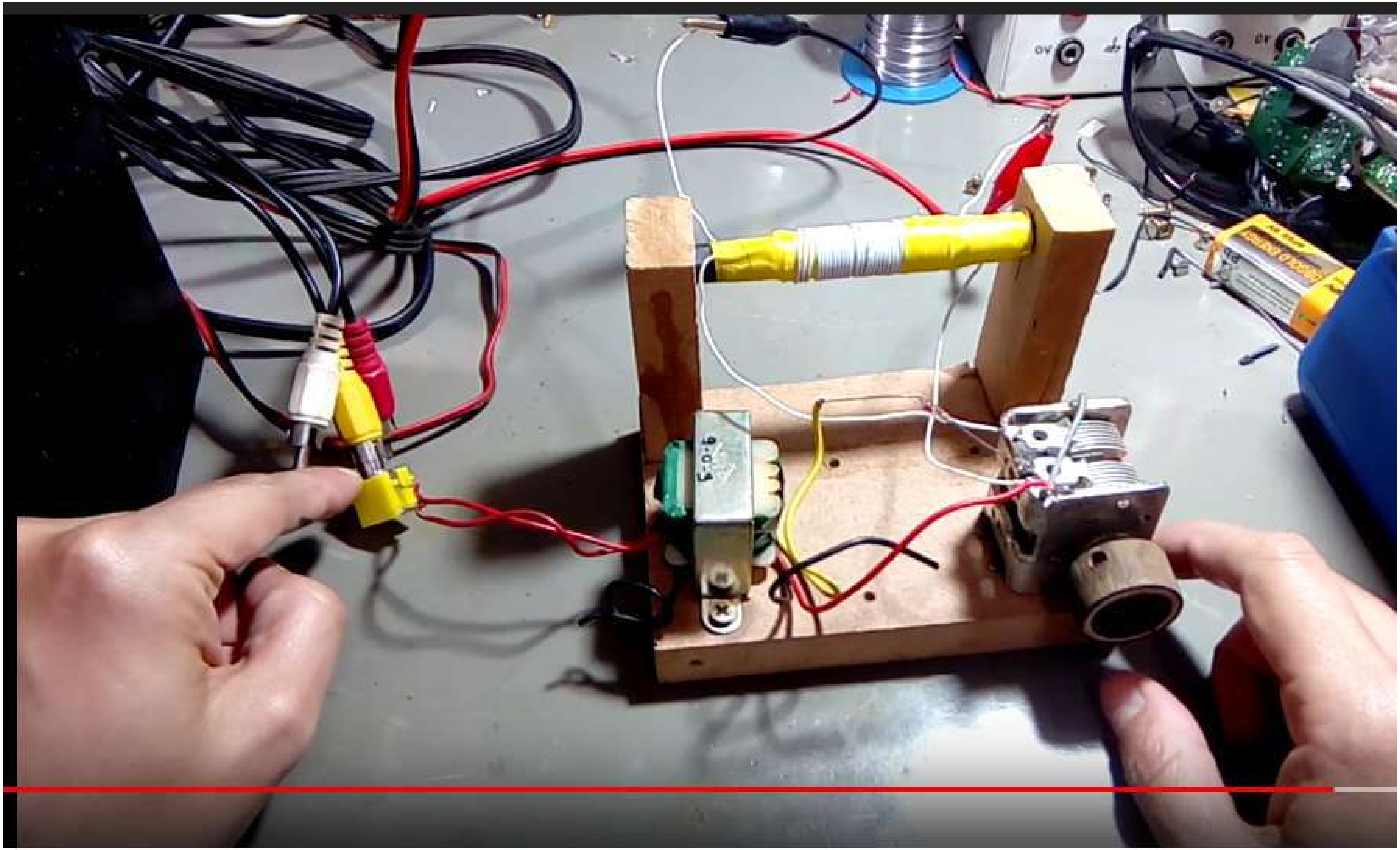
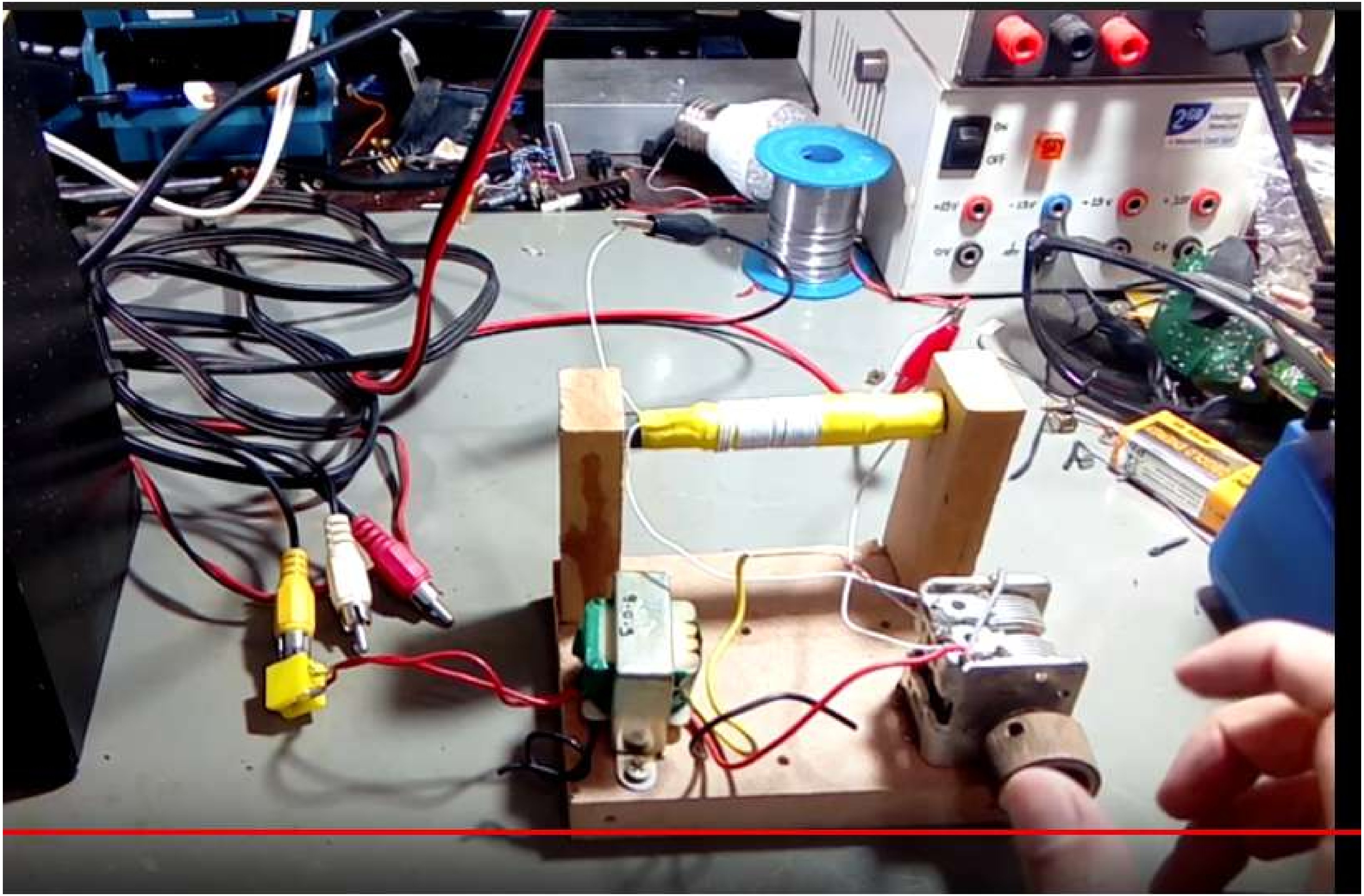
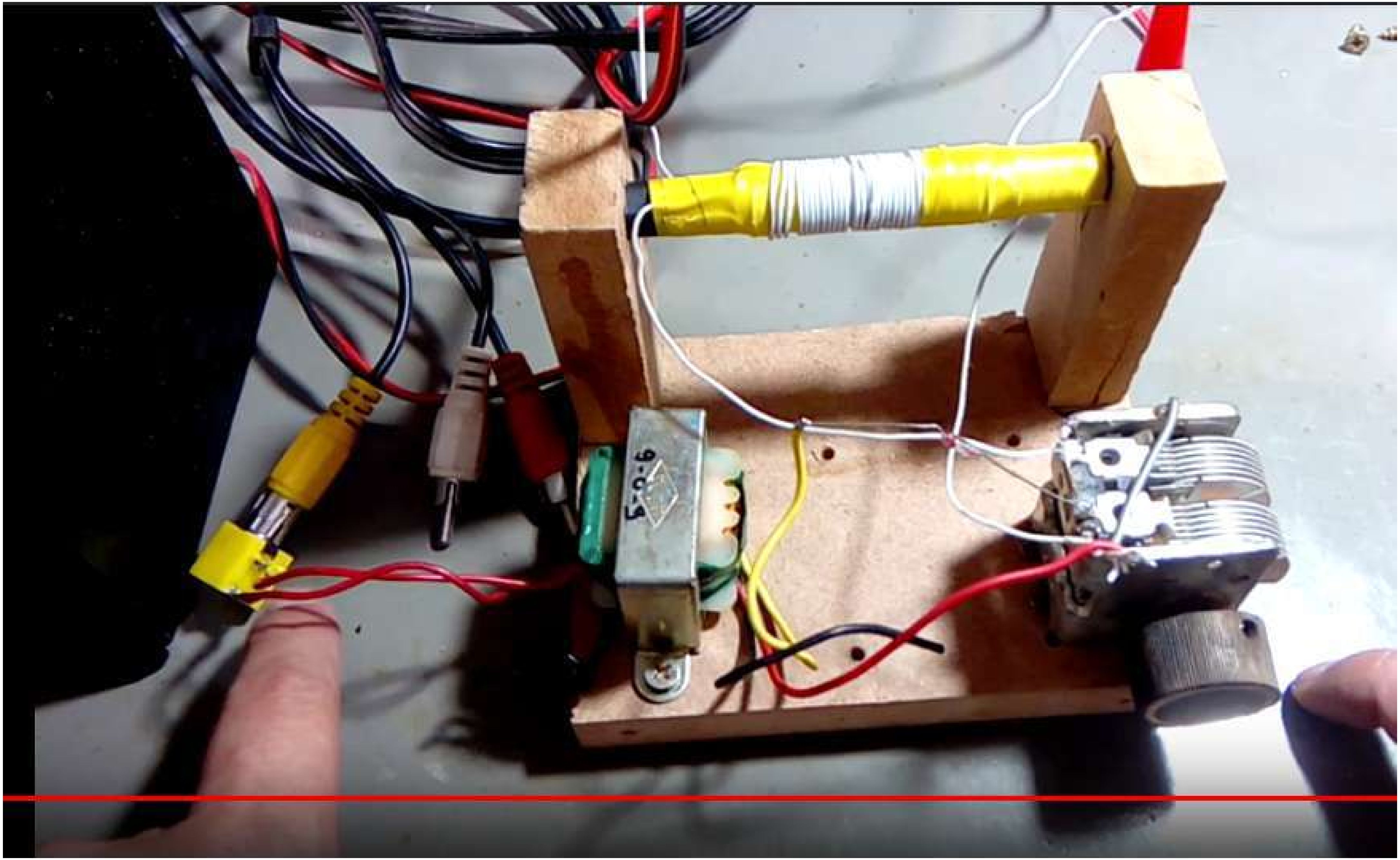
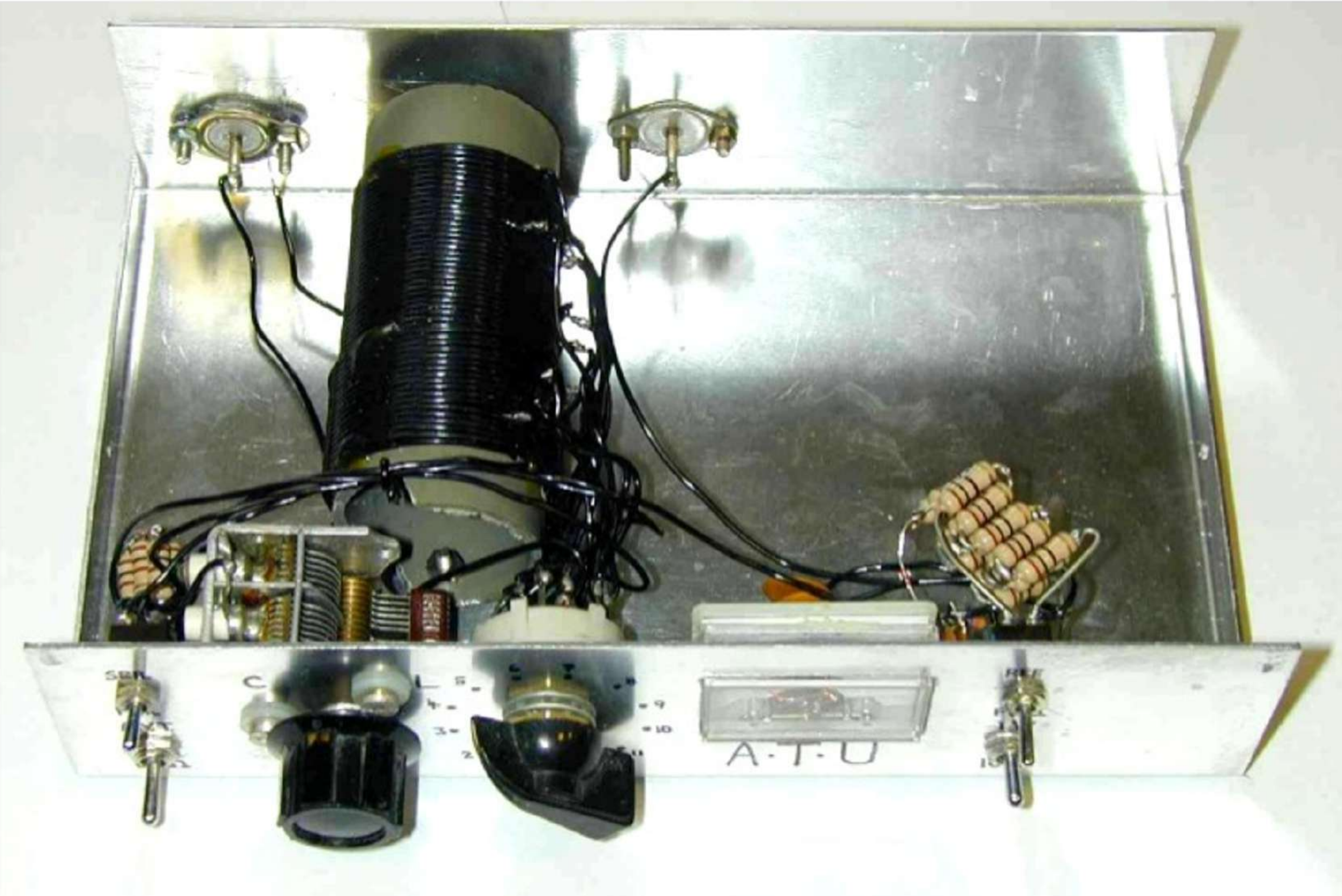
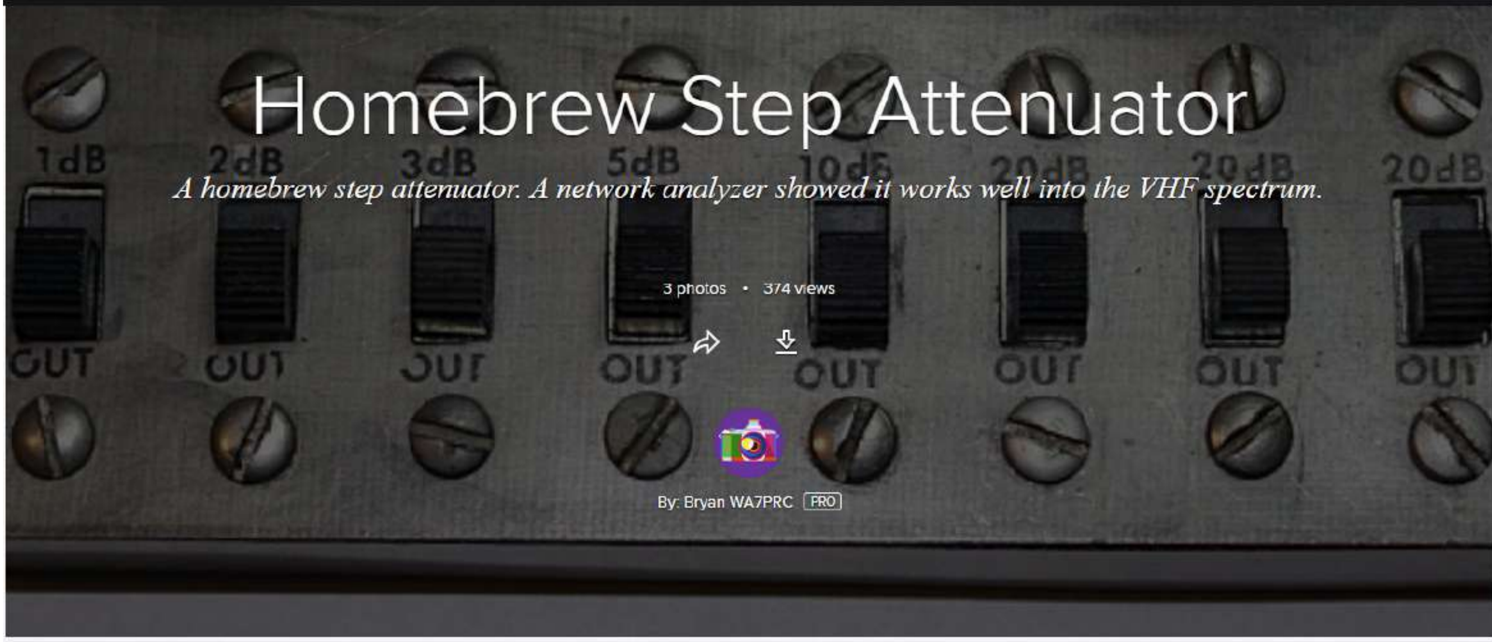



ON
OFF




C
L
A·T·U

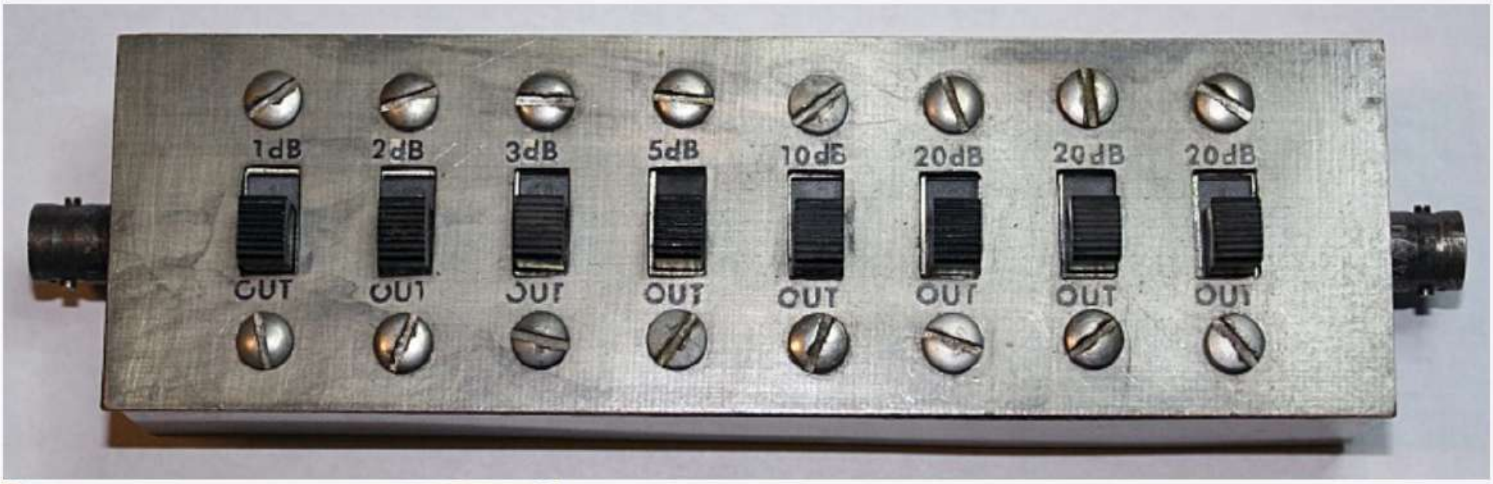


Homebrew Step Attenuator

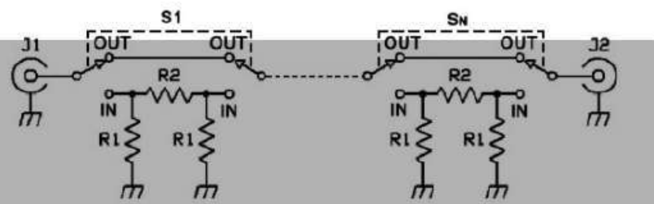
A homebrew step attenuator. A network analyzer showed it works well into the VHF spectrum.

3 photos • 374 views

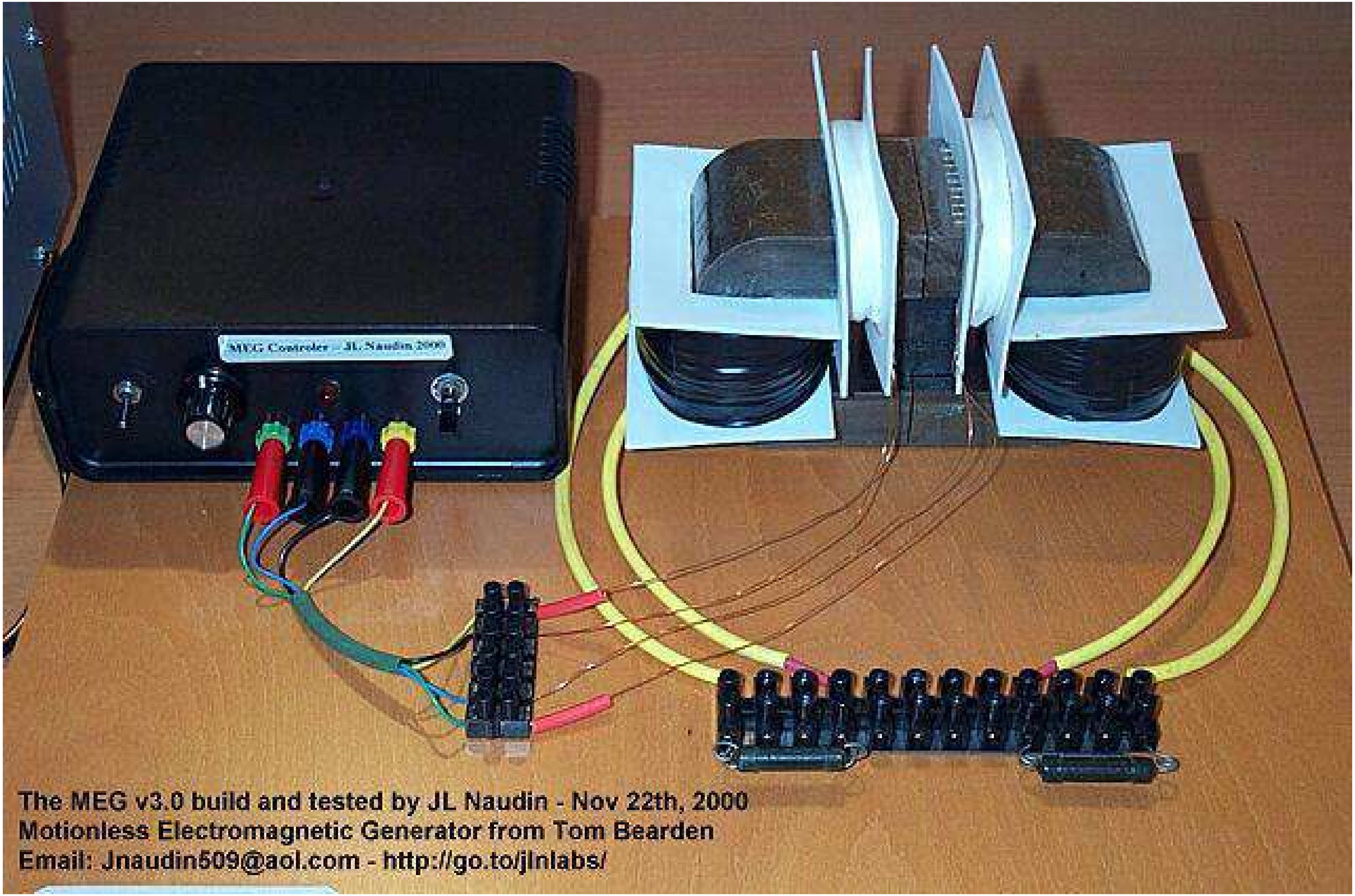
By: Bryan WA7PRC PRO

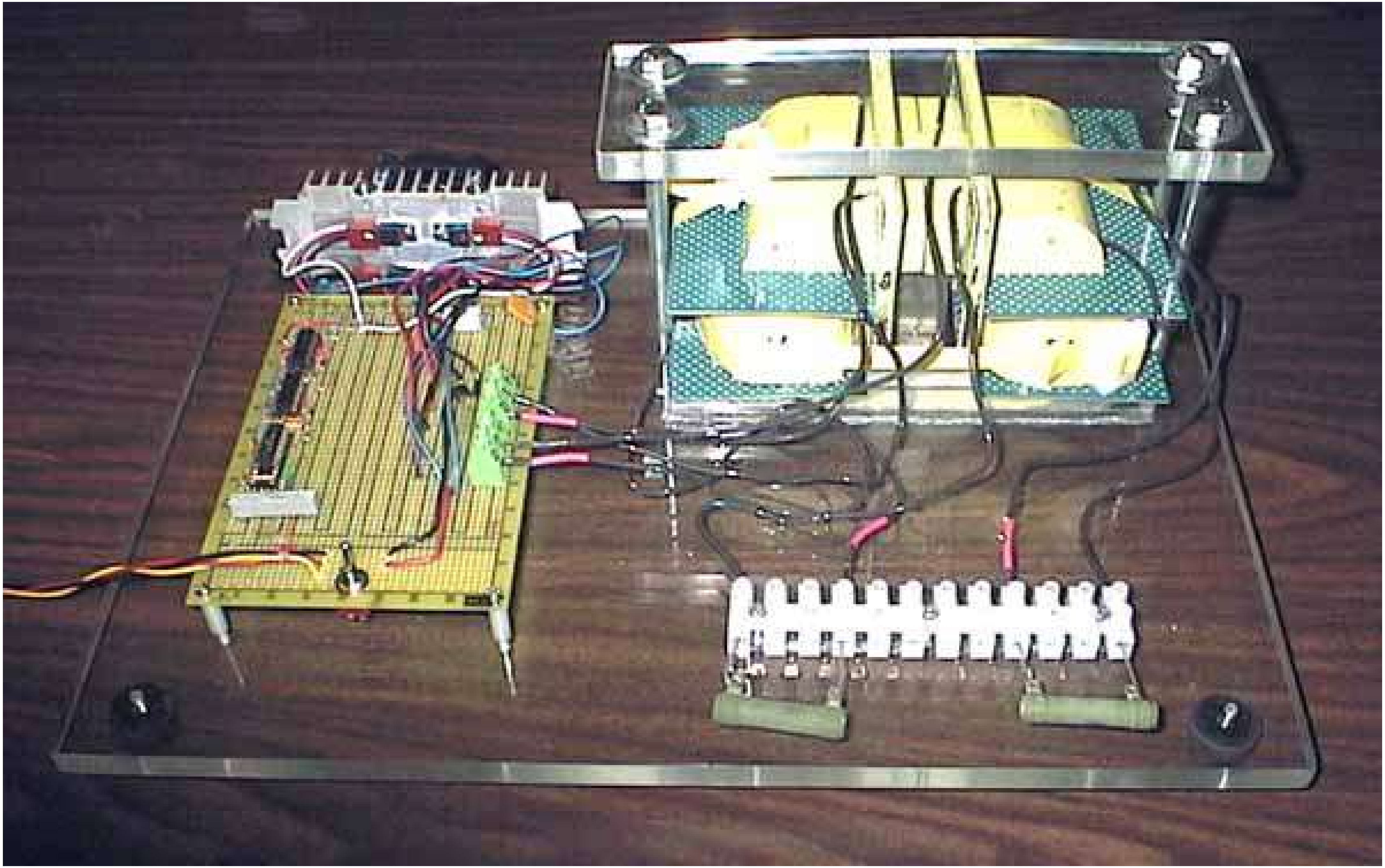


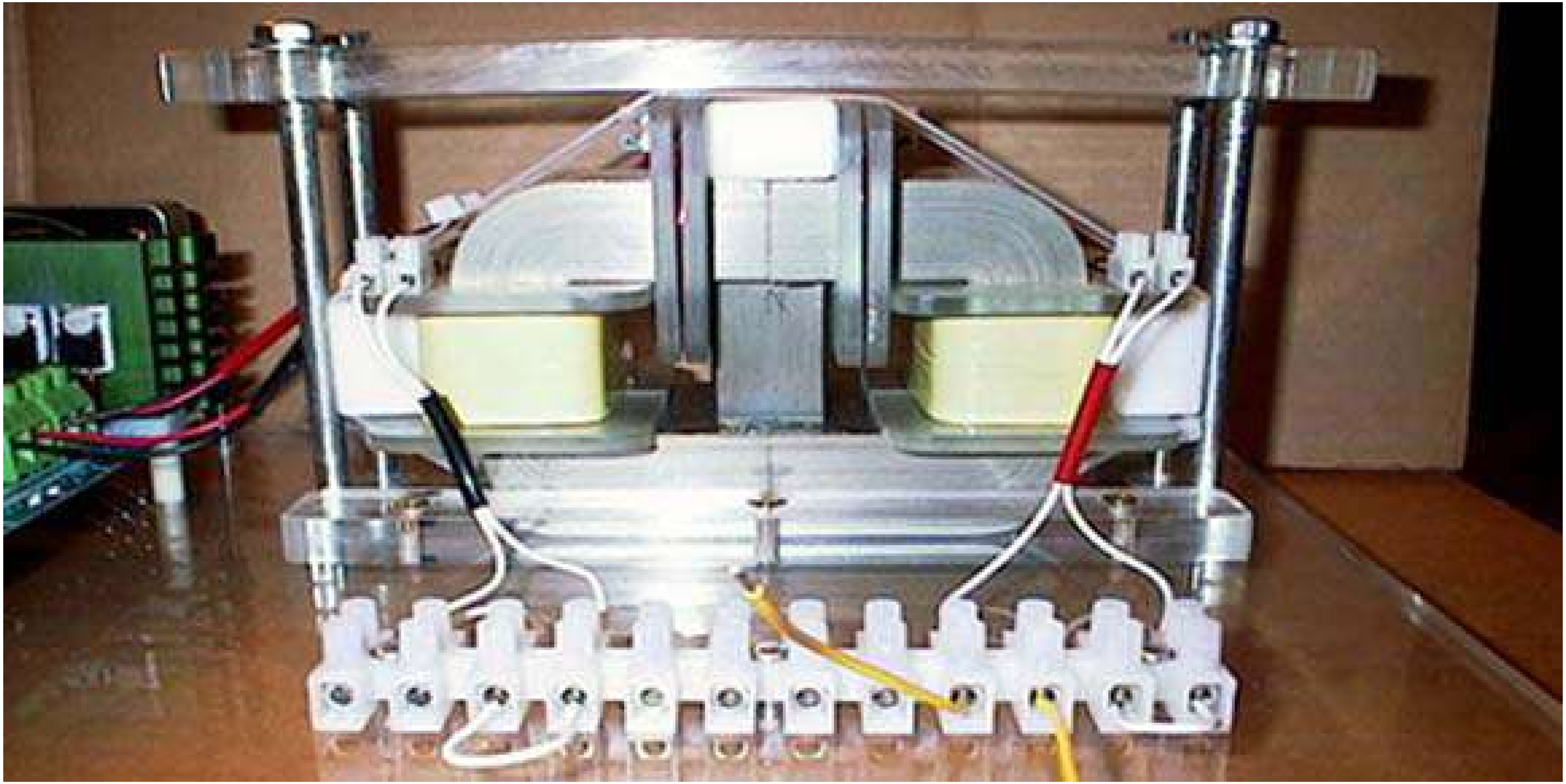
50-OHM STEP ATTENUATOR

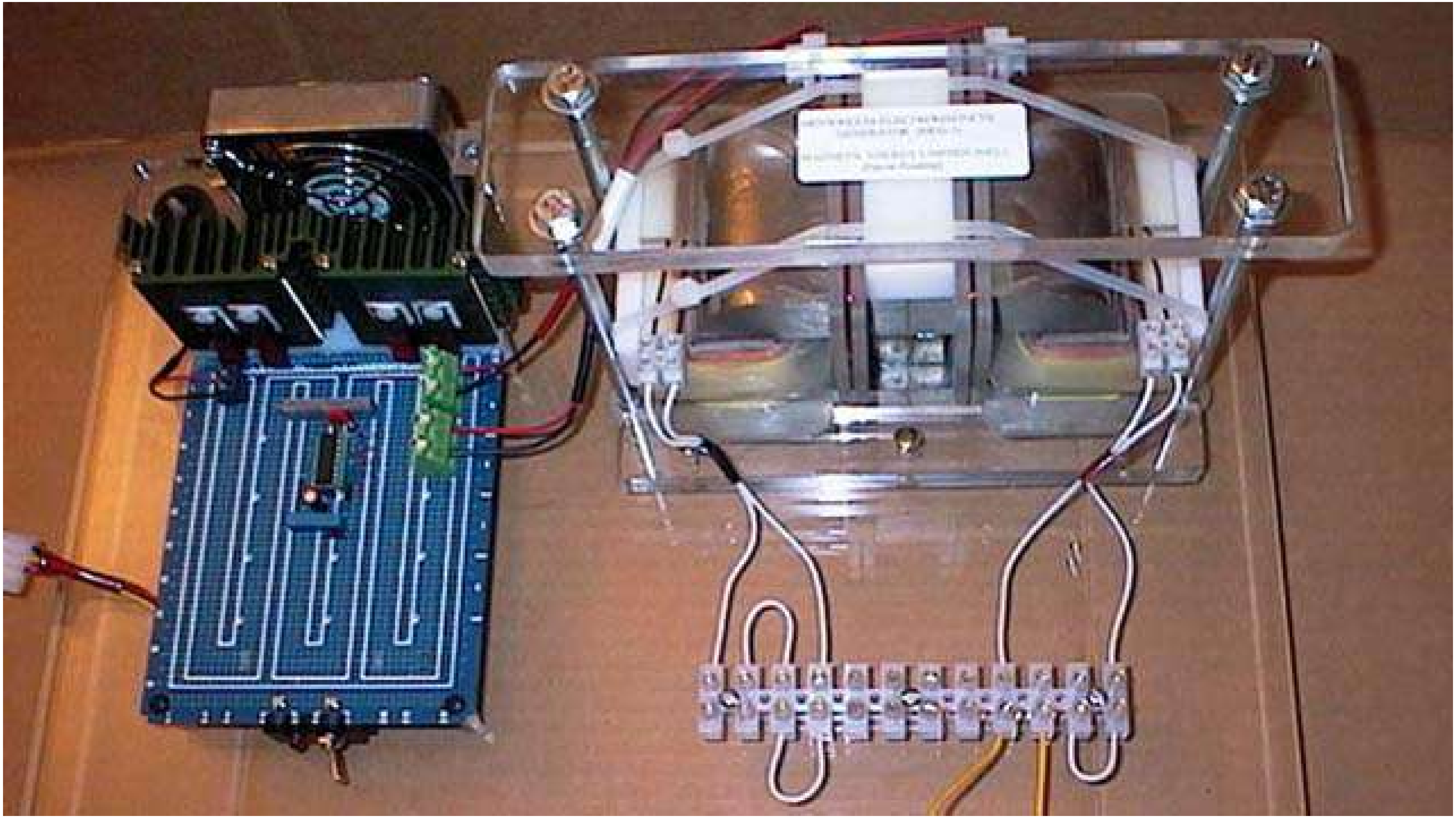


50Ω ATTEN	CALCULATED VALUES R1	CALCULATED VALUES R2	1% RESISTORS (E48) R1	1% RESISTORS (E48) R2	5% RESISTORS (E24) R1	5% RESISTORS (E24) R2
1dB	869Ω	5.8Ω	887Ω	5.6Ω	910Ω	5.6Ω
2dB	436Ω	12Ω	453Ω	12.0Ω	470Ω	12Ω
3dB	294Ω	18Ω	294Ω	18.0Ω	300Ω	18Ω
5dB	178Ω	30Ω	178Ω	30.1Ω	200Ω	33Ω
10dB	96Ω	71Ω	95.3Ω	71.5Ω	100Ω	75Ω
20dB	61Ω	248Ω	61.9Ω	249Ω	62Ω	270Ω


MEG Controler - JL Naudin 2000
The MEG v3.0 build and tested by JL Naudin - Nov 22th, 2000
Motionless Electromagnetic Generator from Tom Bearden
Email: Jnaudin509@aol.com - http://go.to/jlnlabs/



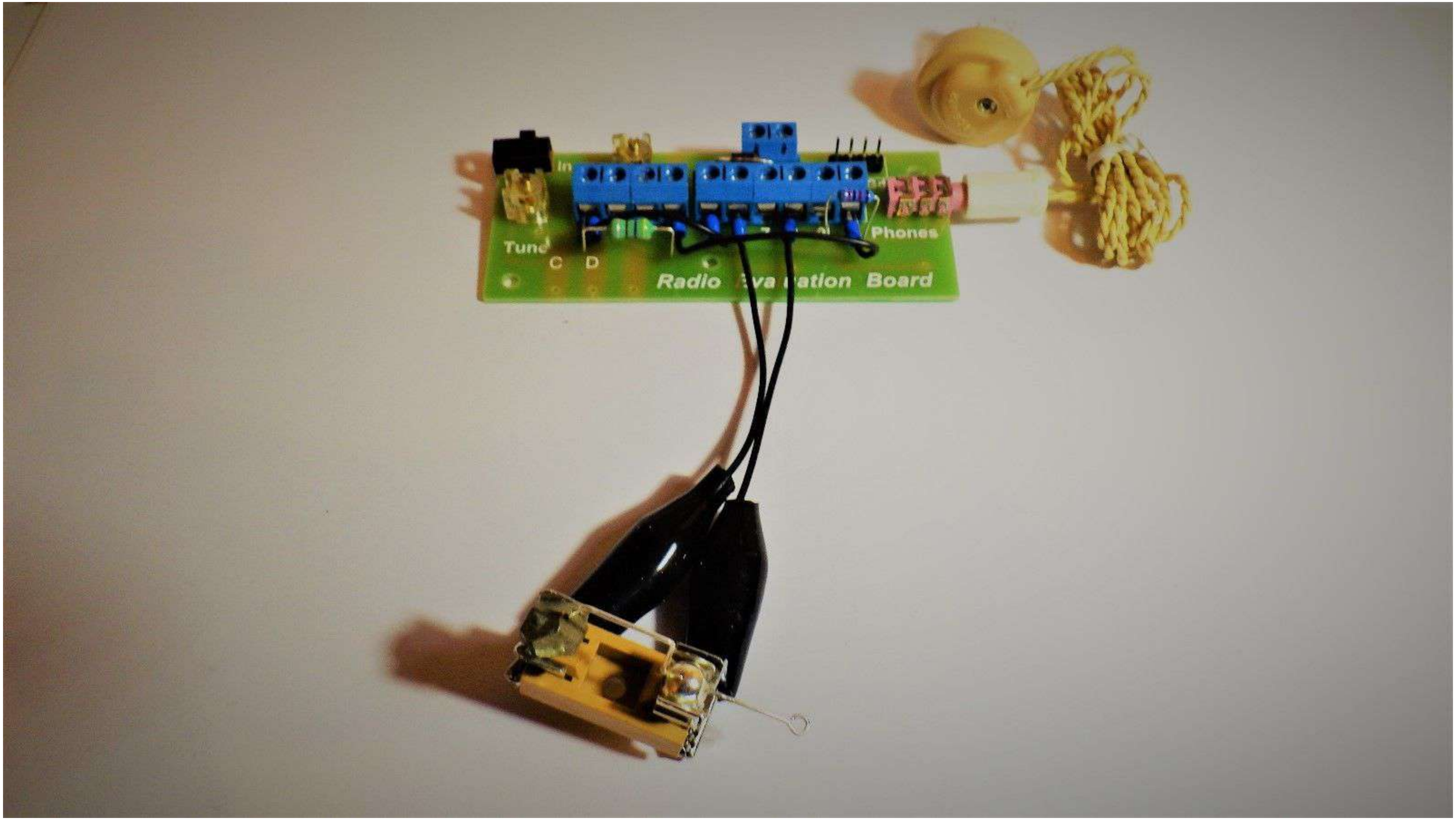


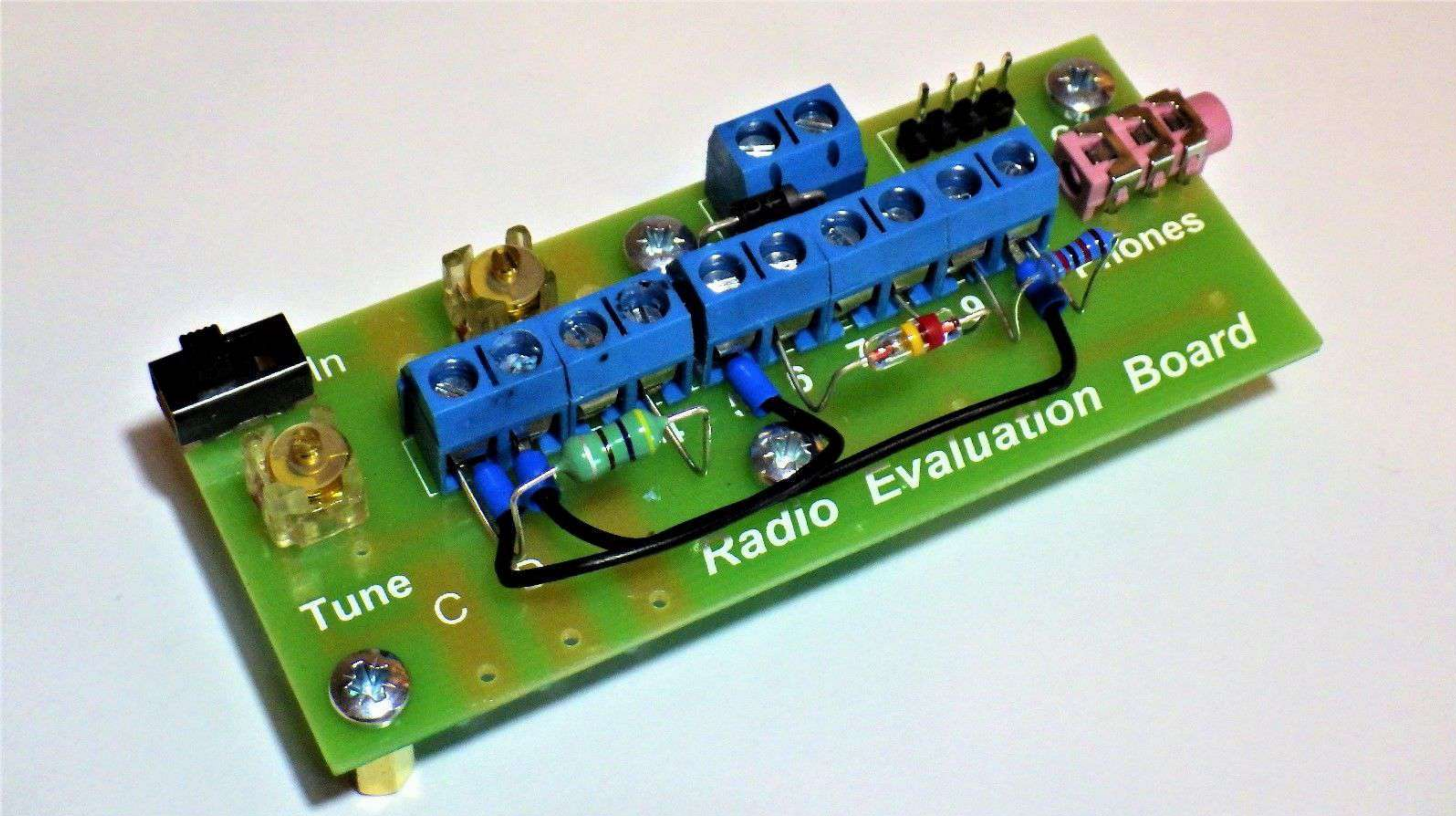



In
VCC In Gd Gd
1 2 3 4 5 6 7 8 9 10 Phones
Tune
C D
Radio Evaluation Board

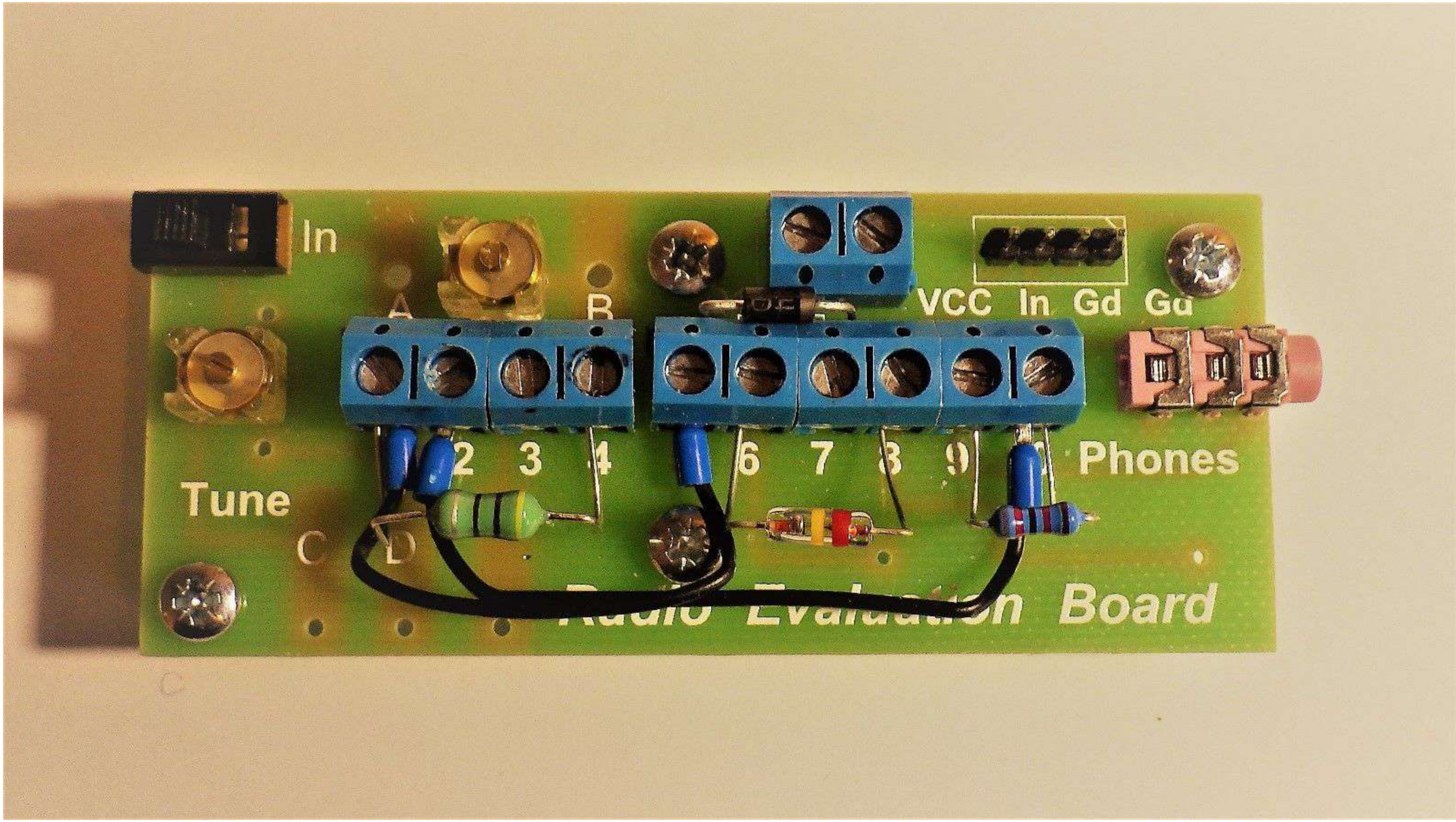

In
1 2 3 4 5 6 7 8 9 10 Phones
Tune
C D
Radio Evaluation Board

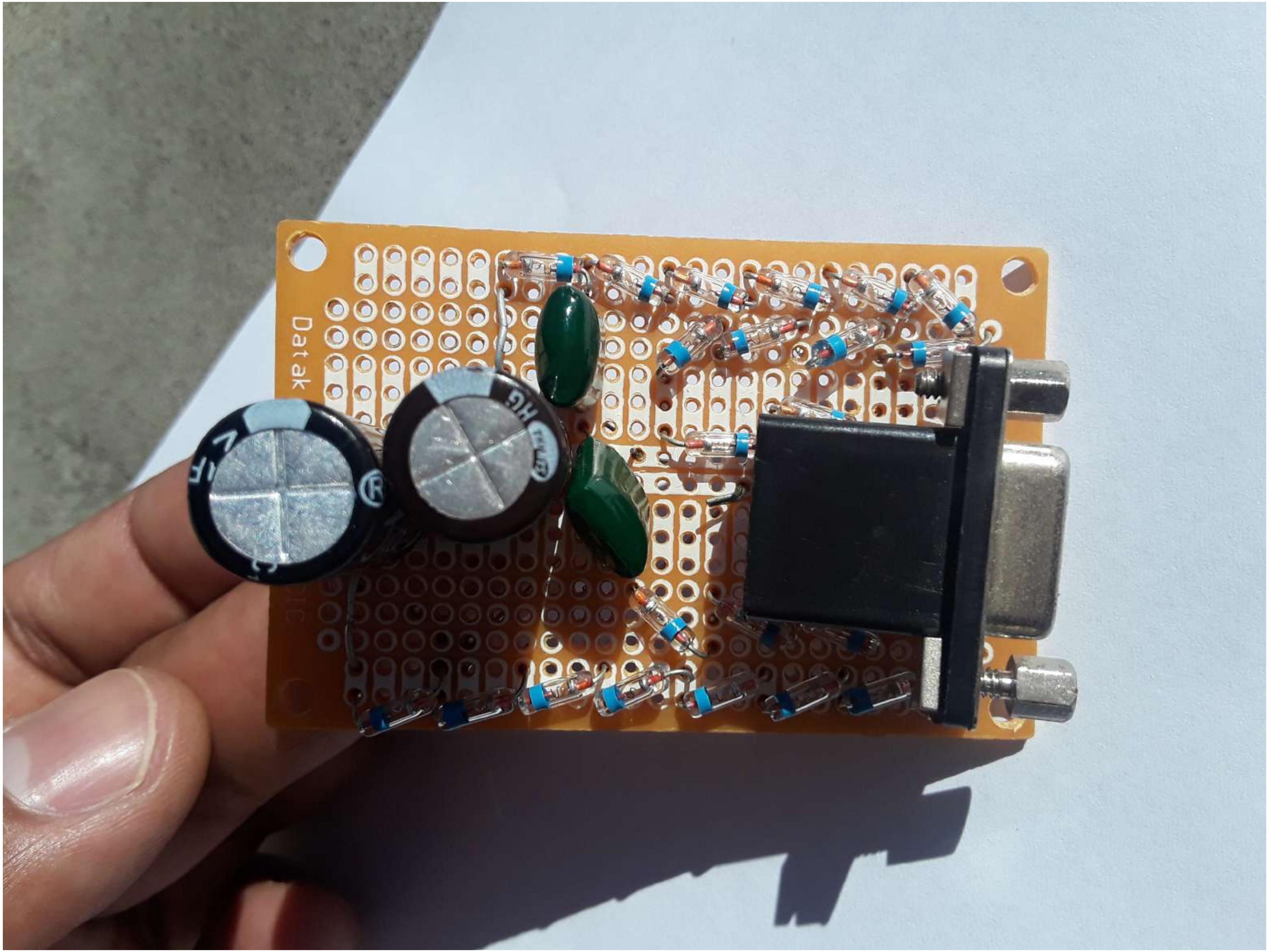
In
Tune
C
D
2
3
6
9
VCC
In
Gd
Gd
Phones
Radio Evaluation Board

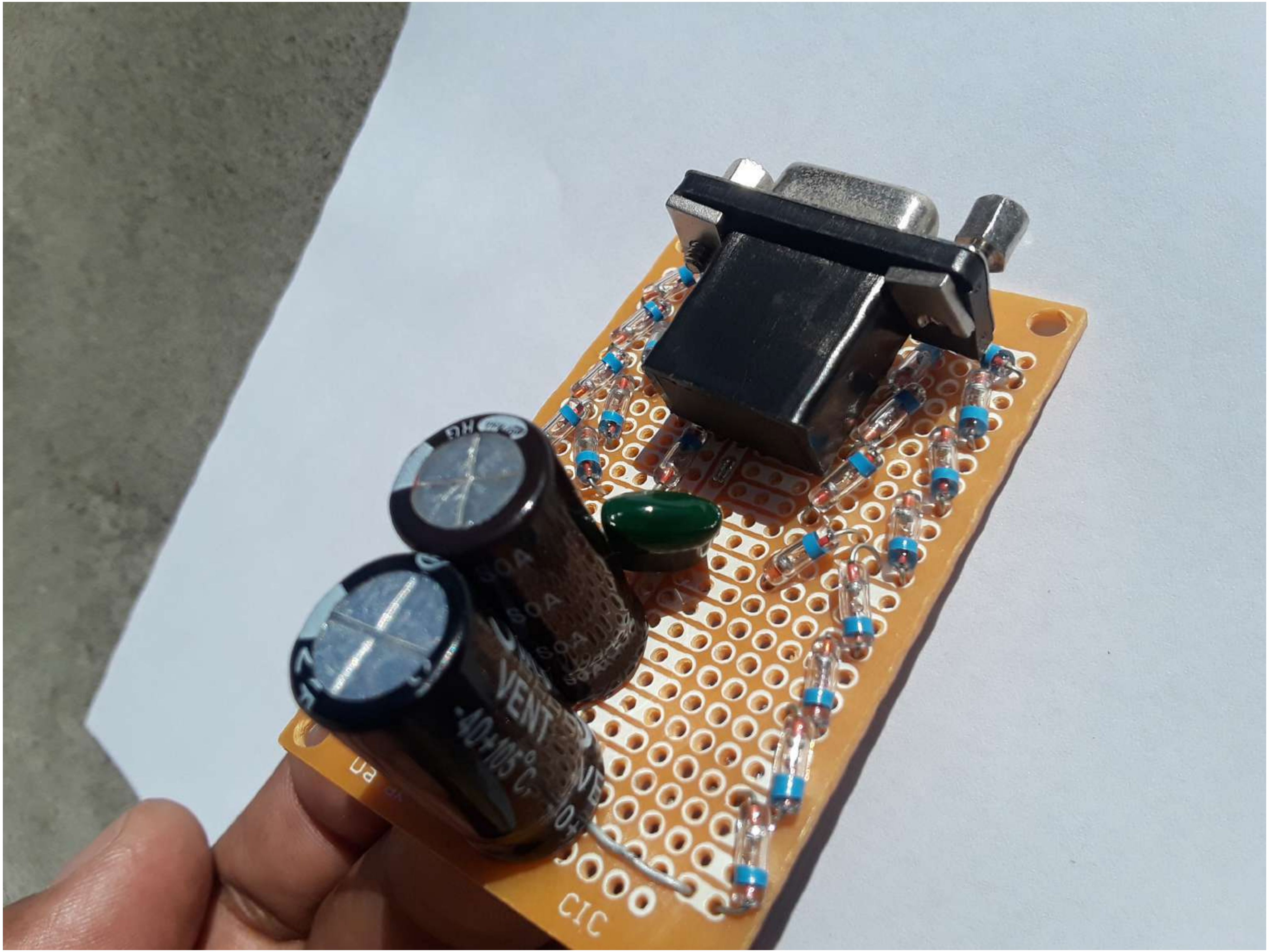

Tune
C D
Phones
Radio
Board

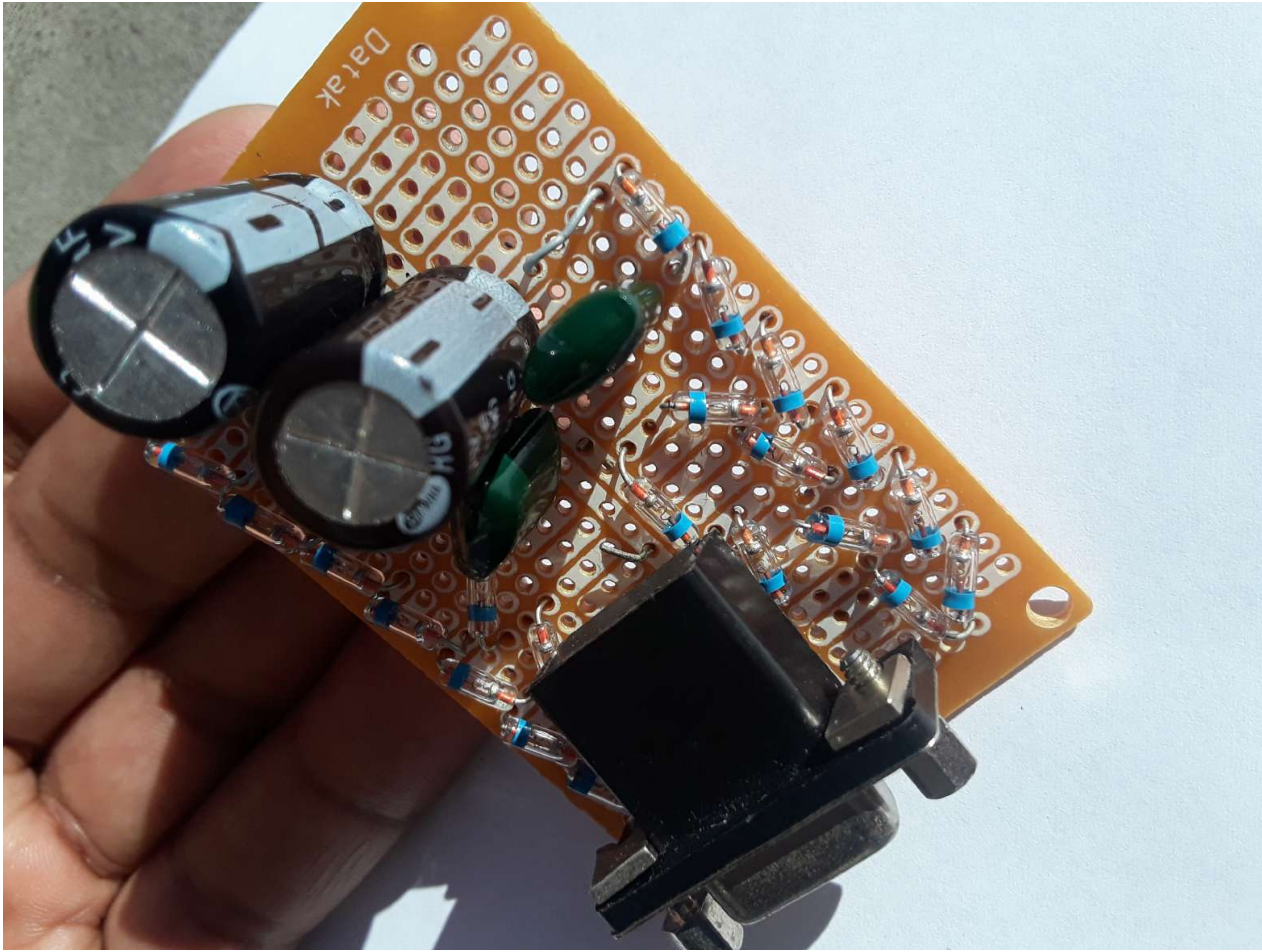


Radio Evaluation Board
Tune
C
In
Phones


In
A
B
VCC In Gd Gd
2 3 4
6 7 8 9
Phones
Tune
C D
Radio Evaluation Board


Datak

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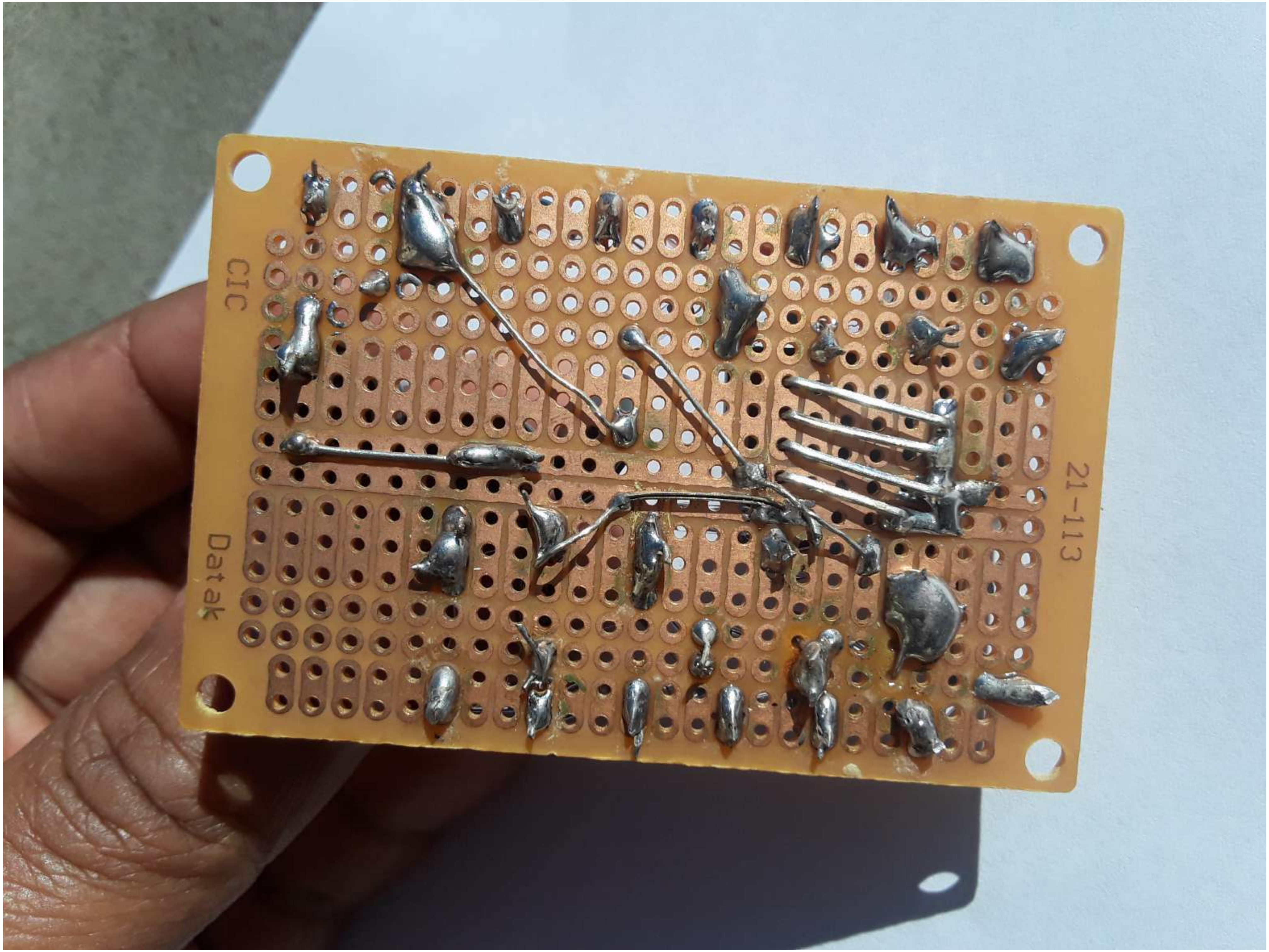
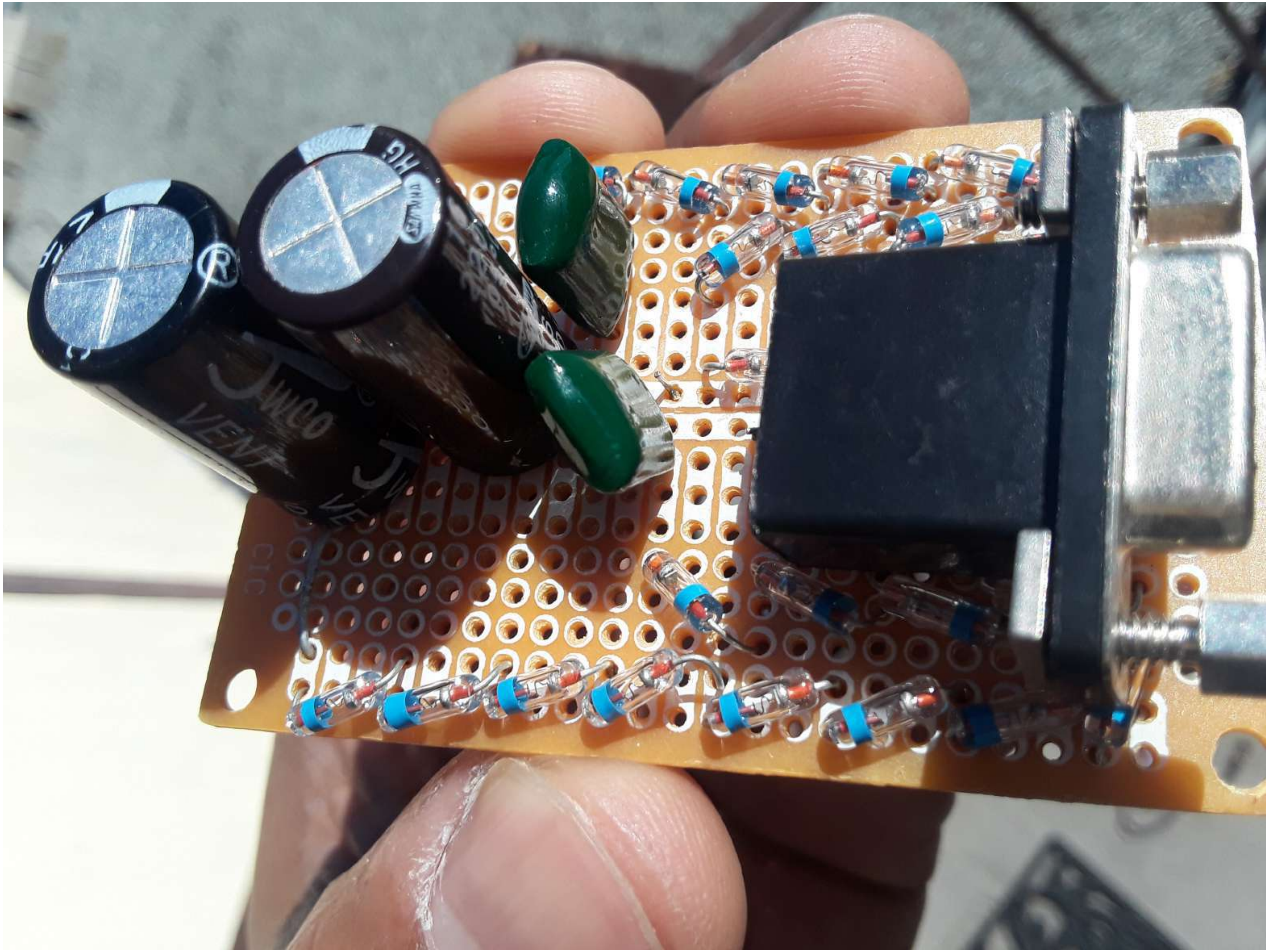
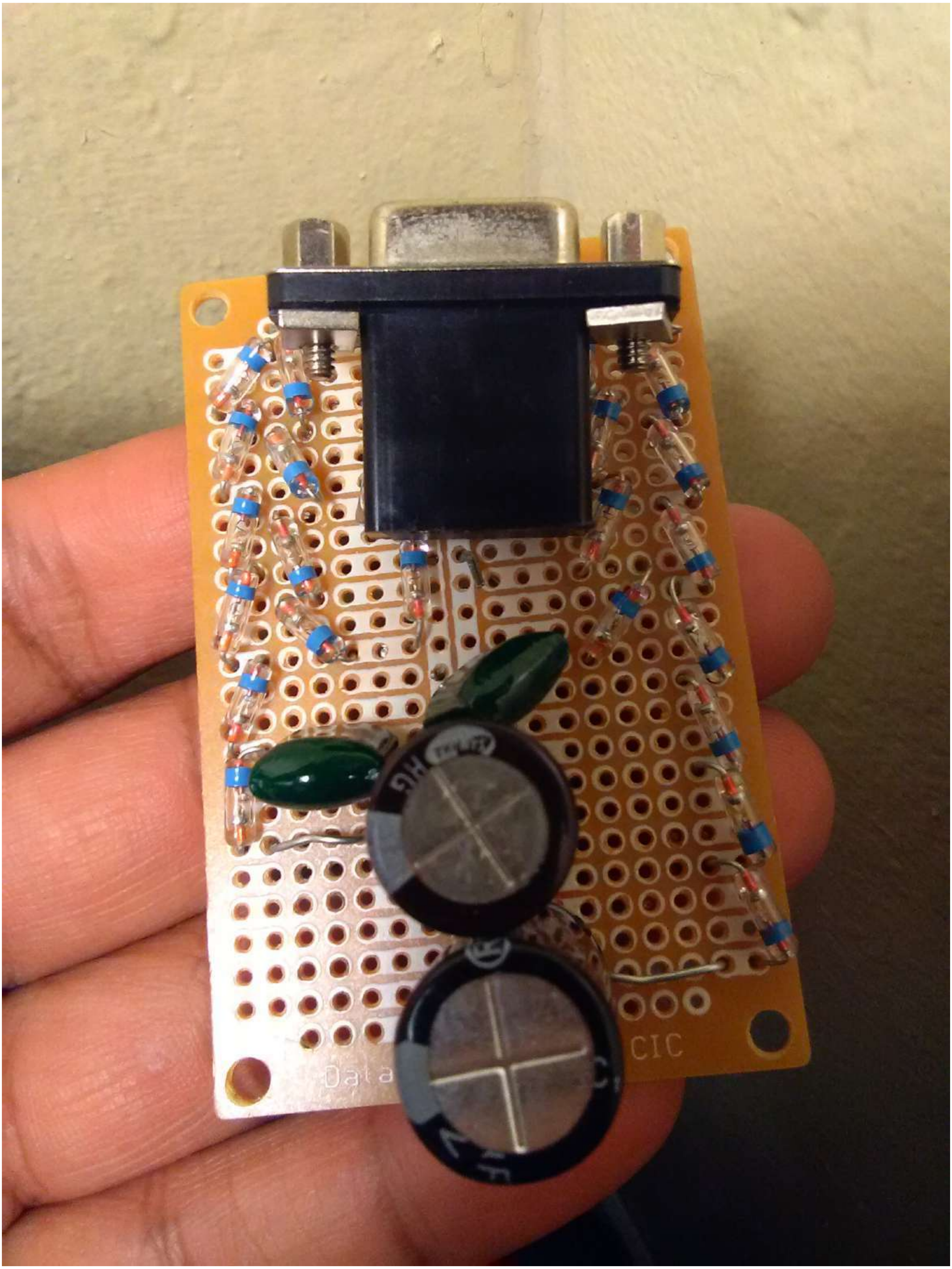
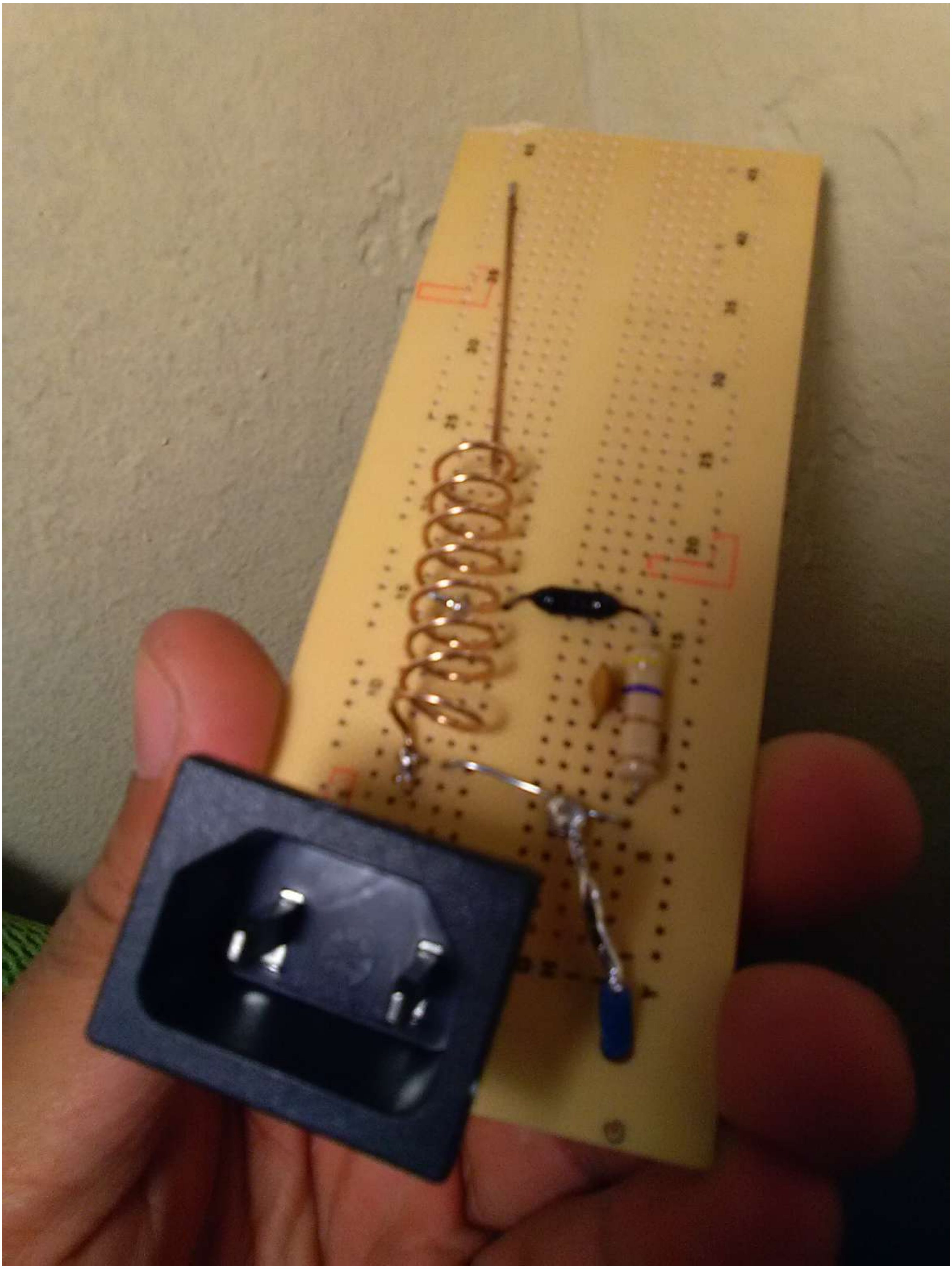
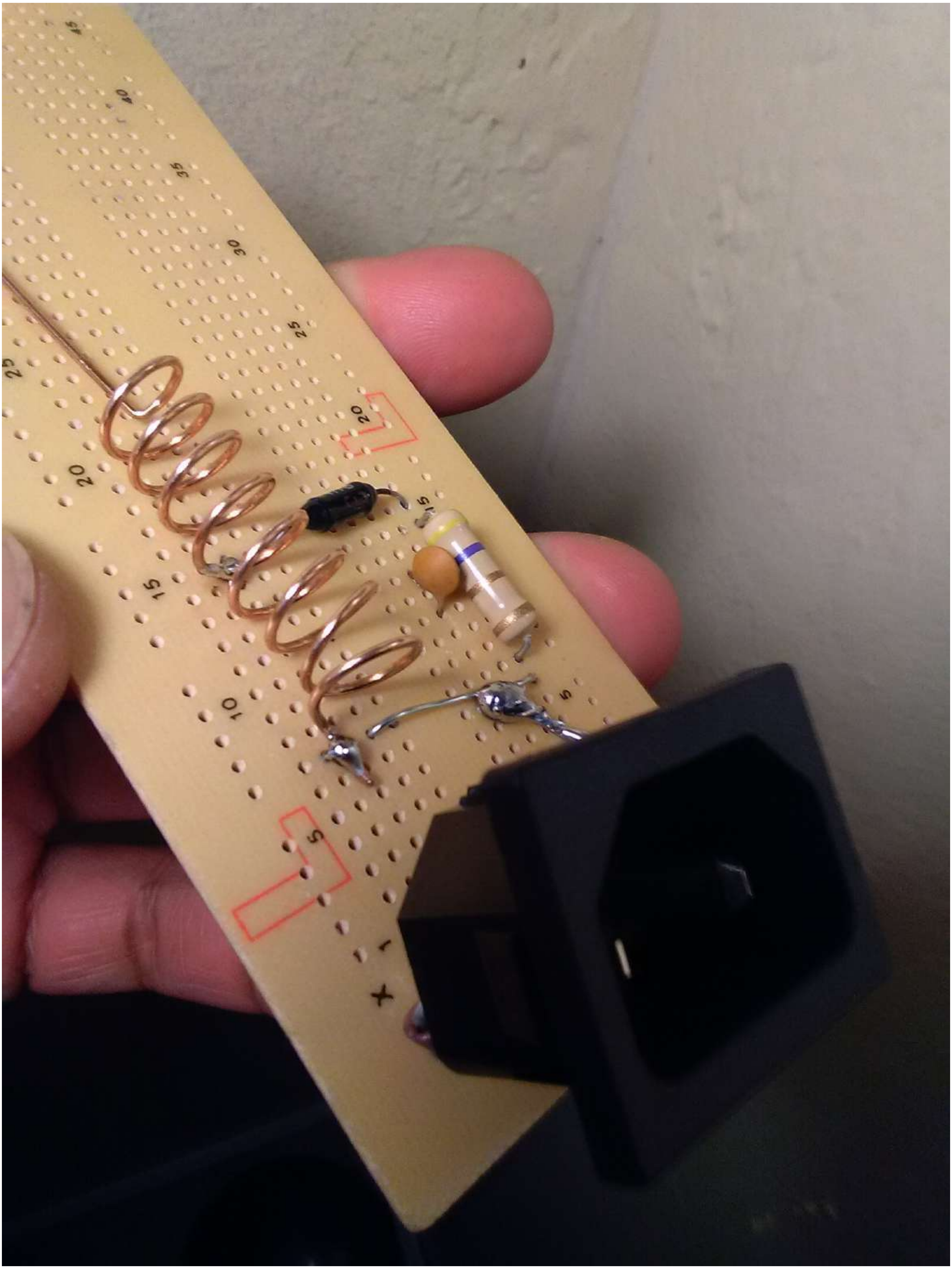
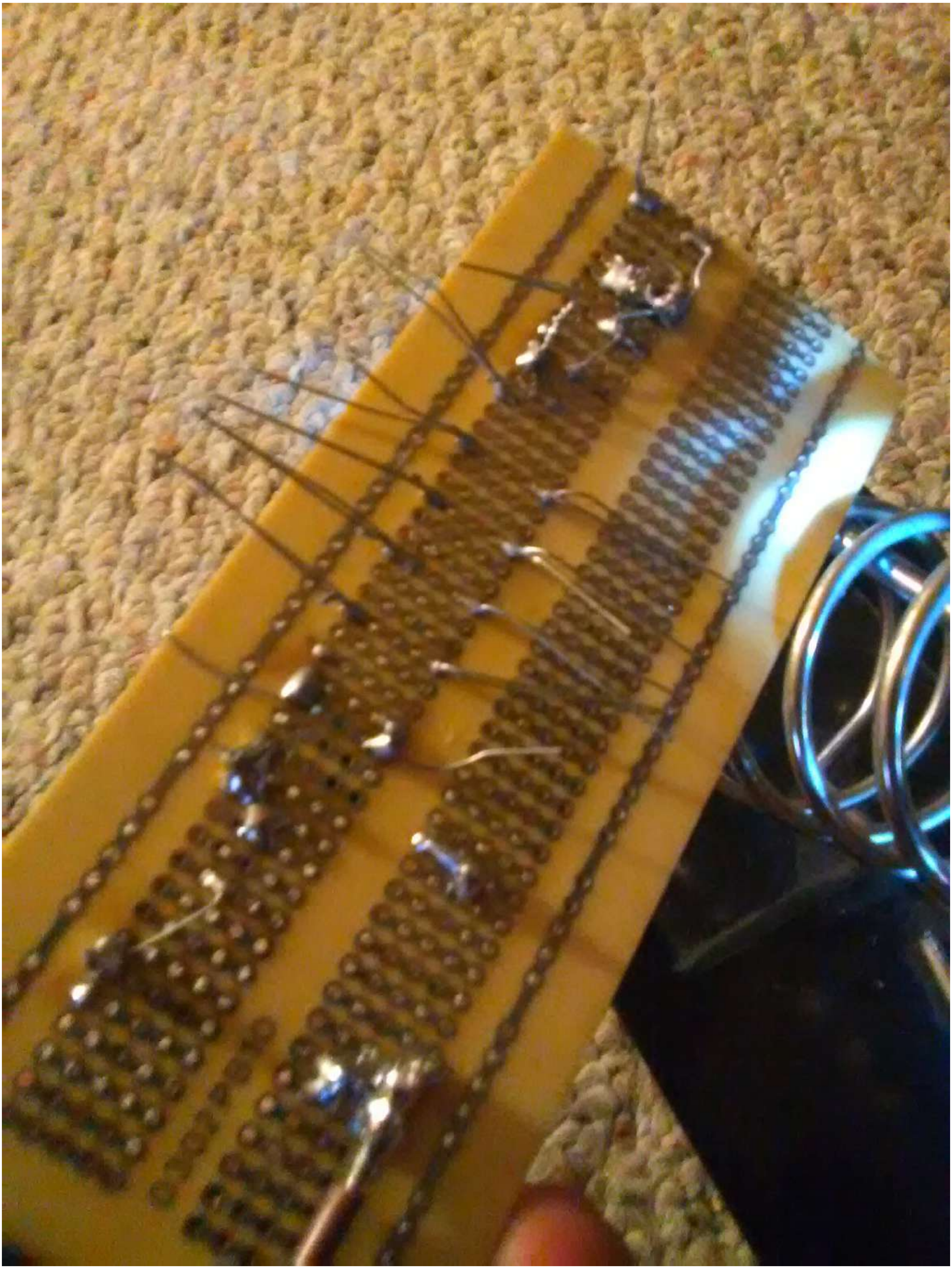

CIC
Datak
21-113

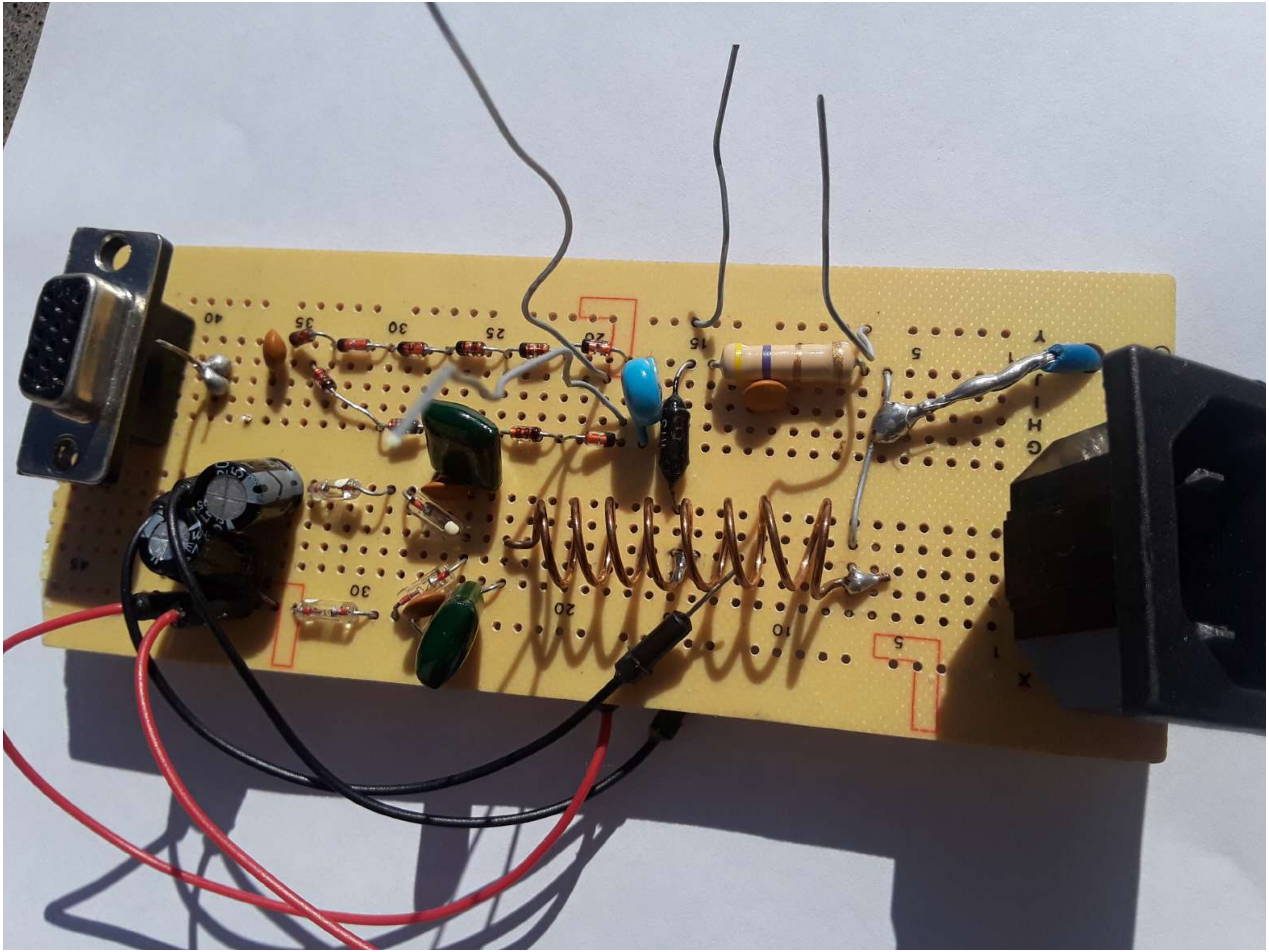


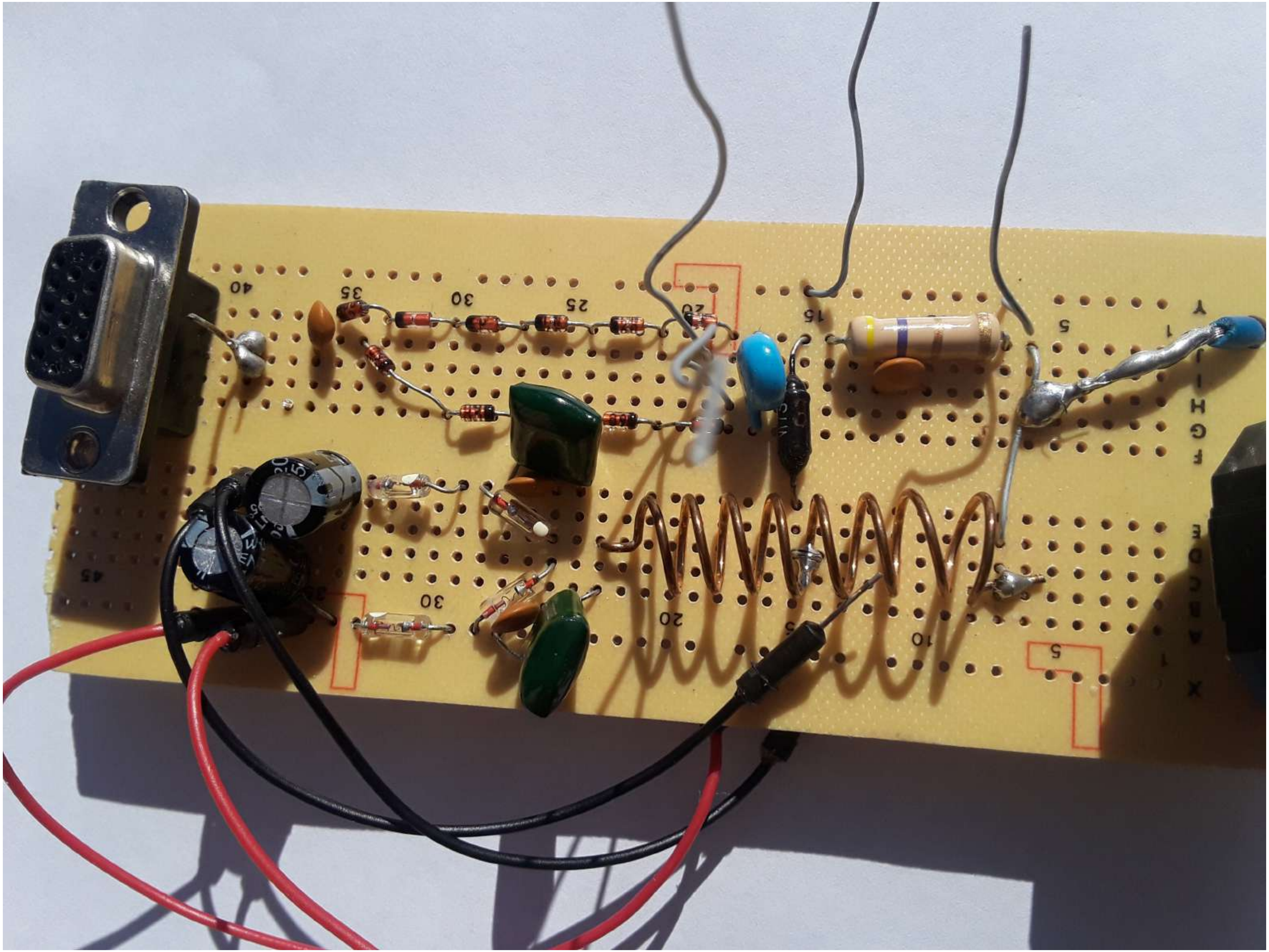


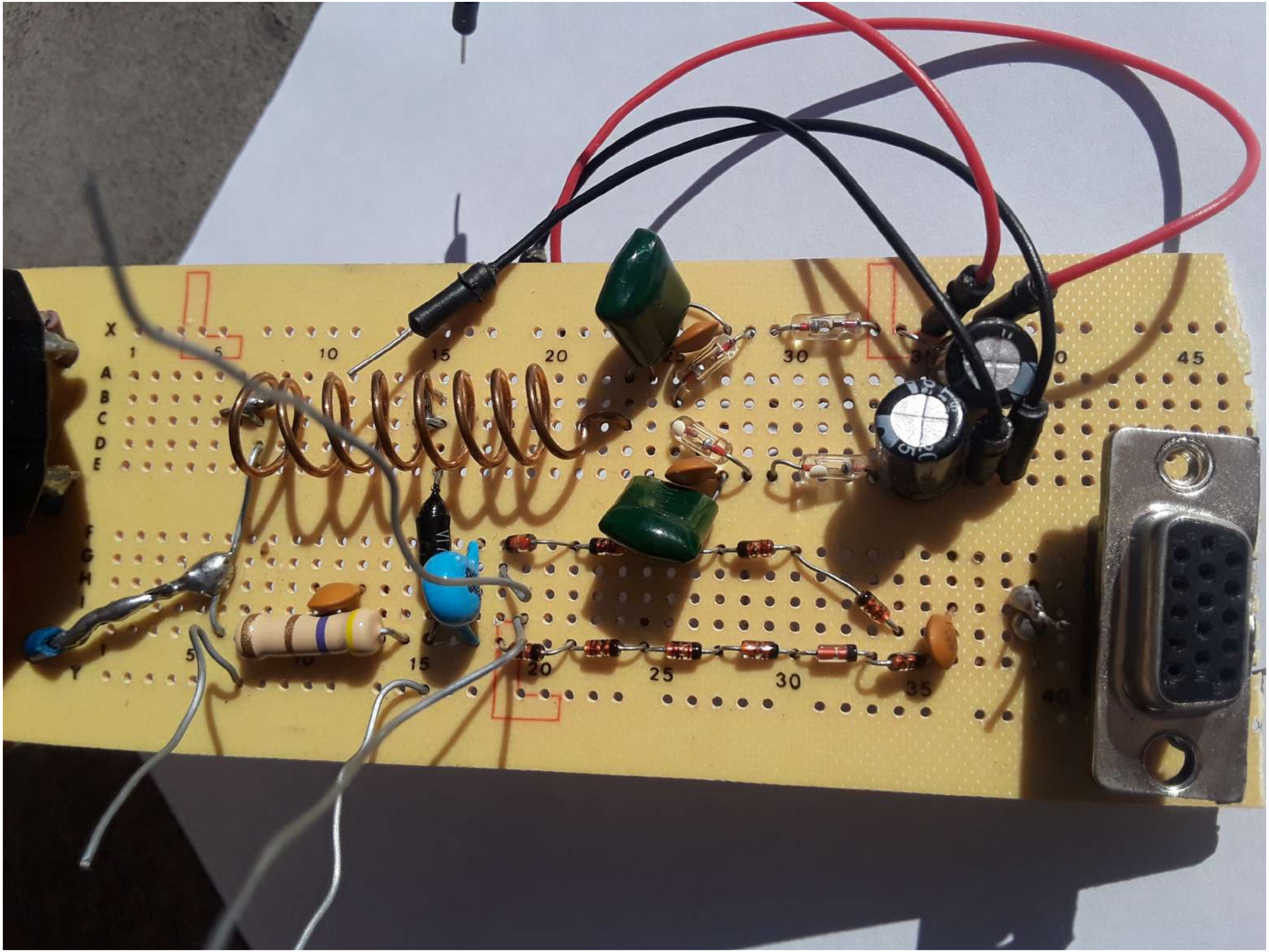


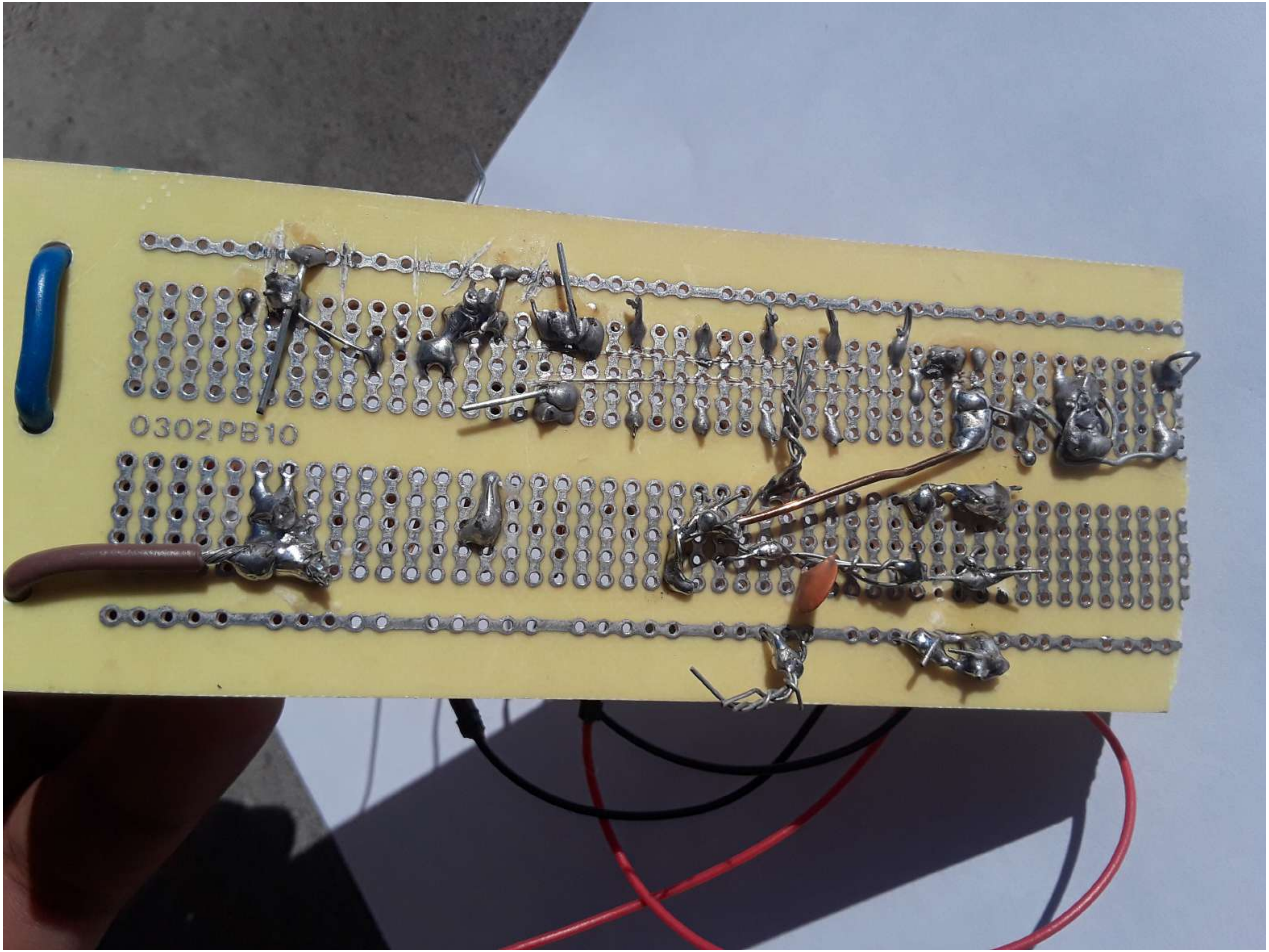


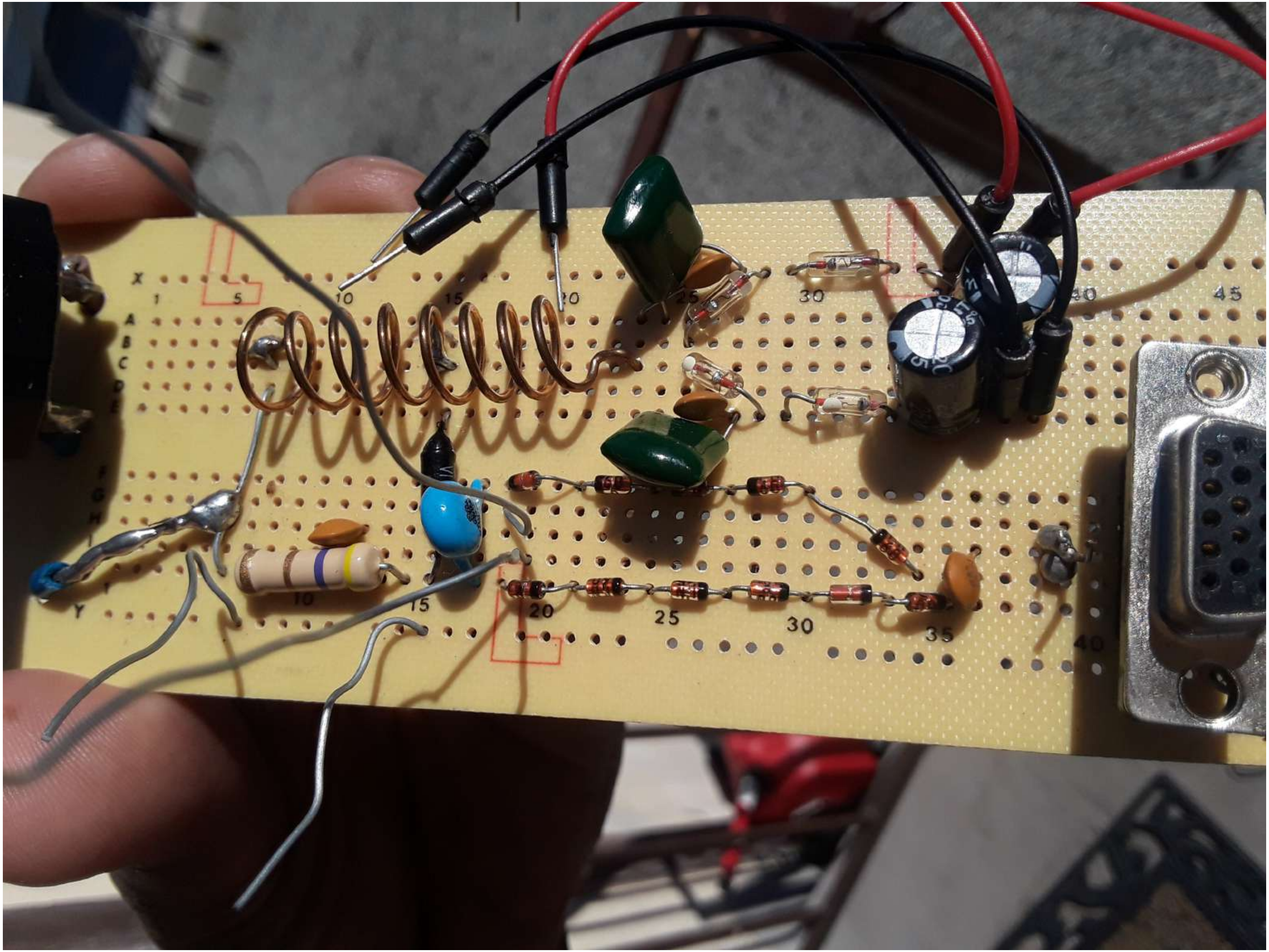




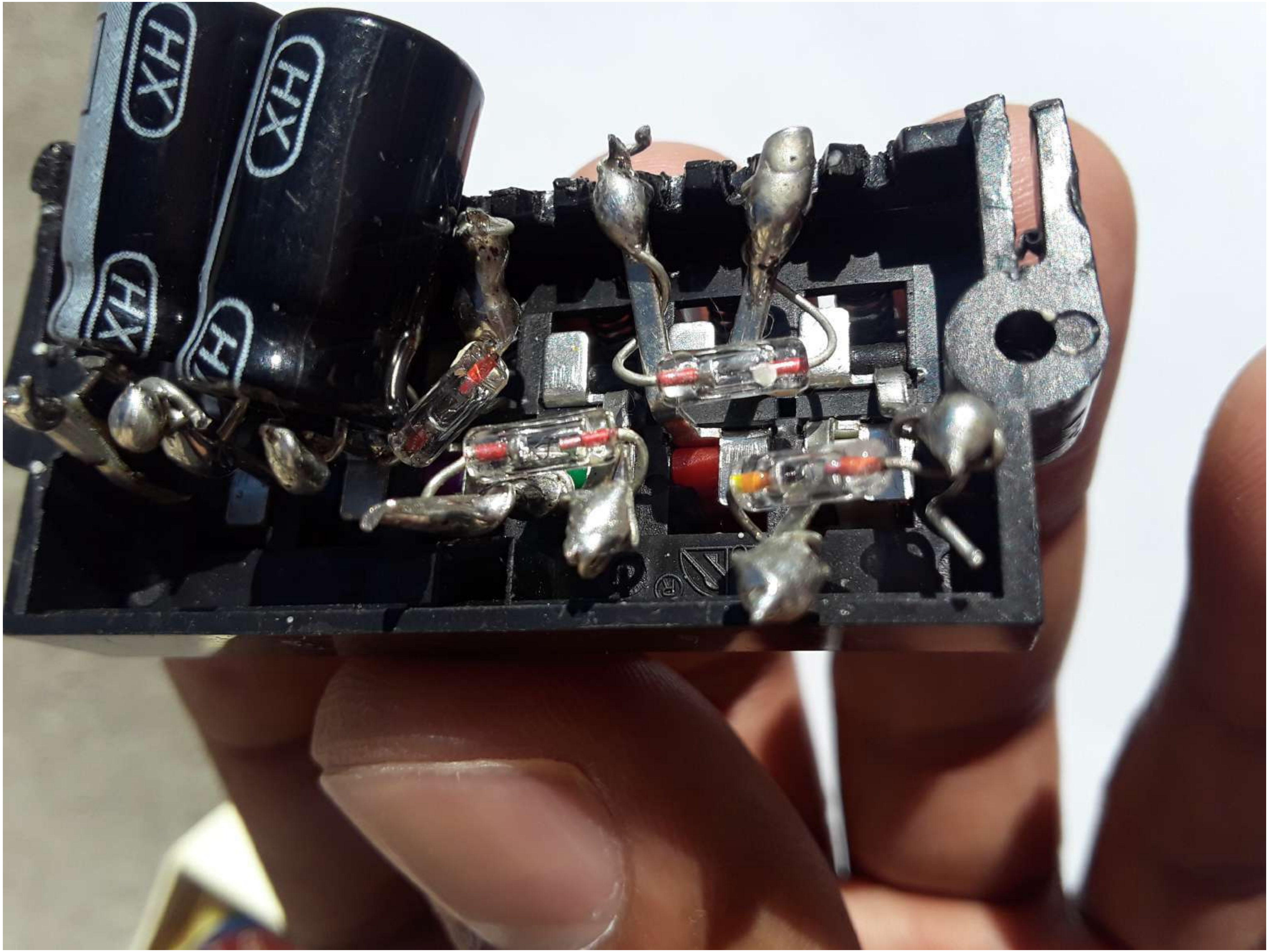


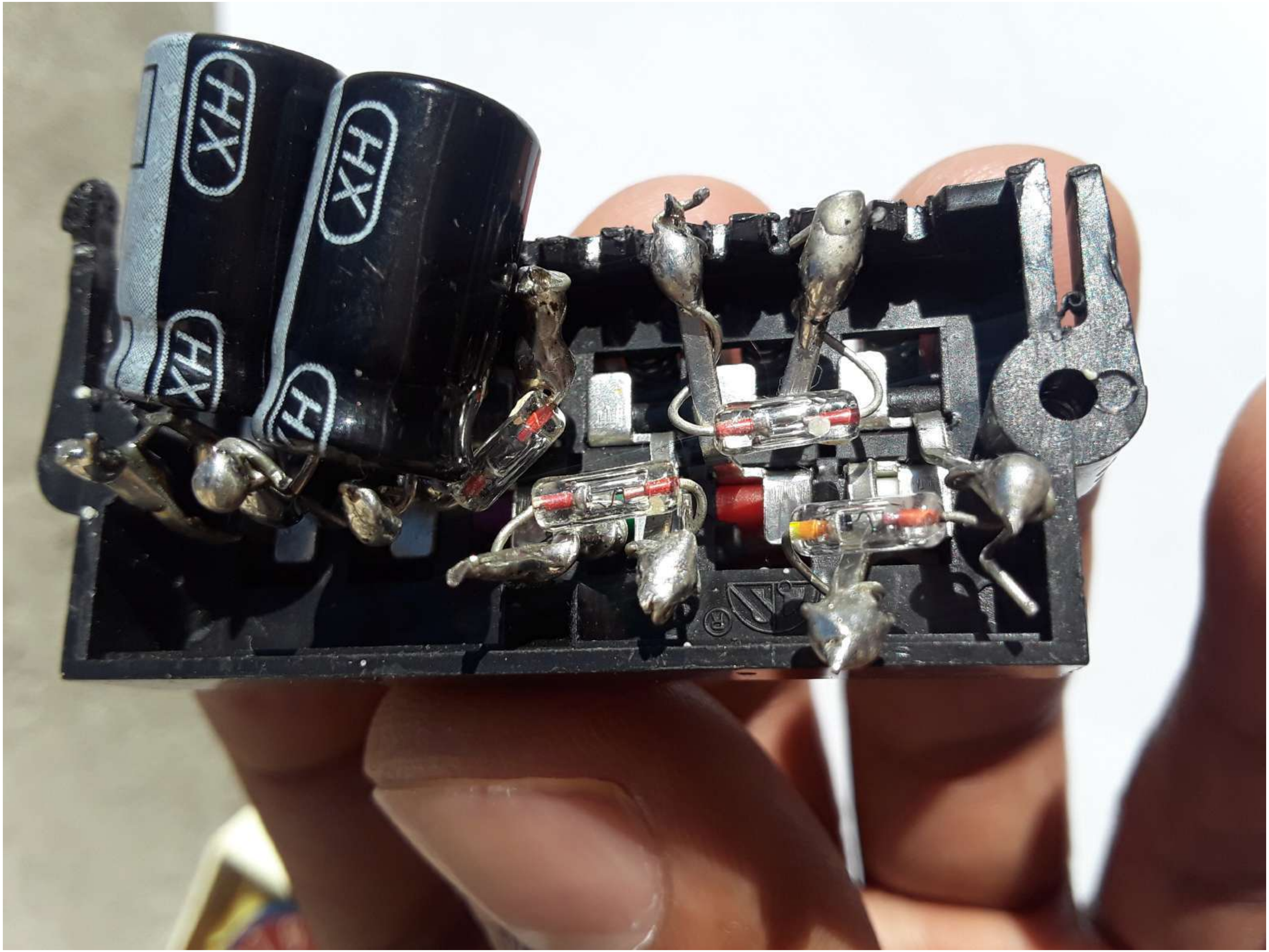

X
1
5
10
15
20
25
30
45
A
B
C
D
E
F
G
H
I
J
Y
20
25
30
35
40

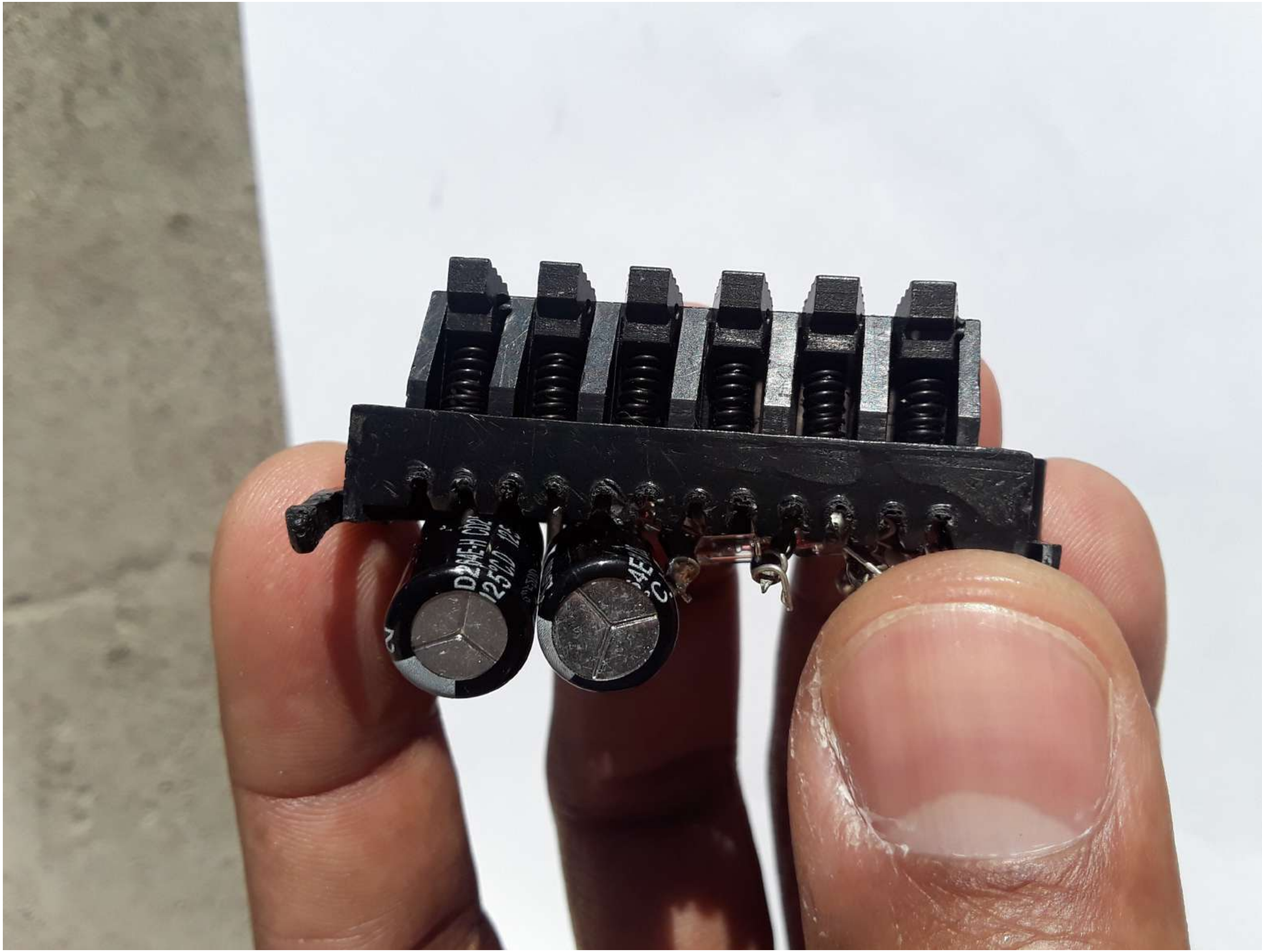

0302PB10

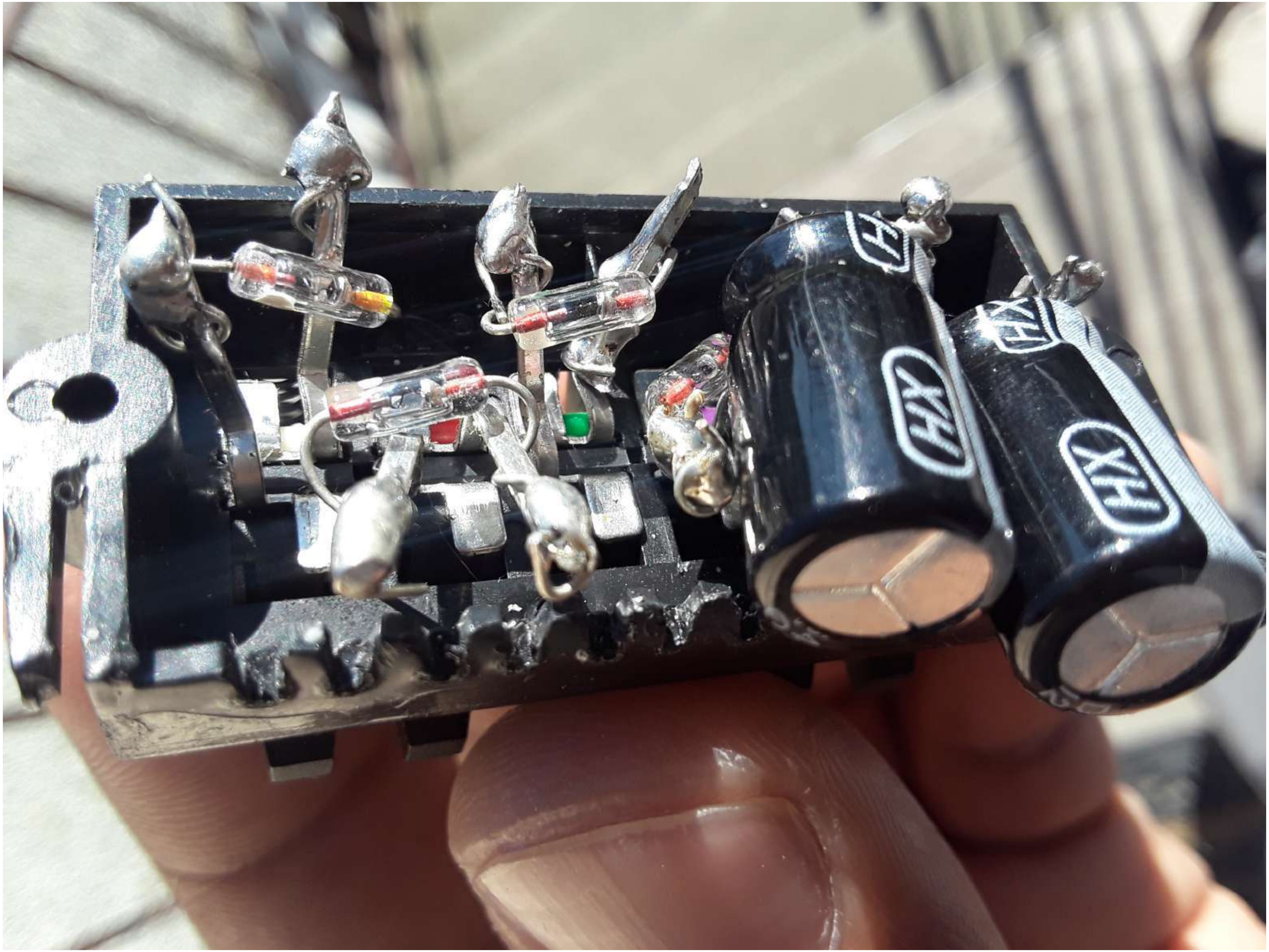


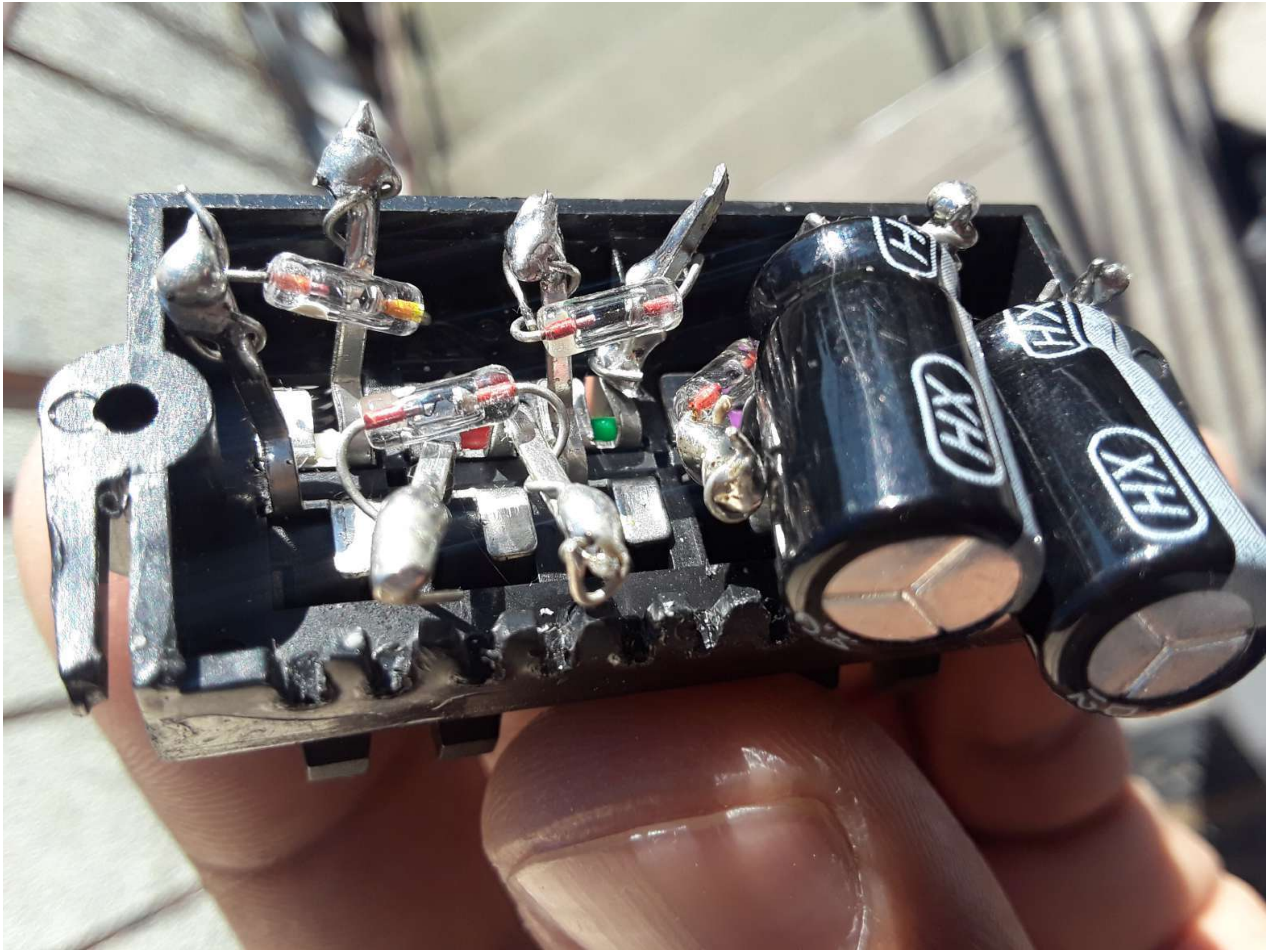
X
1
5
10
15
20
25
30
40
45
A
B
C
D
E
F
G
H
I
Y
10
15
20
25
30
35
40

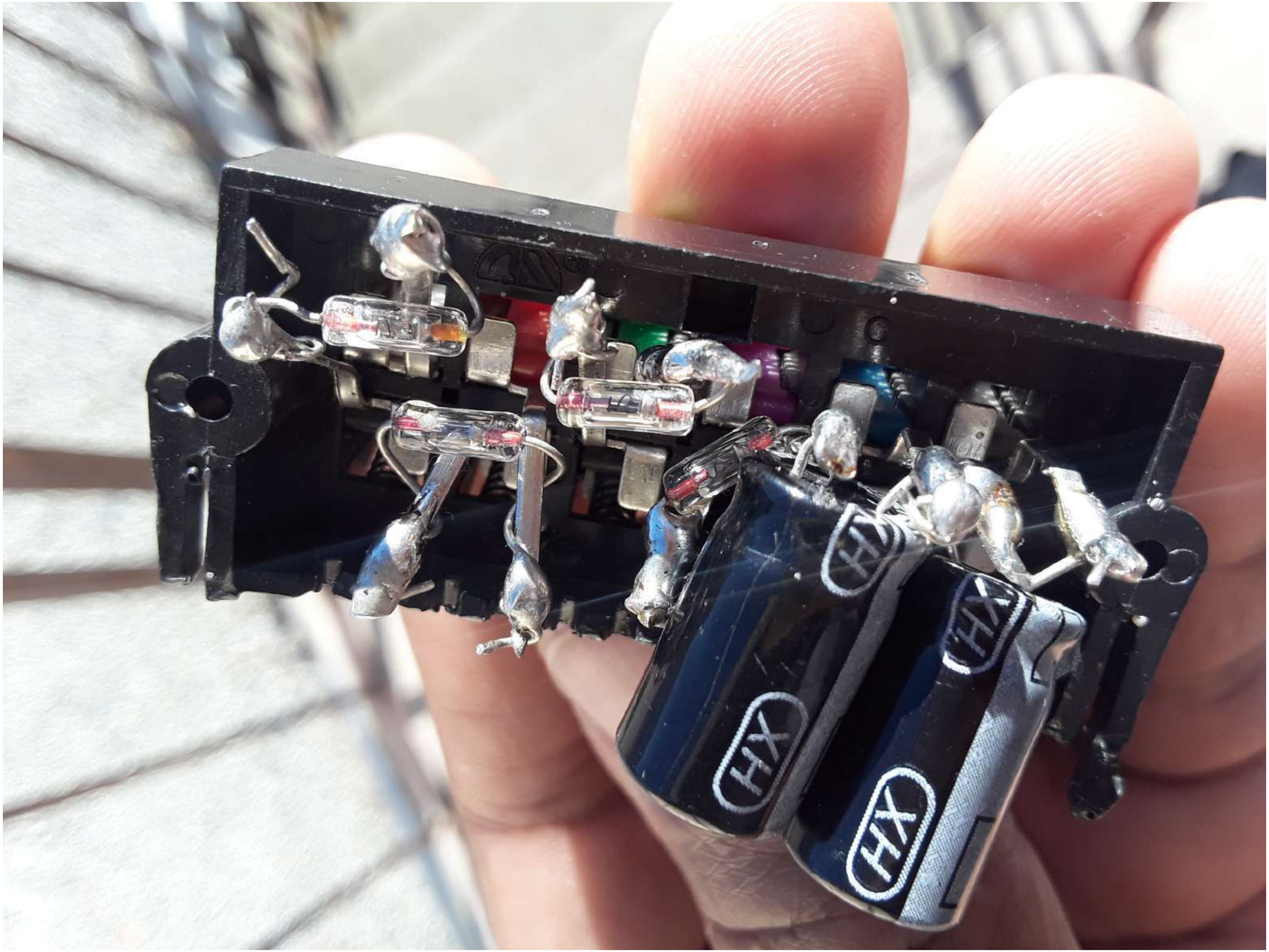


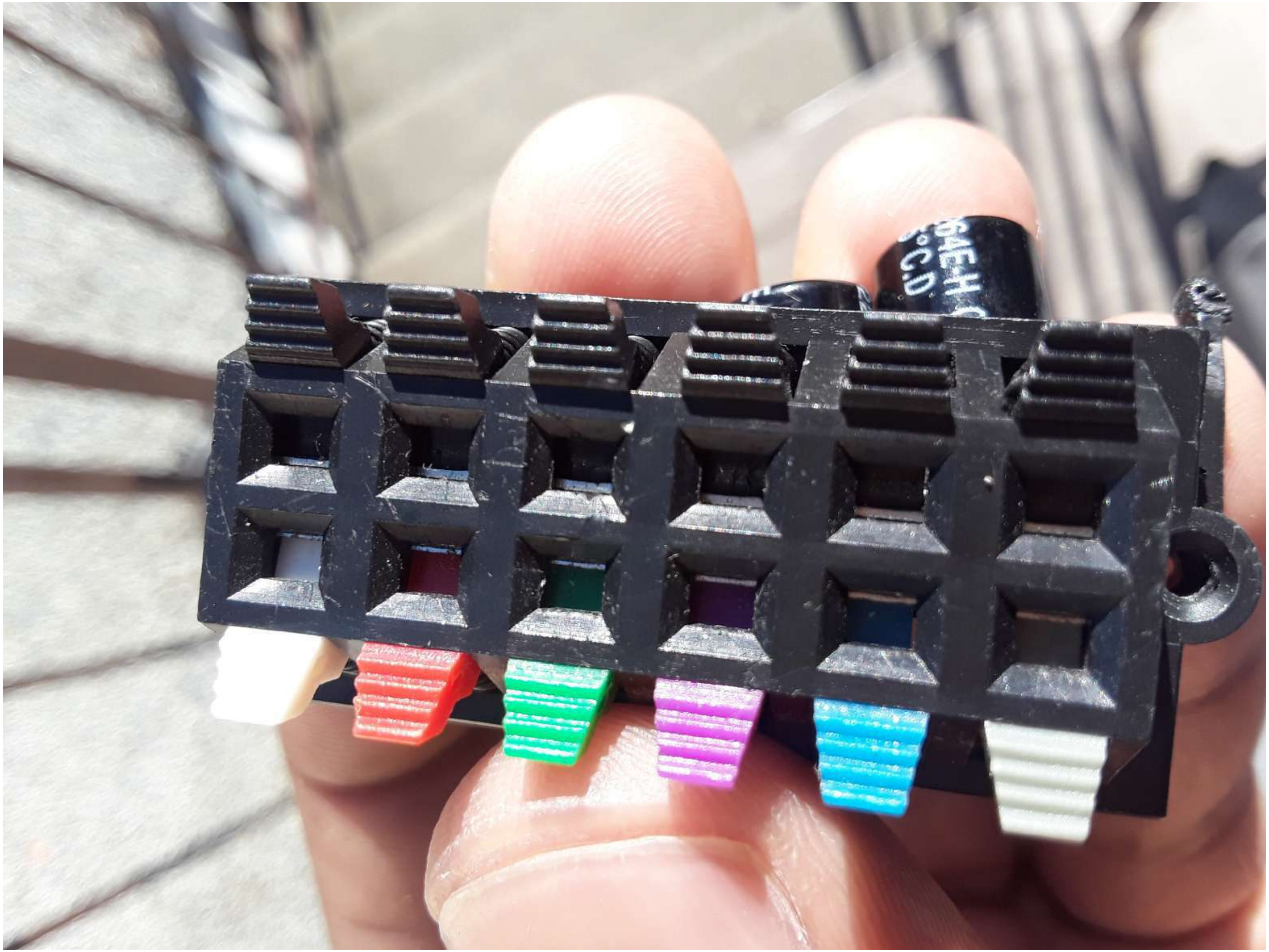

XH
XH
XH
XH

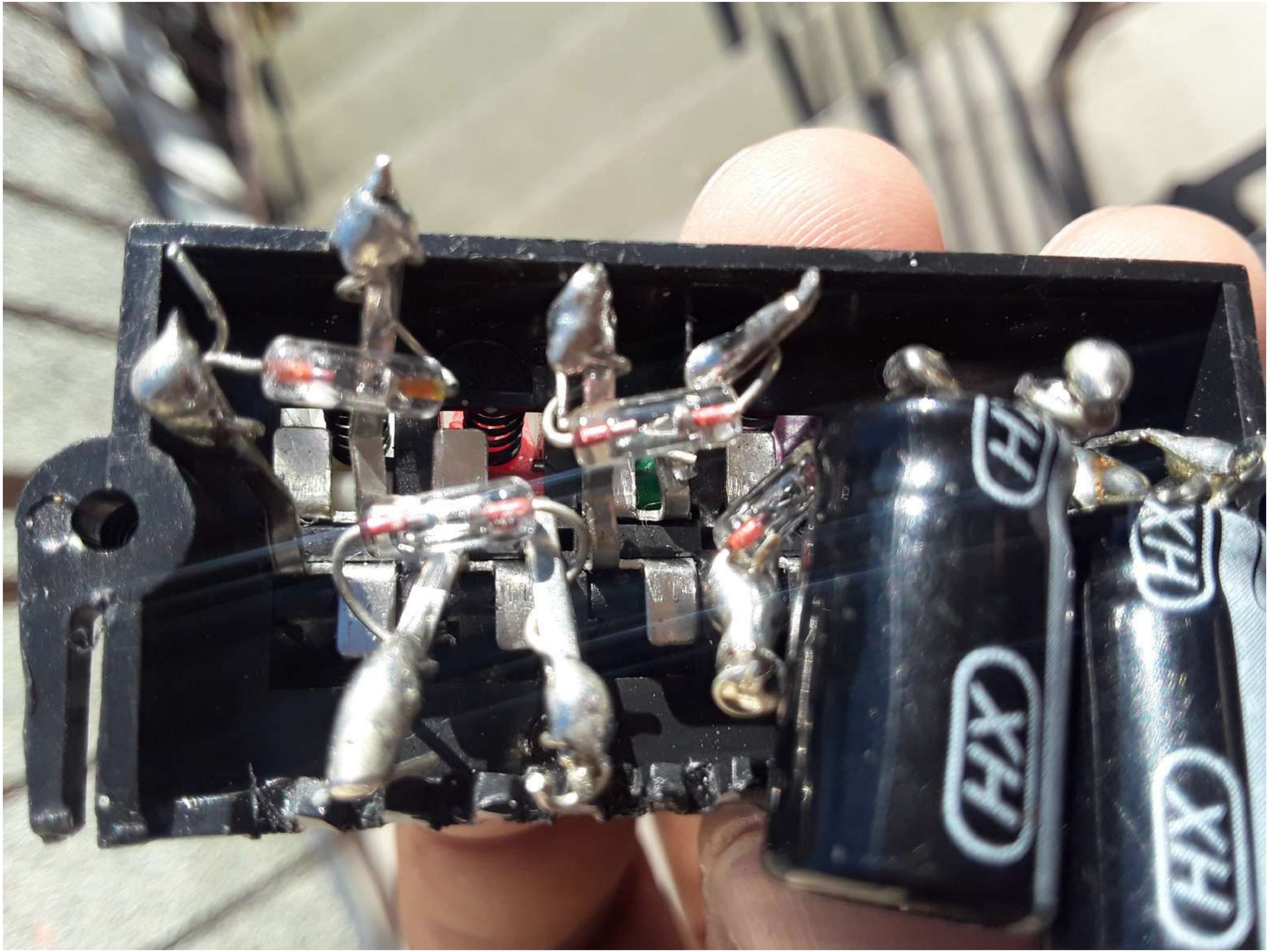


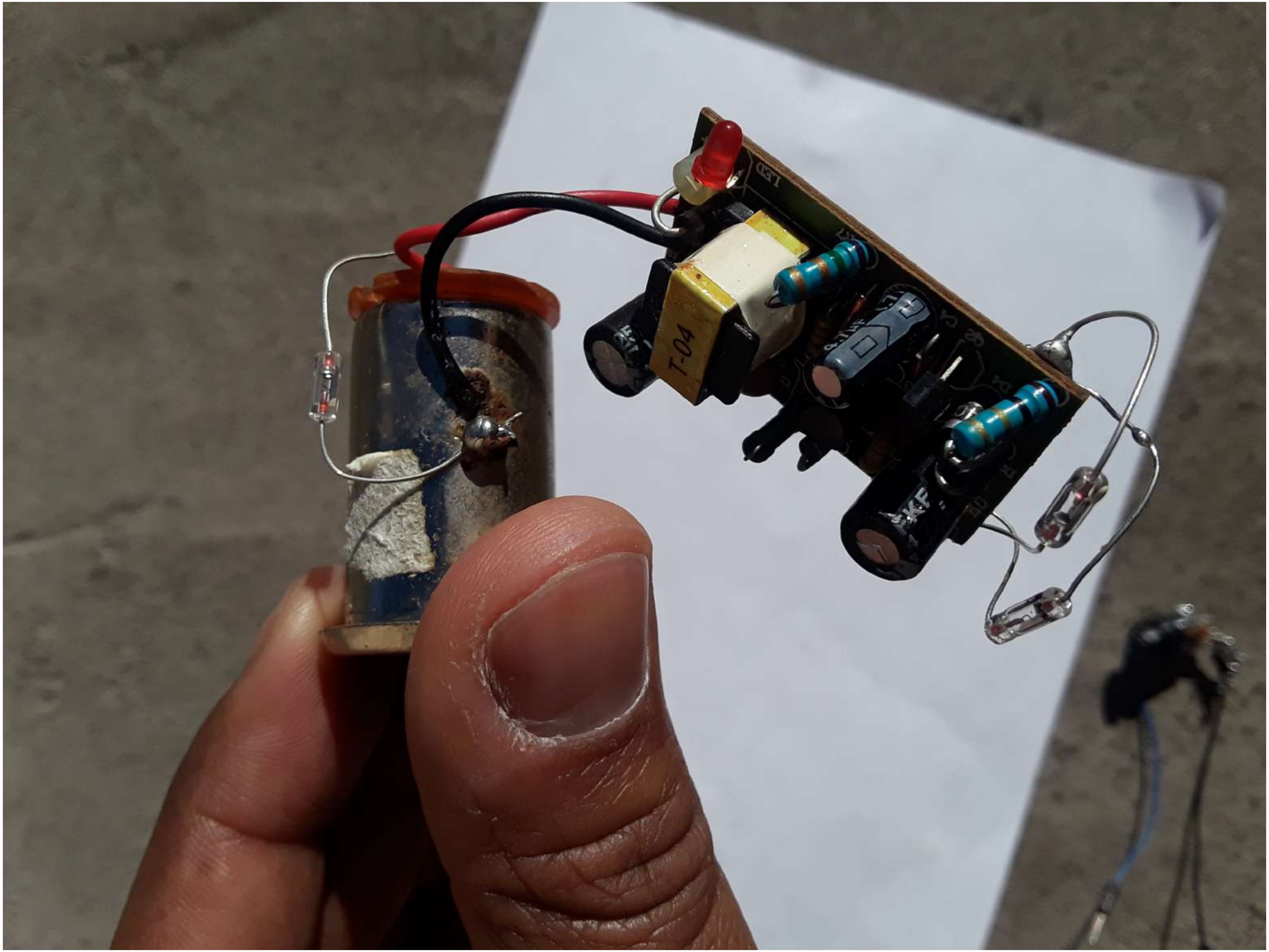

HX
HX

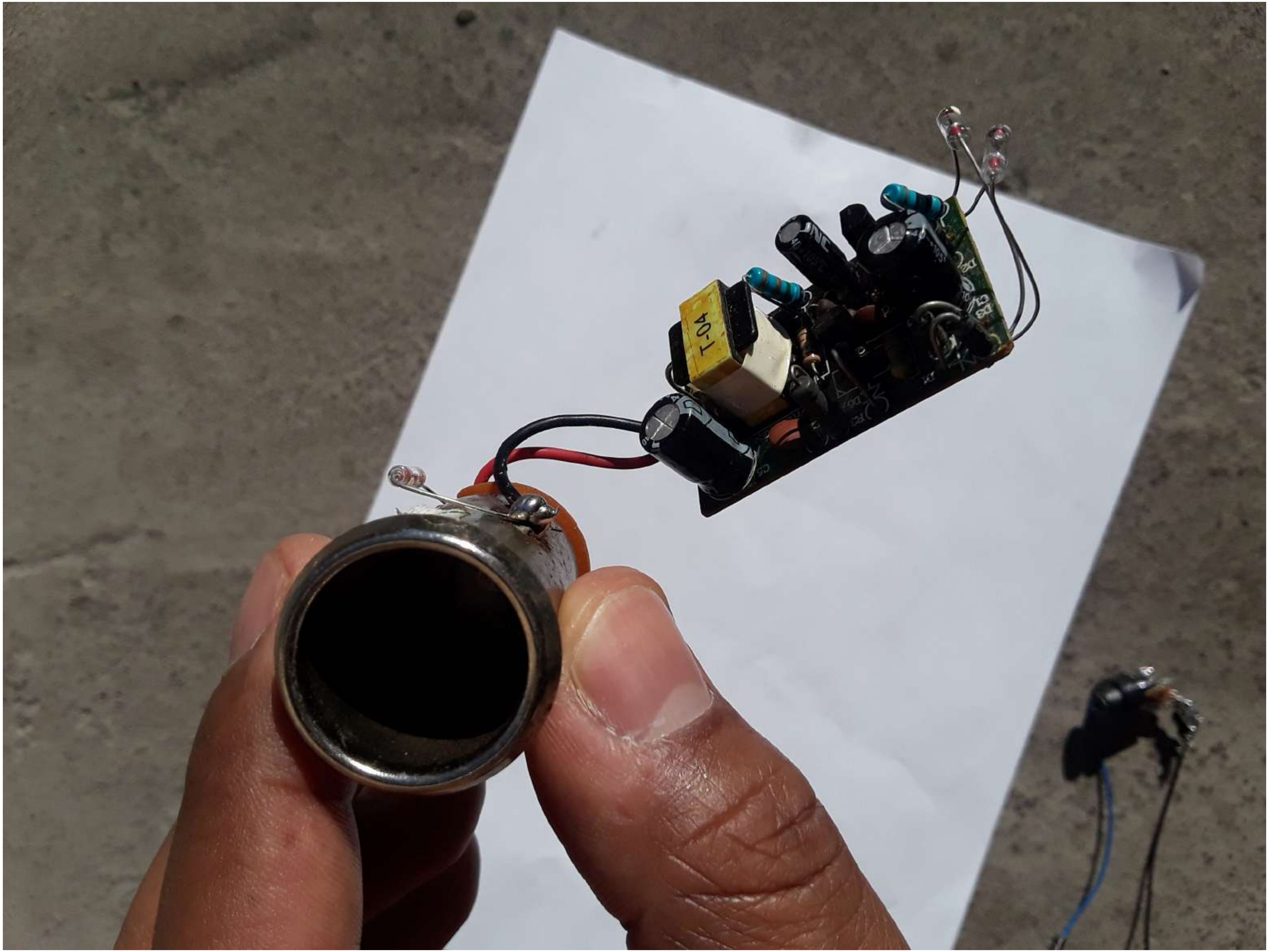

HX
HX
HX
HX

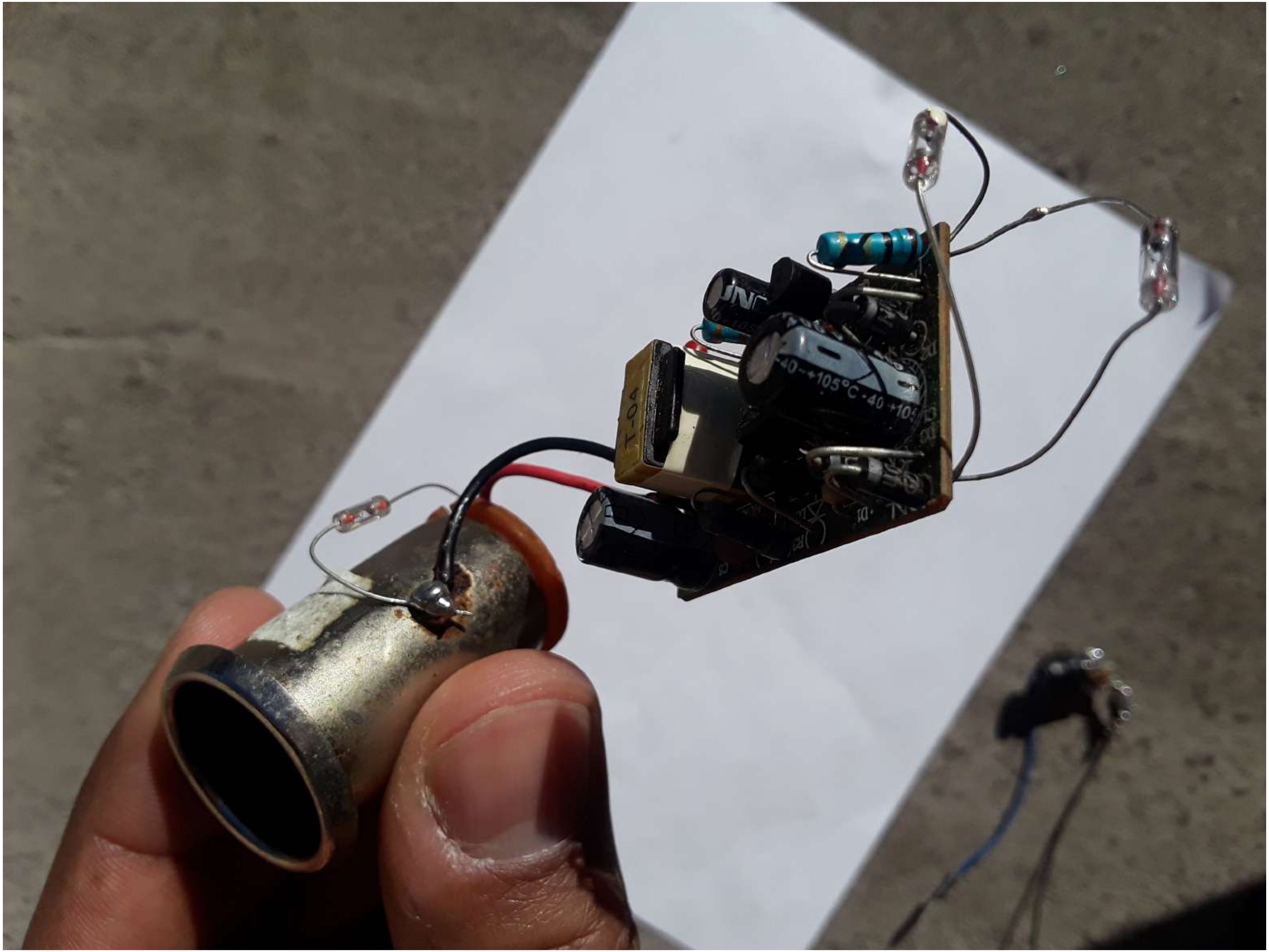

HX
HX
HX
HX

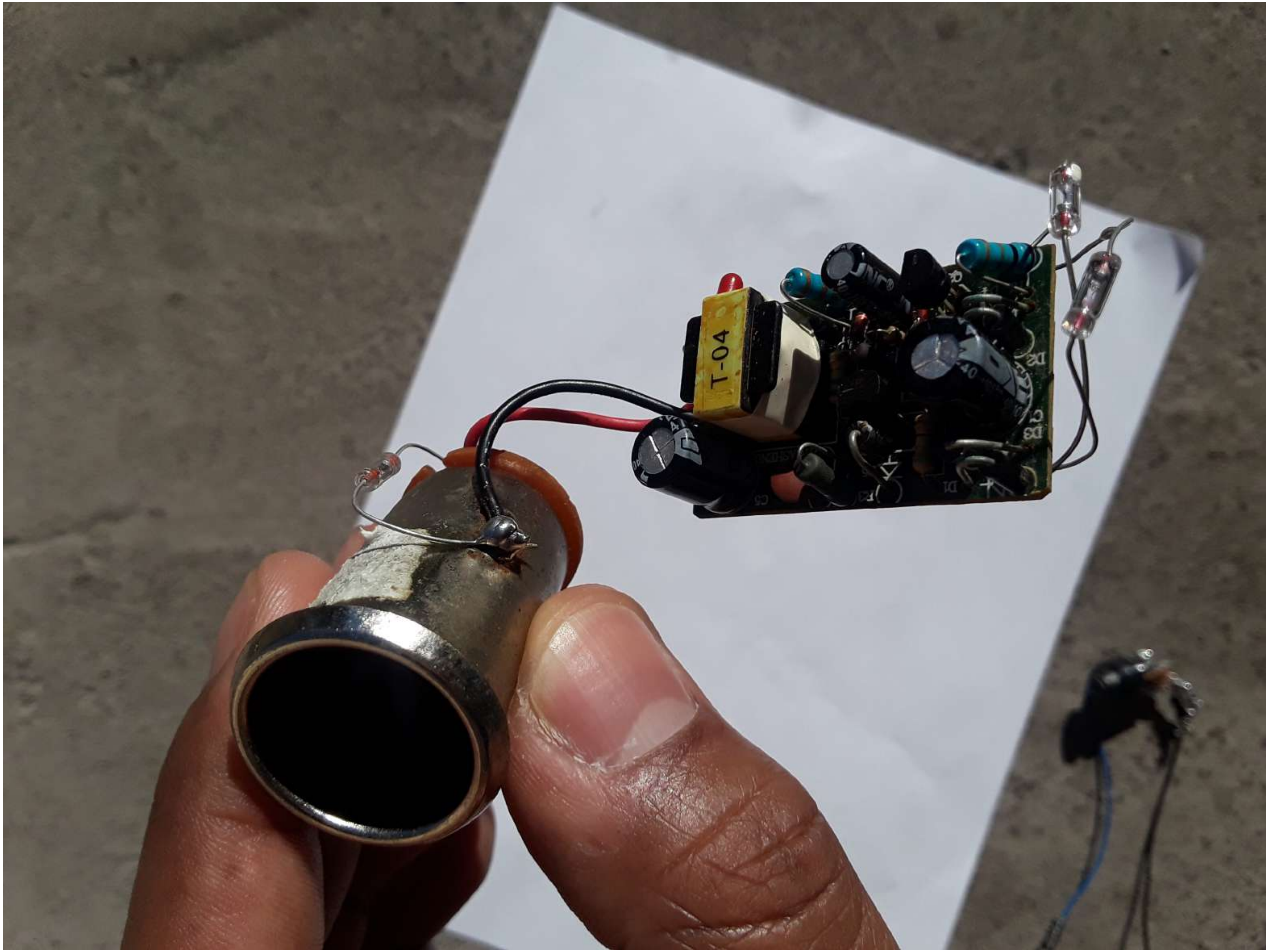


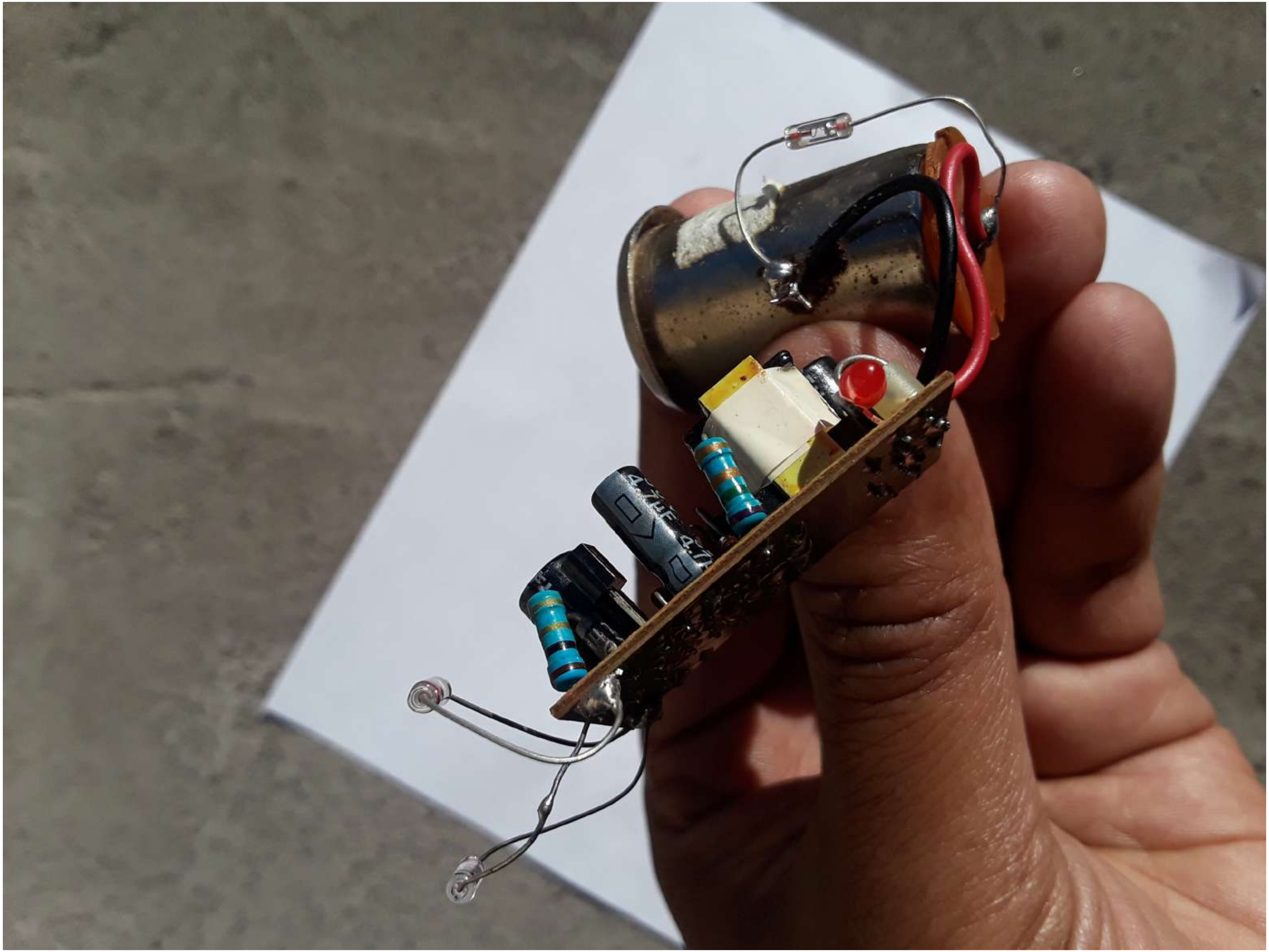

HX
HX
HX
HX

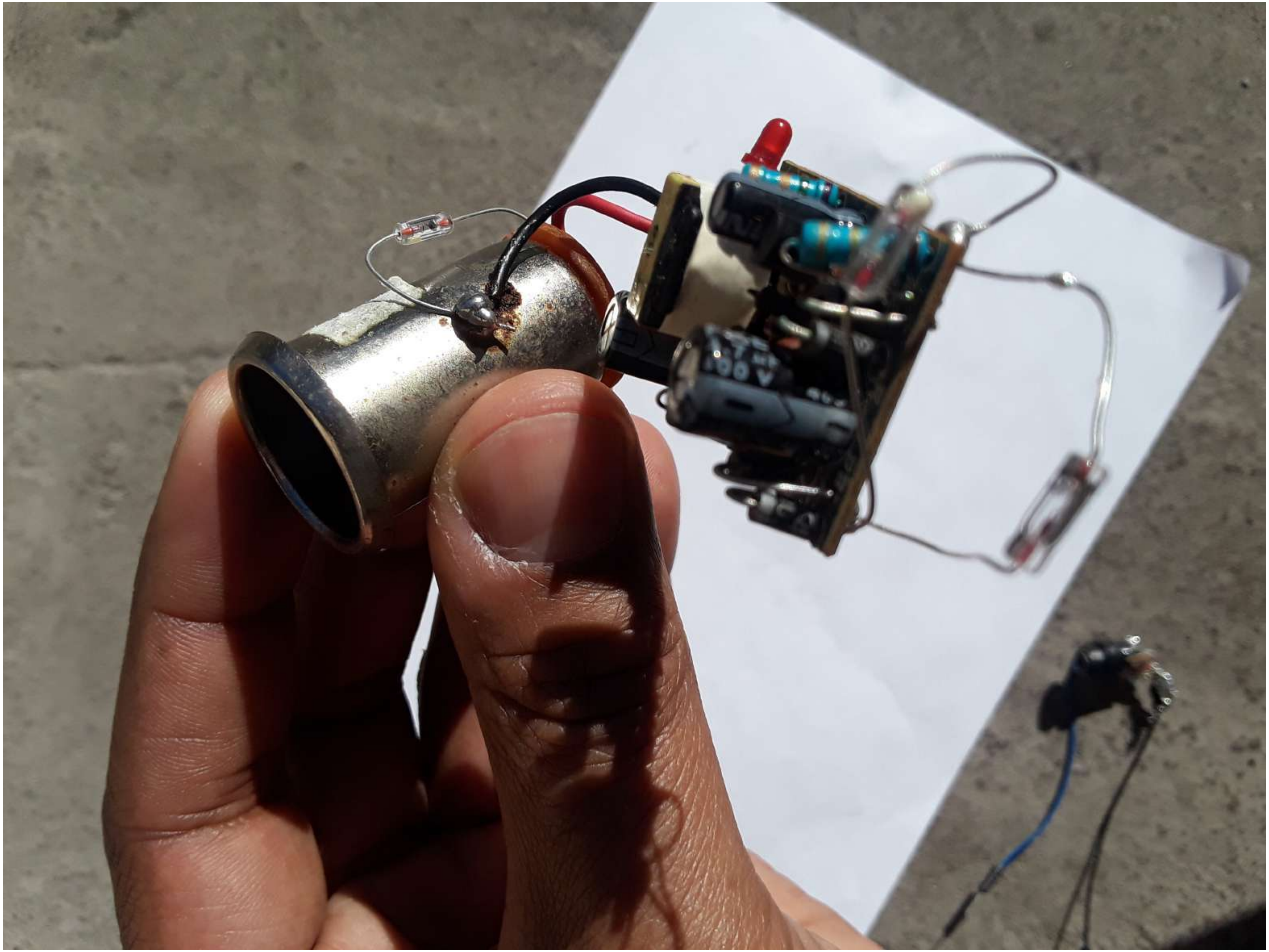

T-04

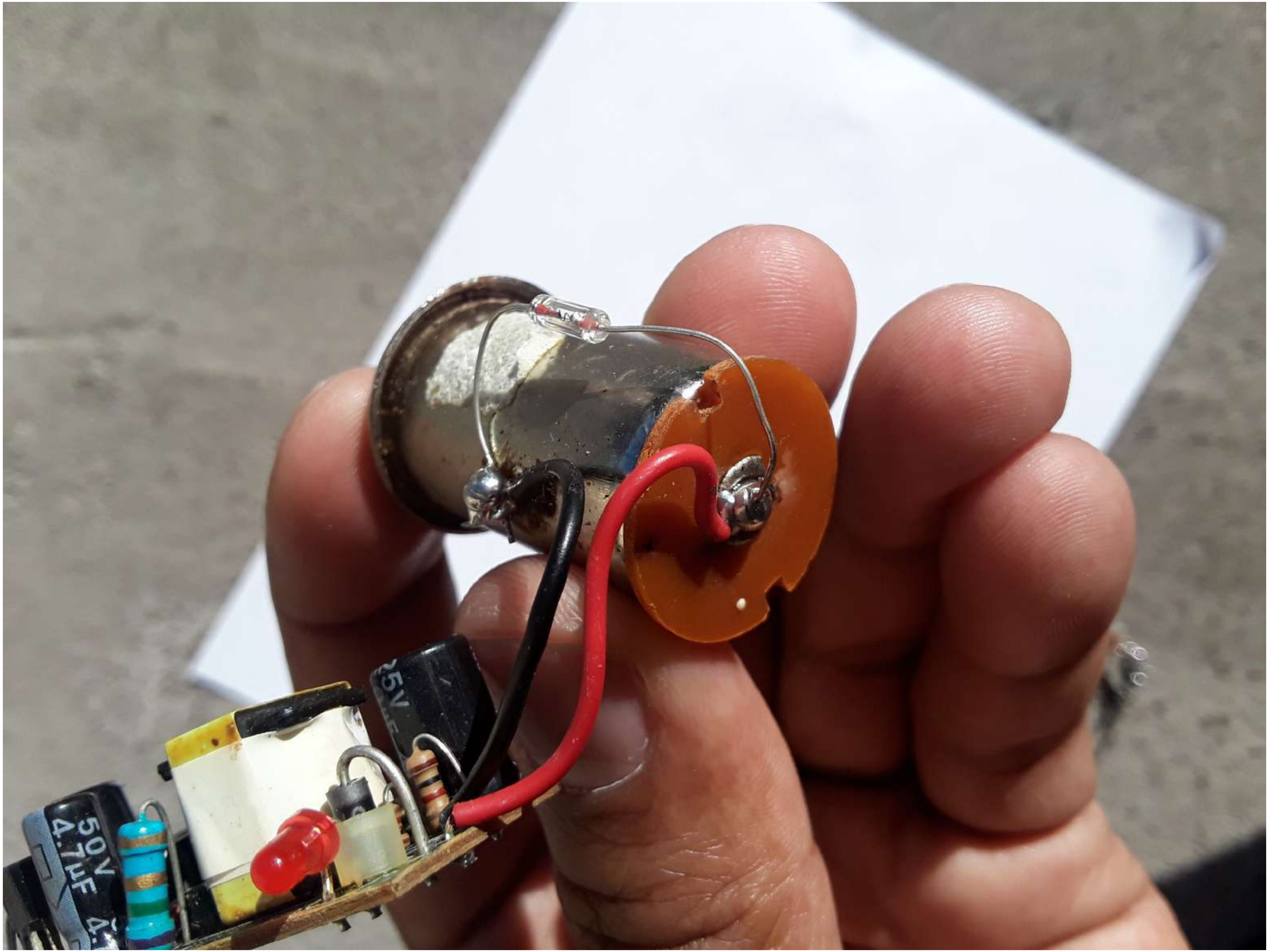

T-04

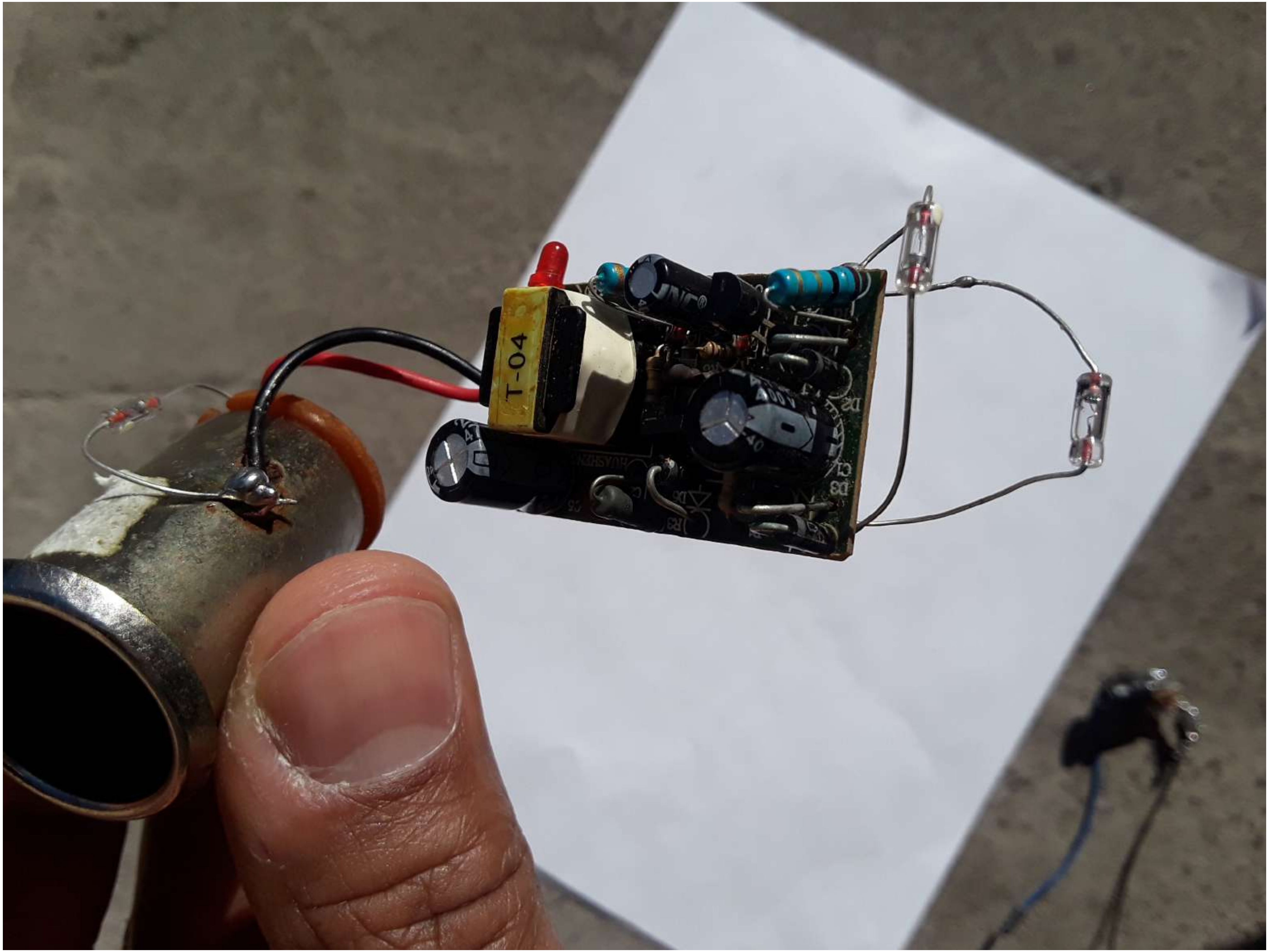

T-04
-40~+105°C

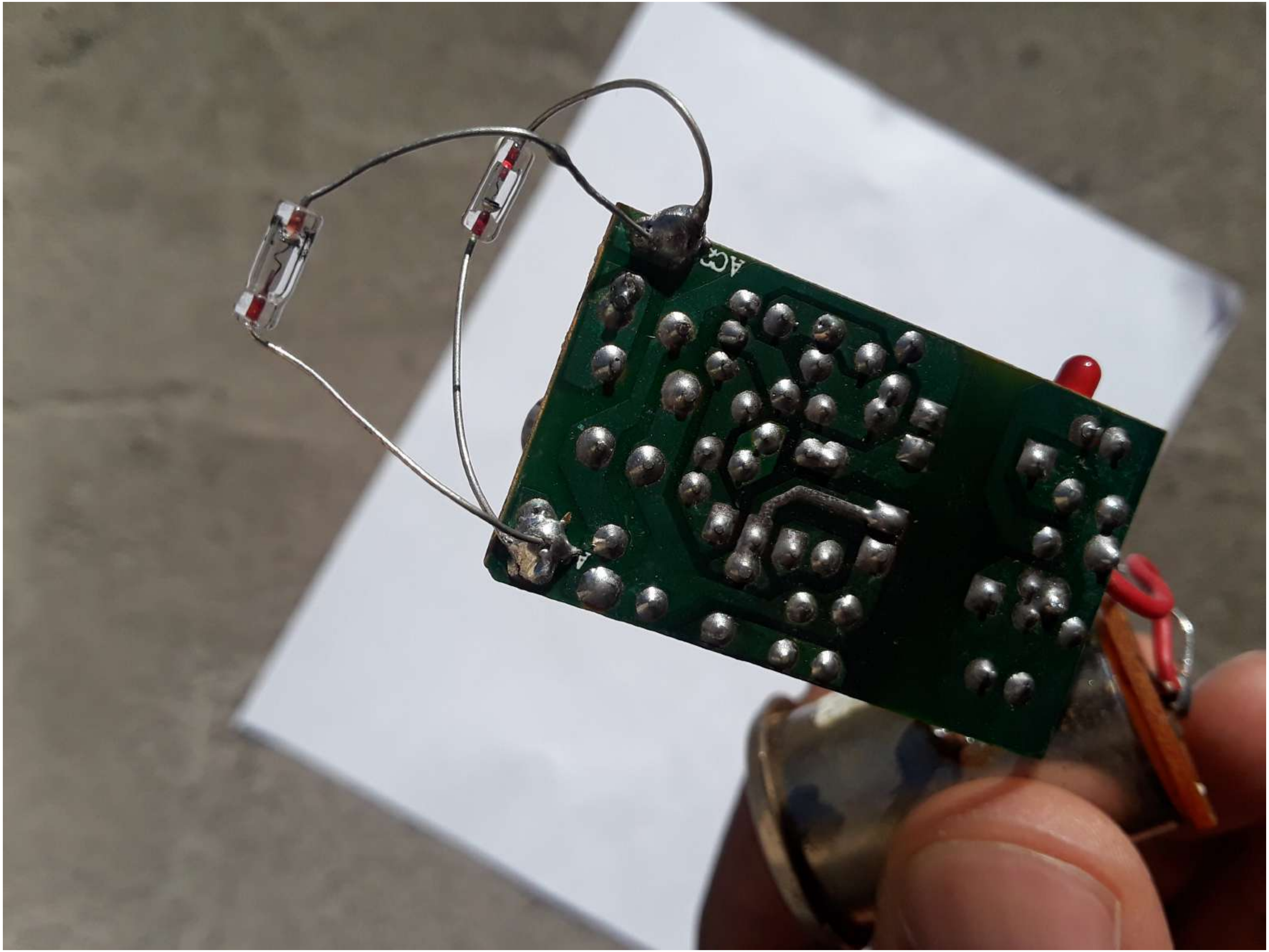

T-04

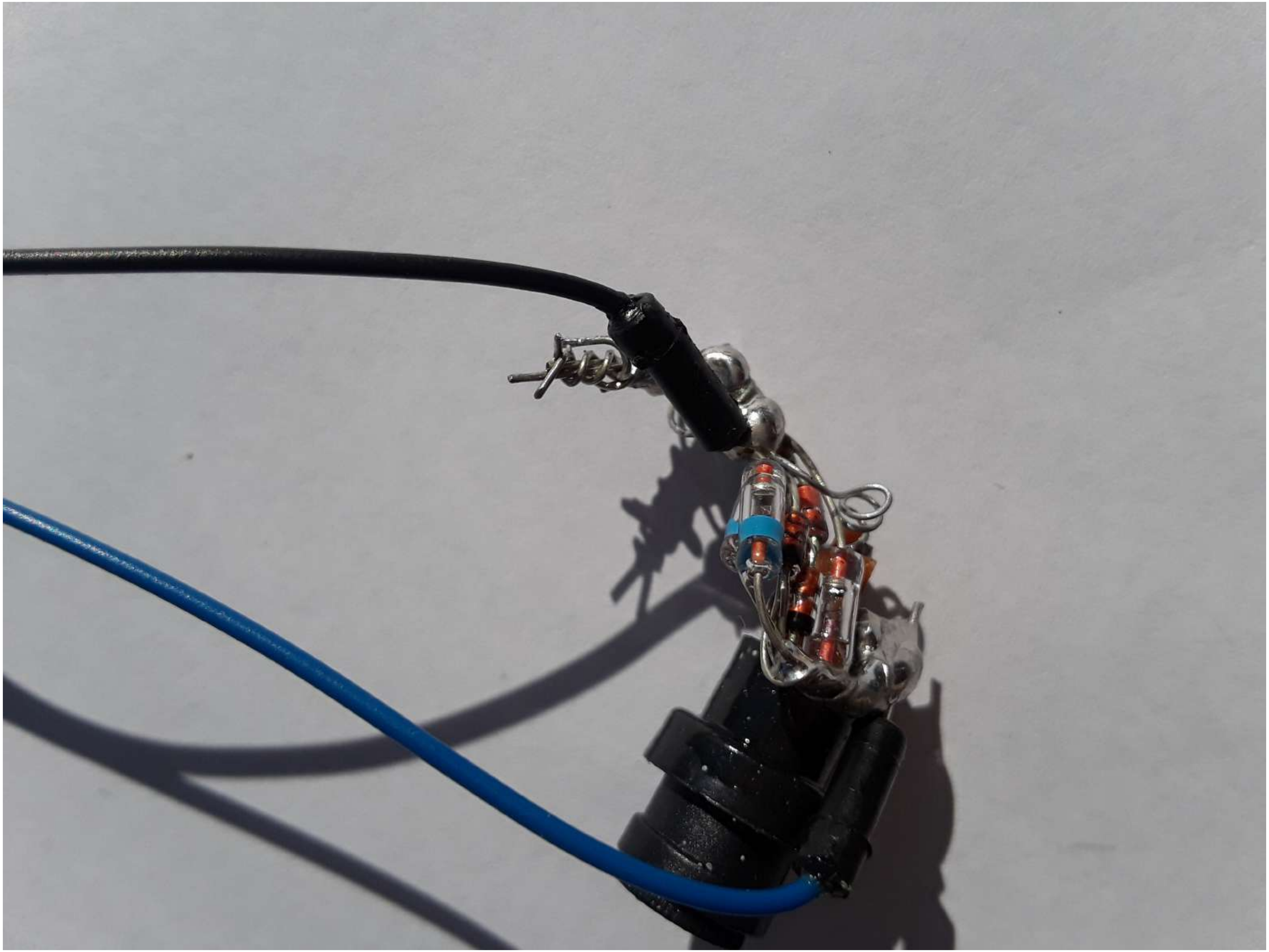


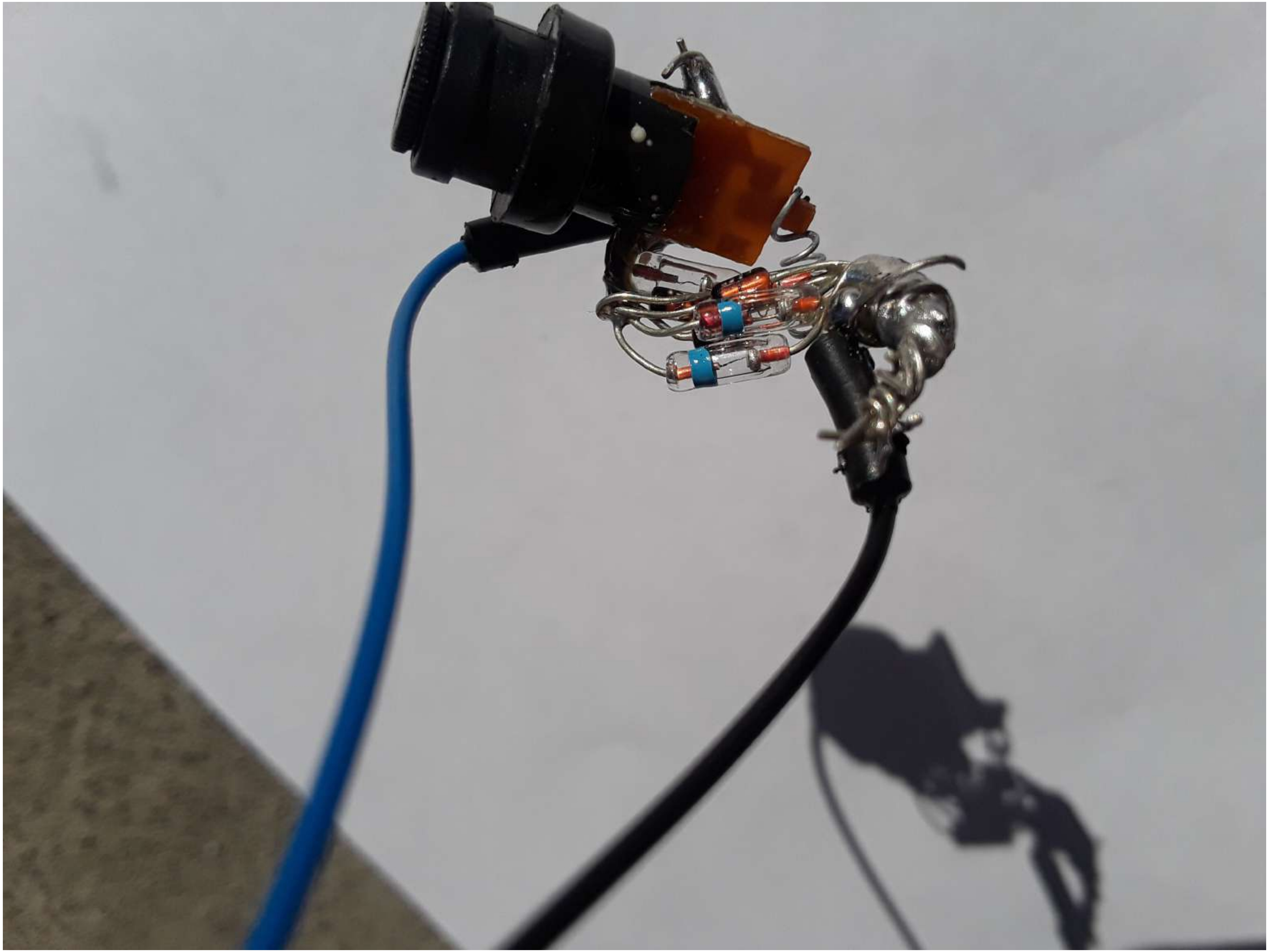


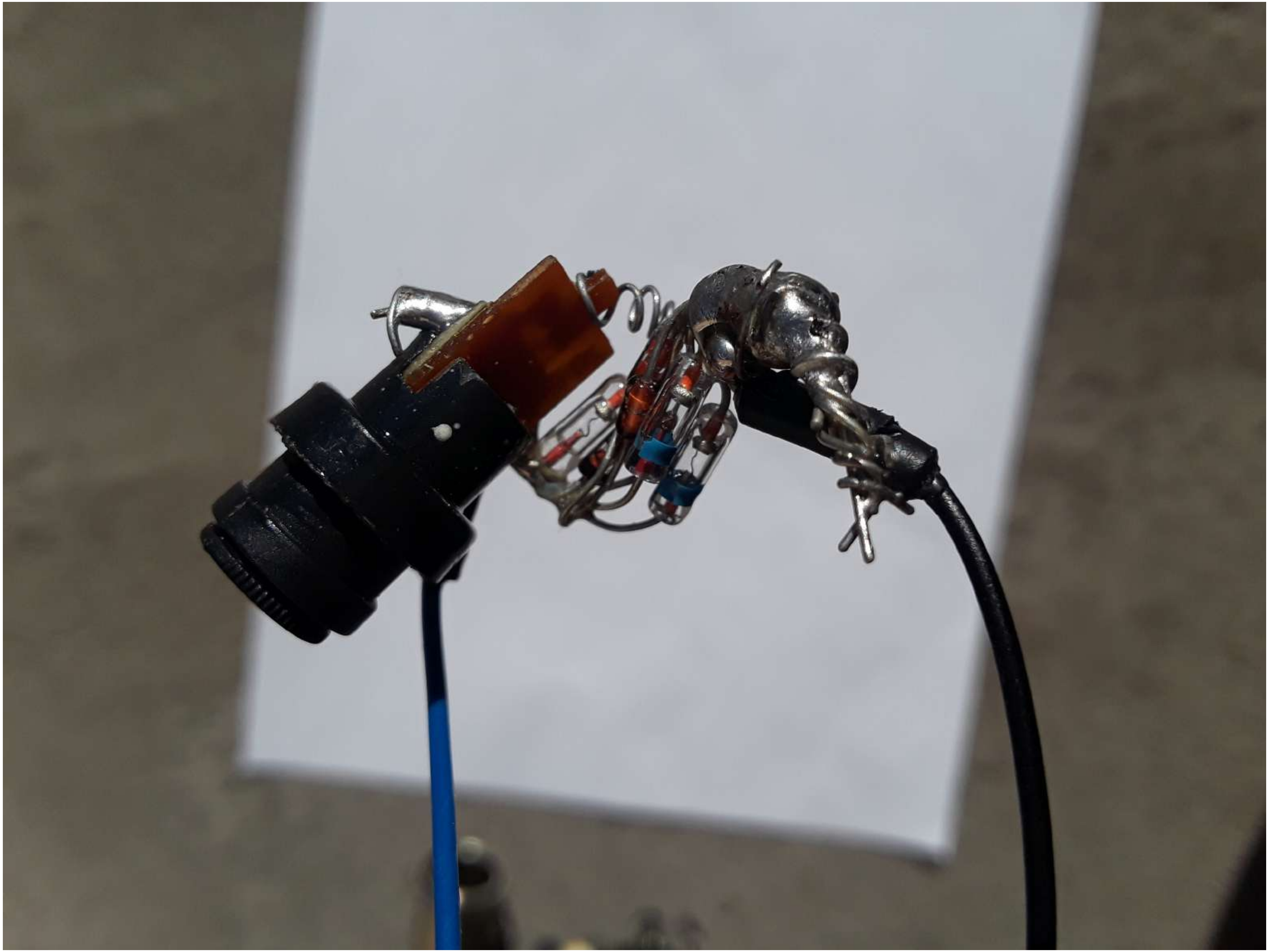

50V
4.7µF
25V

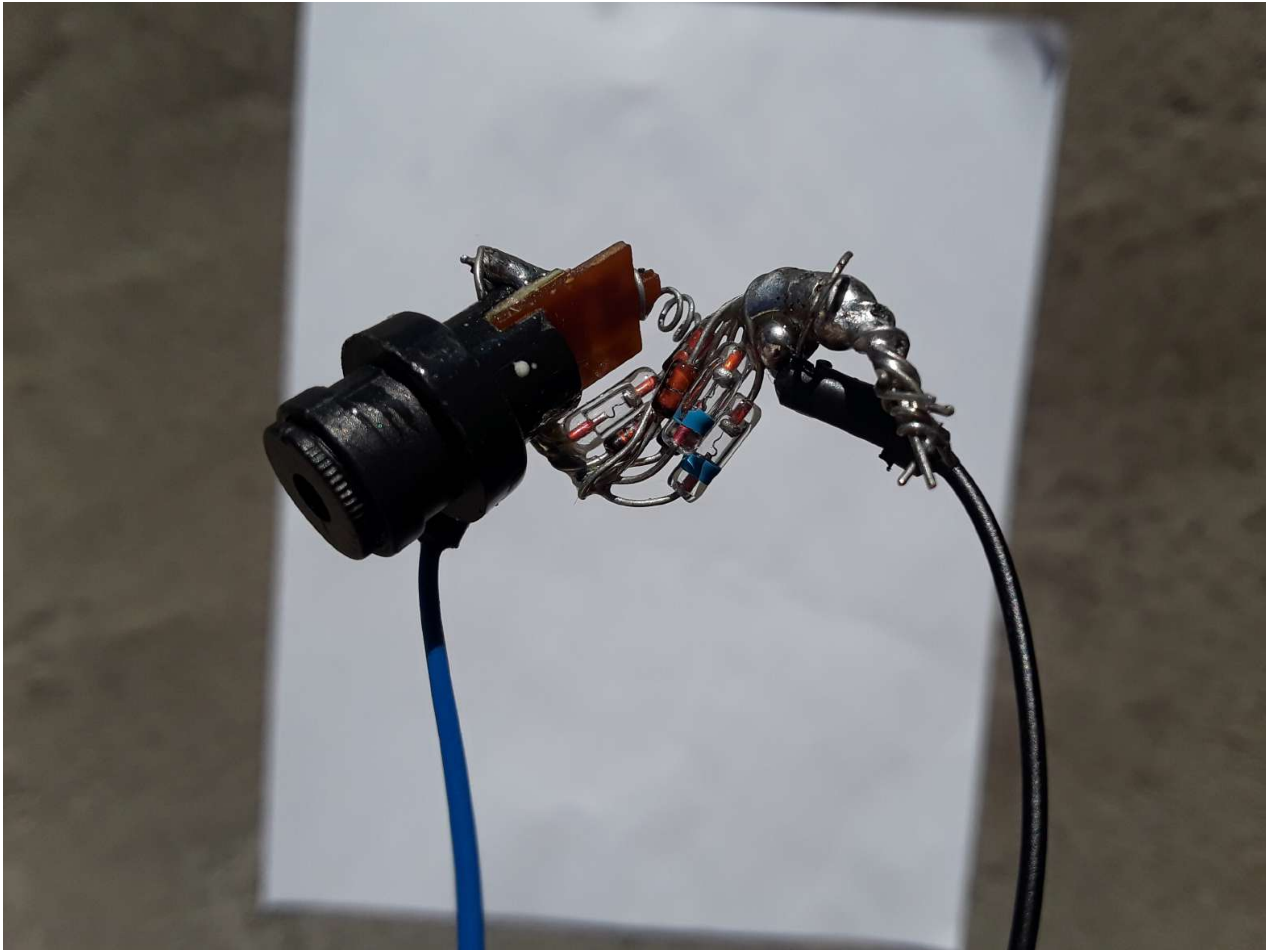

T-04

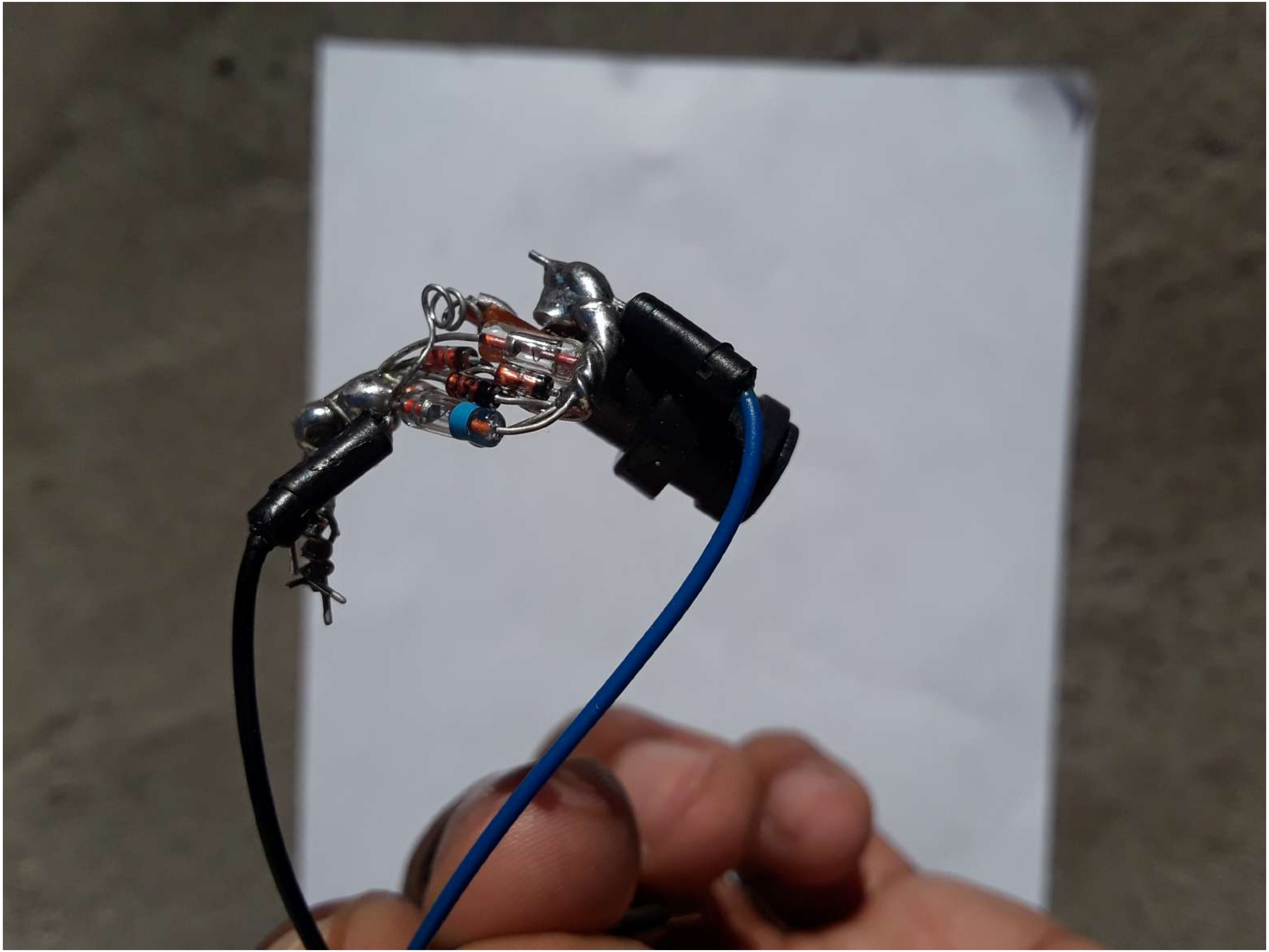


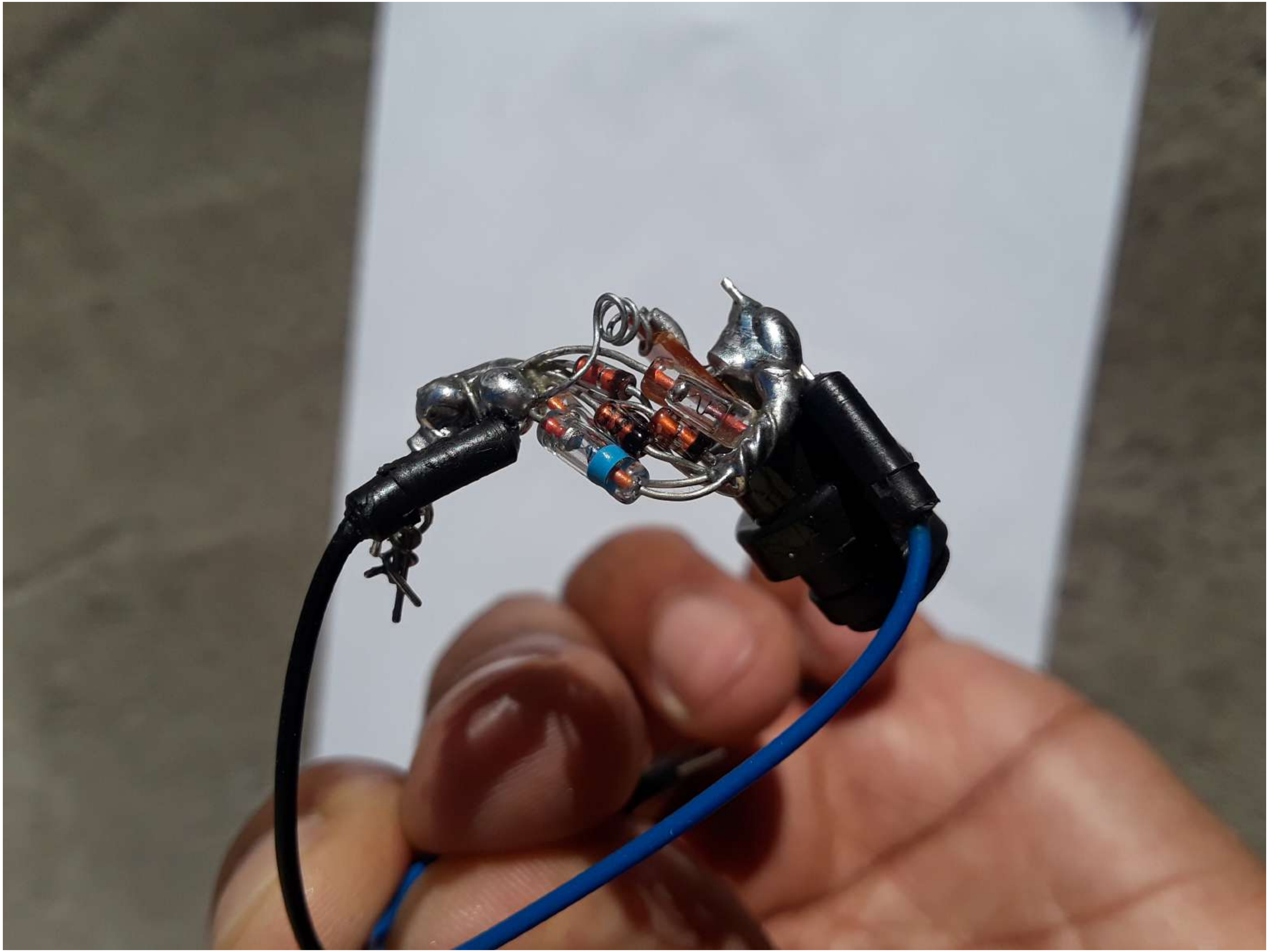


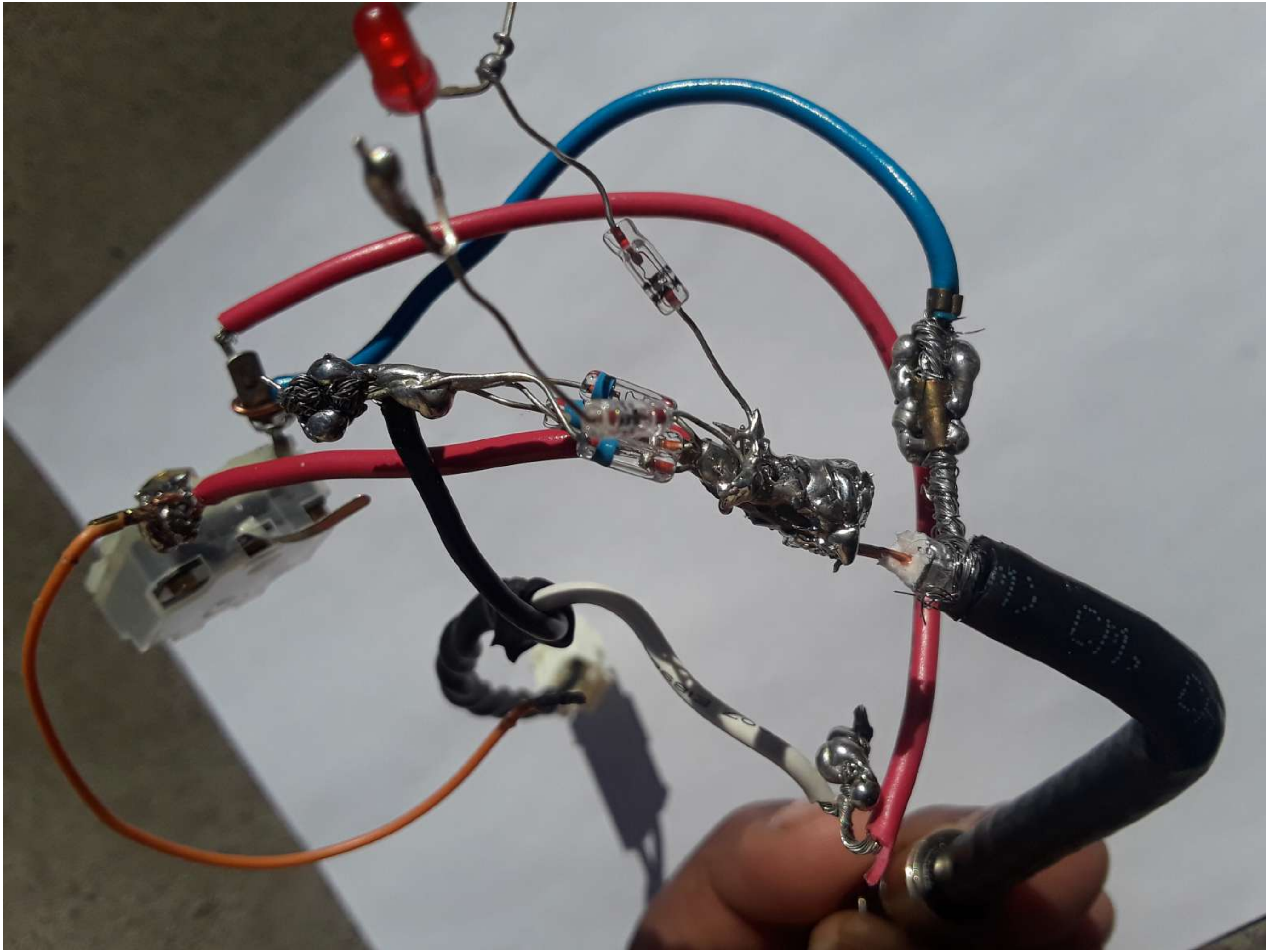


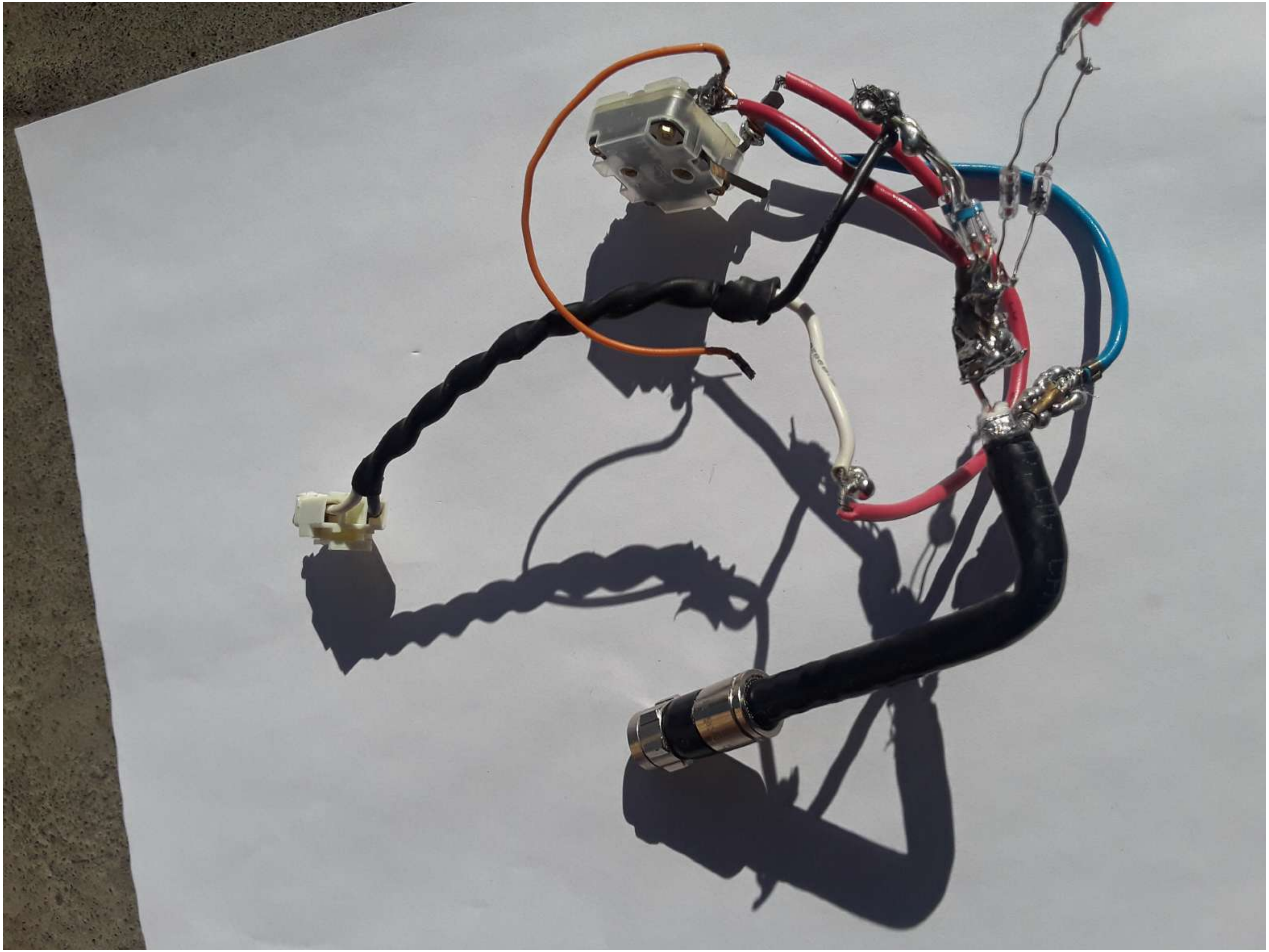


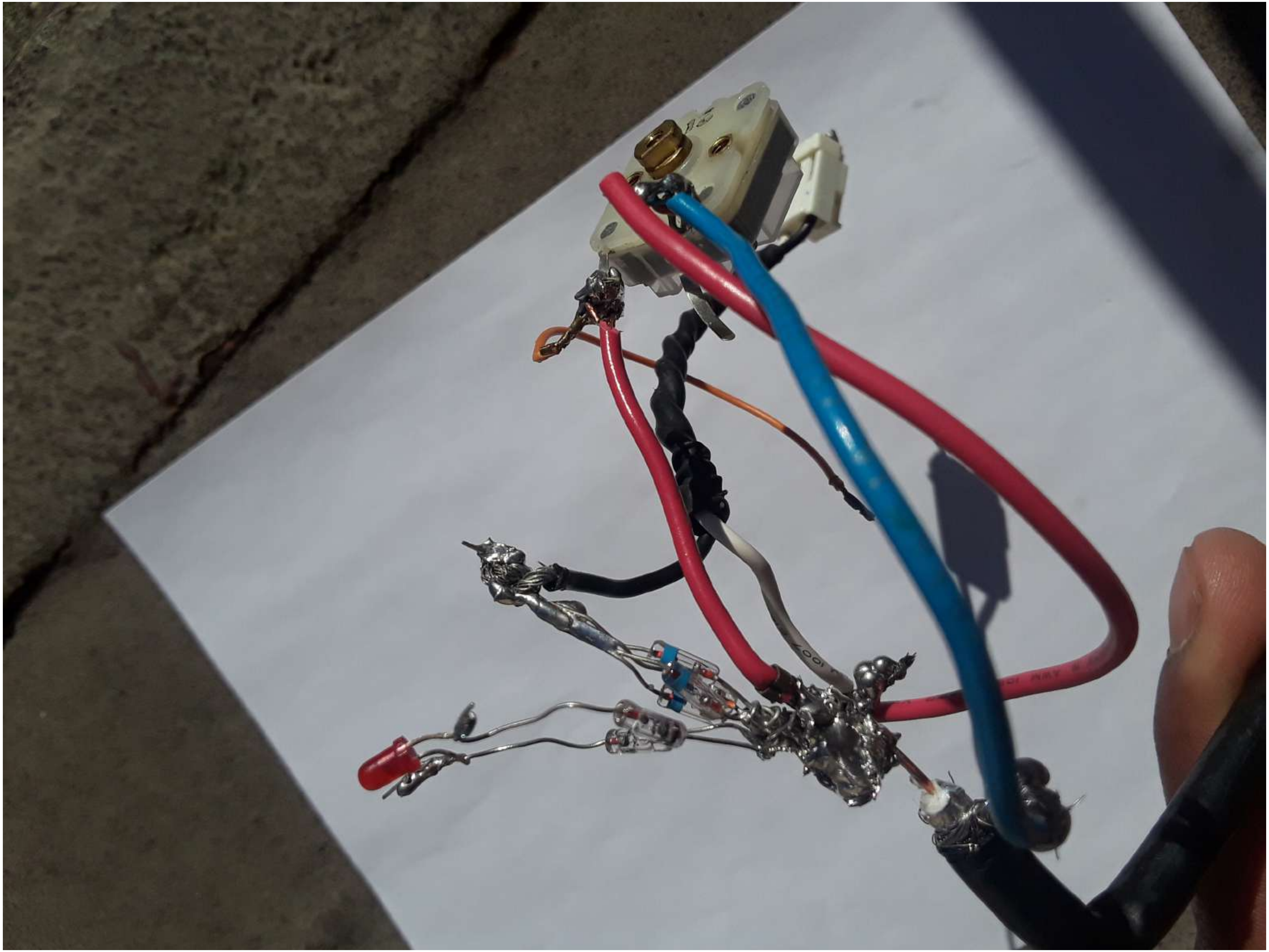


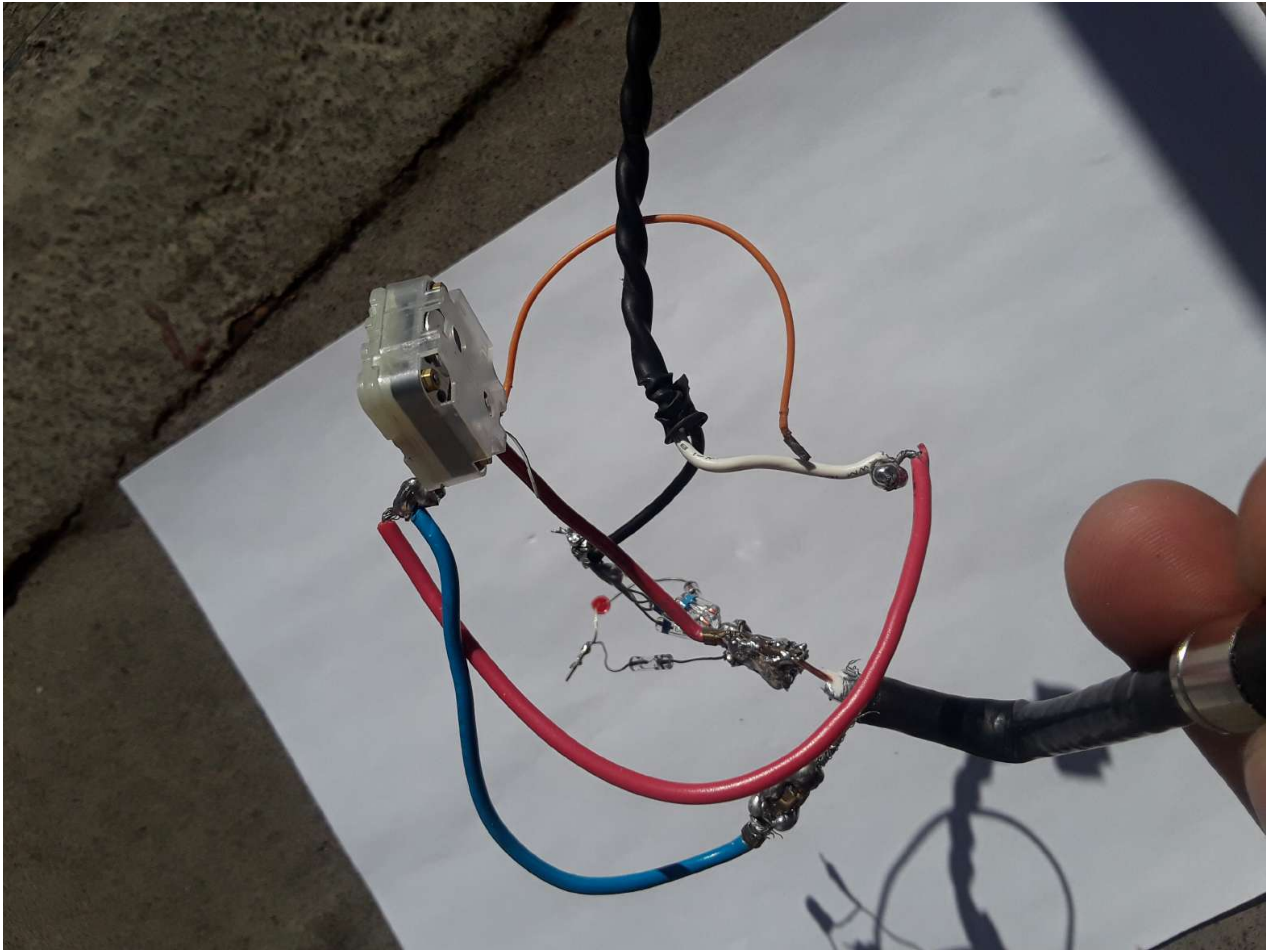


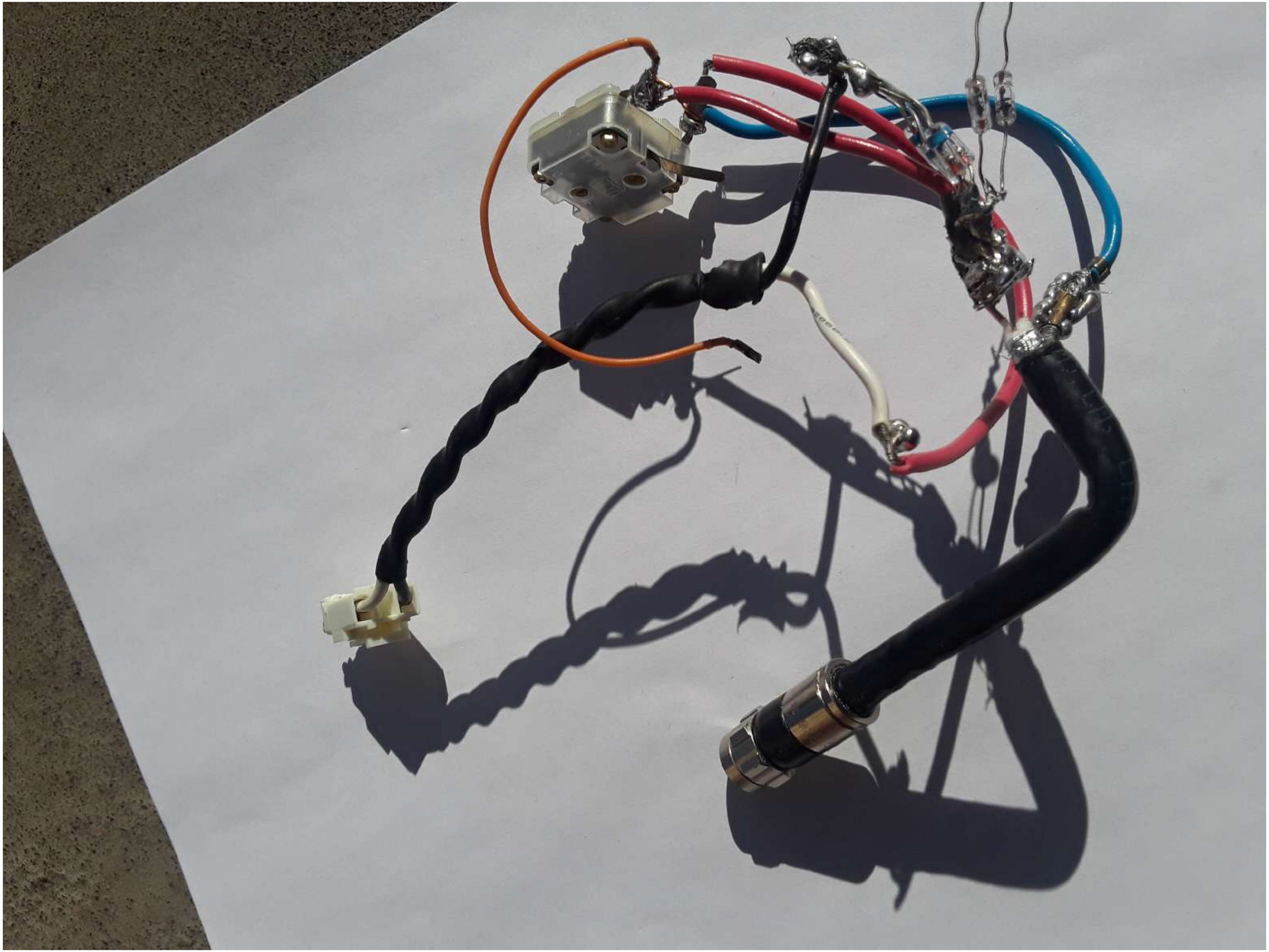


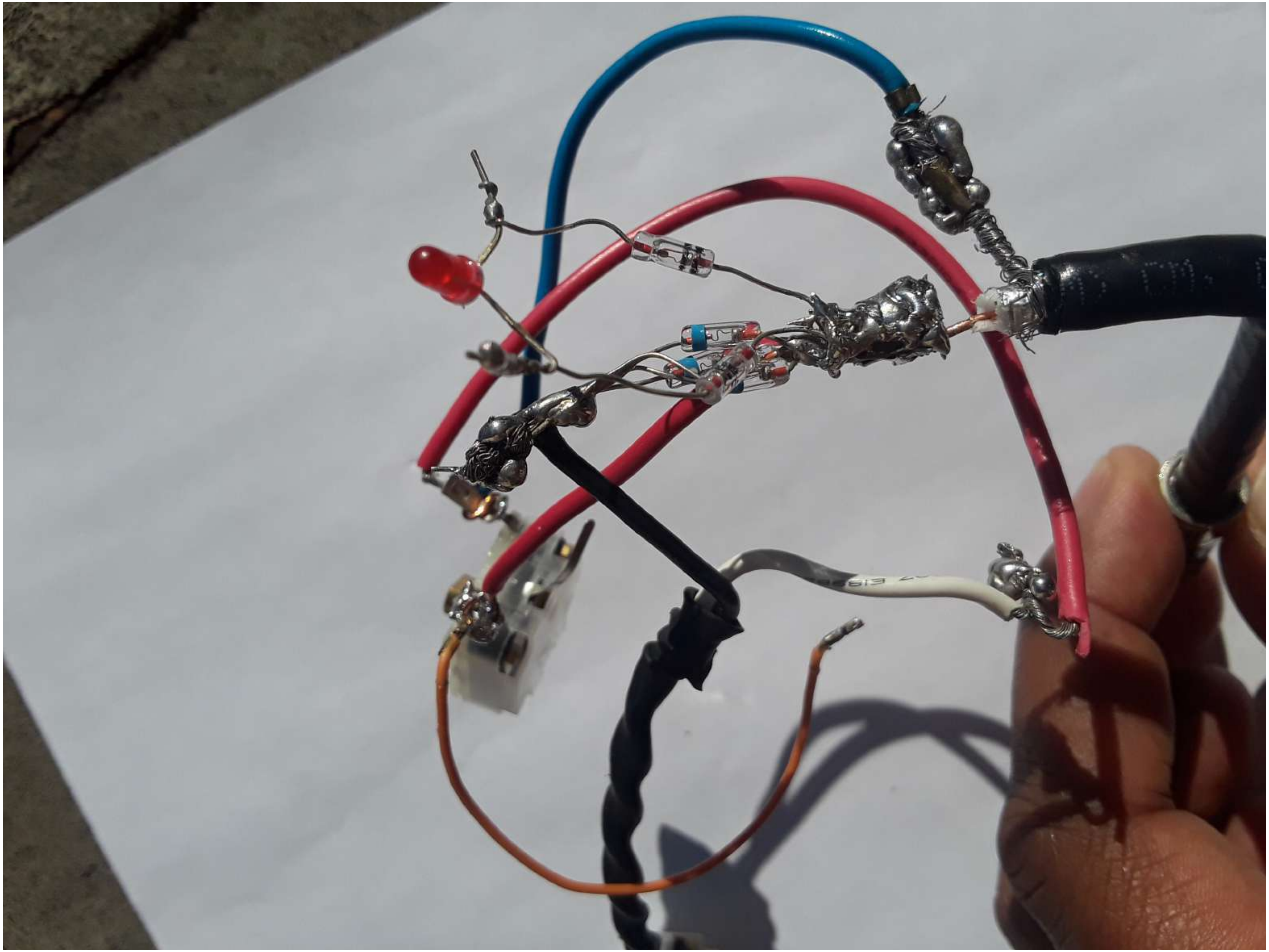




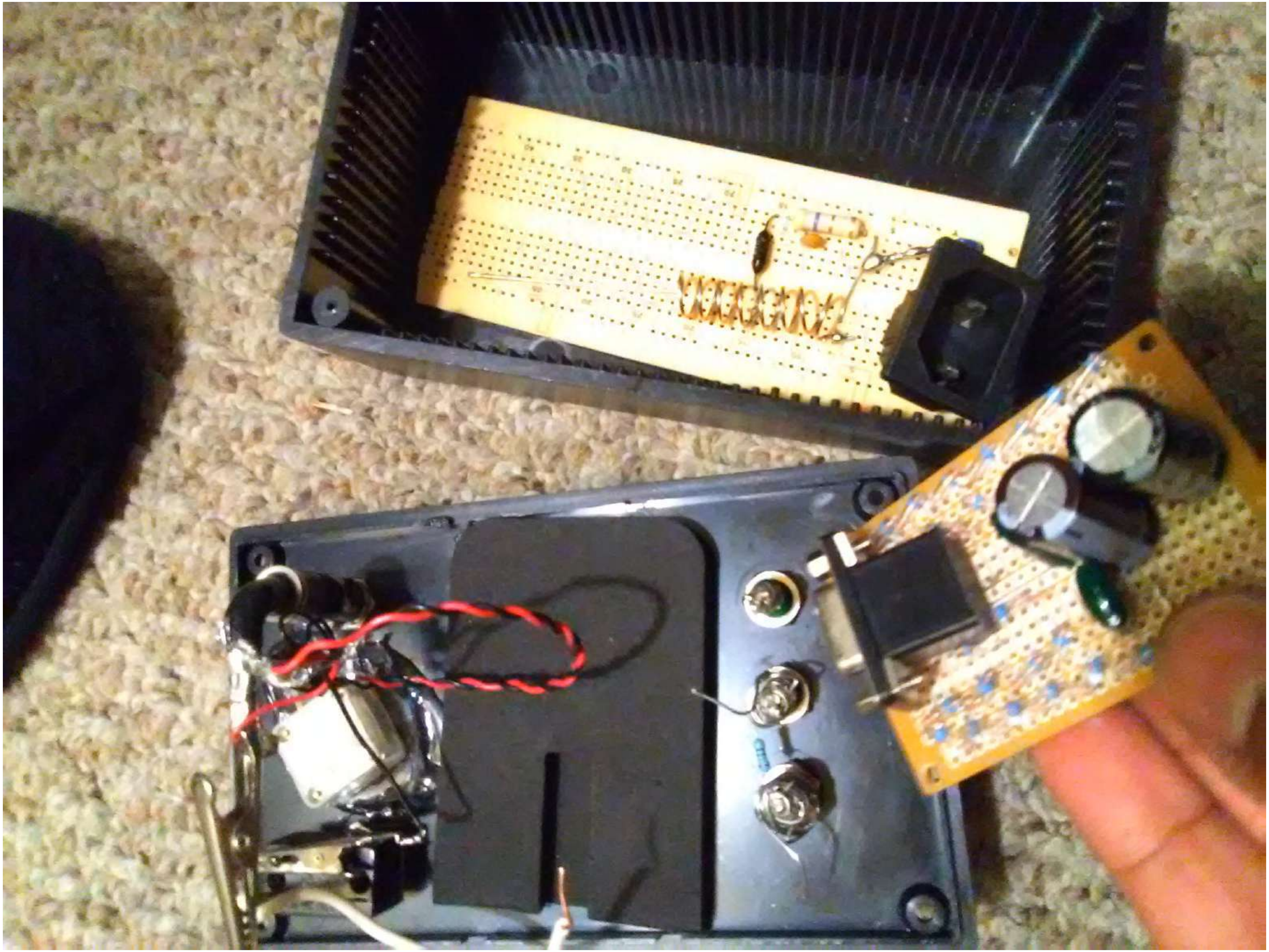









AC POWER
SUPPLY
On
Off
12.6
Volts
AC

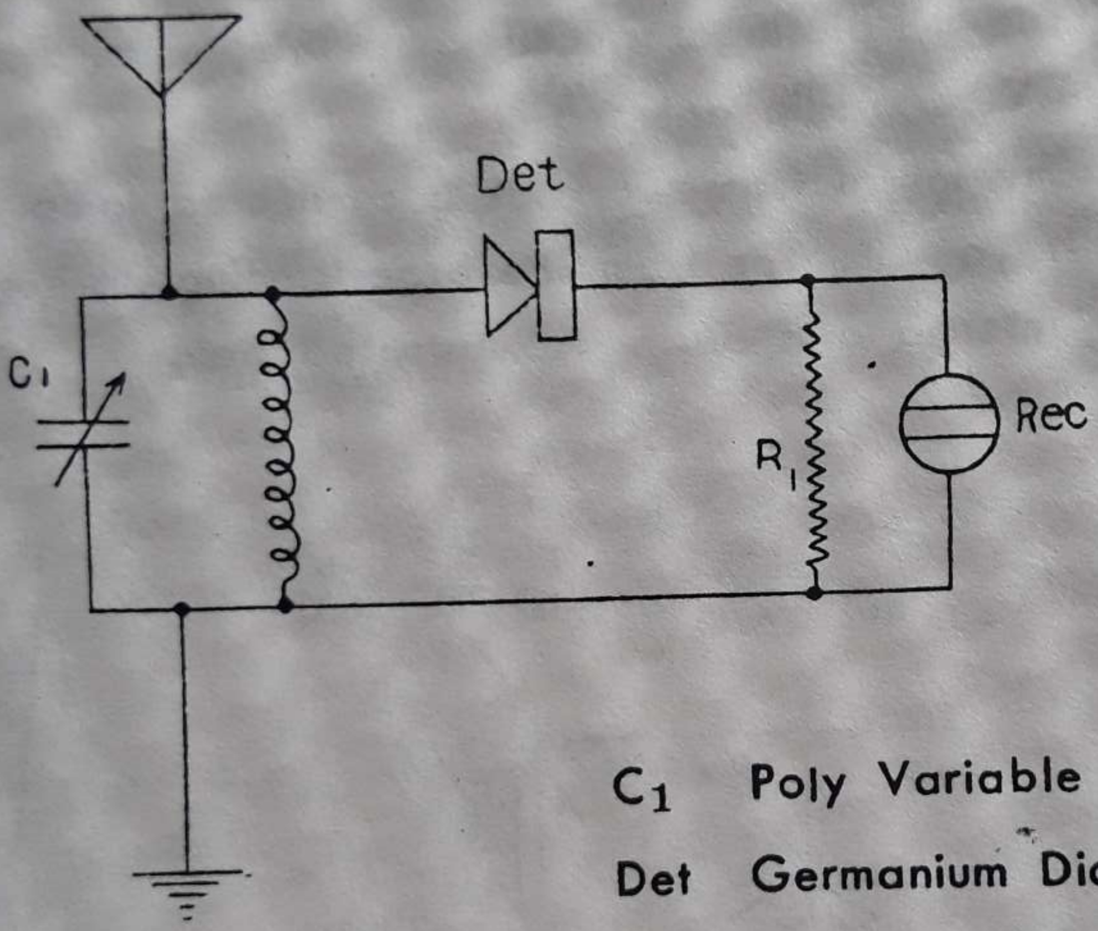



AC POW
SUPP


On
Off
AC POWER
SUPPLY
12.6
Volts
AC


Astra Lark

DIAGRAM



C_1	Poly Variable Condenser
Det	Germanium Diode
R_1	500 Kohm ~ 1 Megohm
Rec	Crystal Eearphone

Printe

LARK PT-8
NON BATTERY GERMANIUM RADIO

This radio is operated by a germanium diode and has a high "Q" tuner that provides a much clearer reception than that of the old type crystal sets.

FEATURES:

1. LARK PT-8 Features a germanium diode which eliminates having to replace a dry battery.
2. The LARK PT-8 should last for age provided it is not dropped or ill-treated in any way.
3. The LARK PT-8 is ideal on picnic, the beach, the home or even at the office to heur your favorite program without disturbing others.

NOTE:

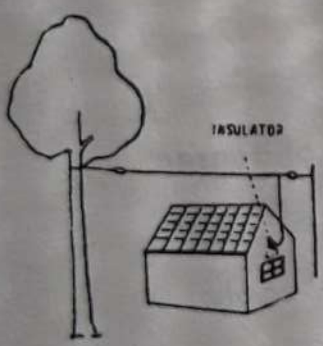
Since radio waves are weak in concrete buildings, install a simple antenna on the roof or attatch the alligator clip to T.V. antenna.

TRUCTIONS :

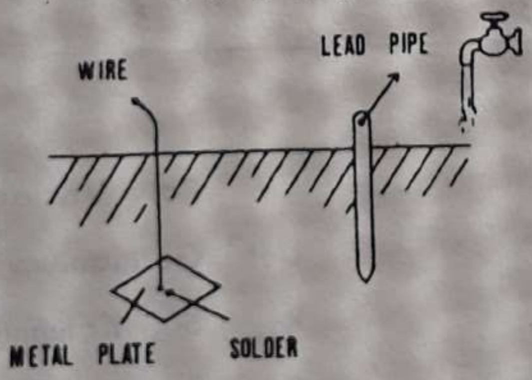
Use the wire with plug and alligator clip. Place the plug into the antenna Jack and attatch the clip to end of the following;

For Indoors :
1. The metal finger guard on a telephone.
2. T.V. or radio antenna.
3. The metal framework of a connected lamp.
4. If you are far from the broadcasting station use the regular antenna and earth as illustrated below.

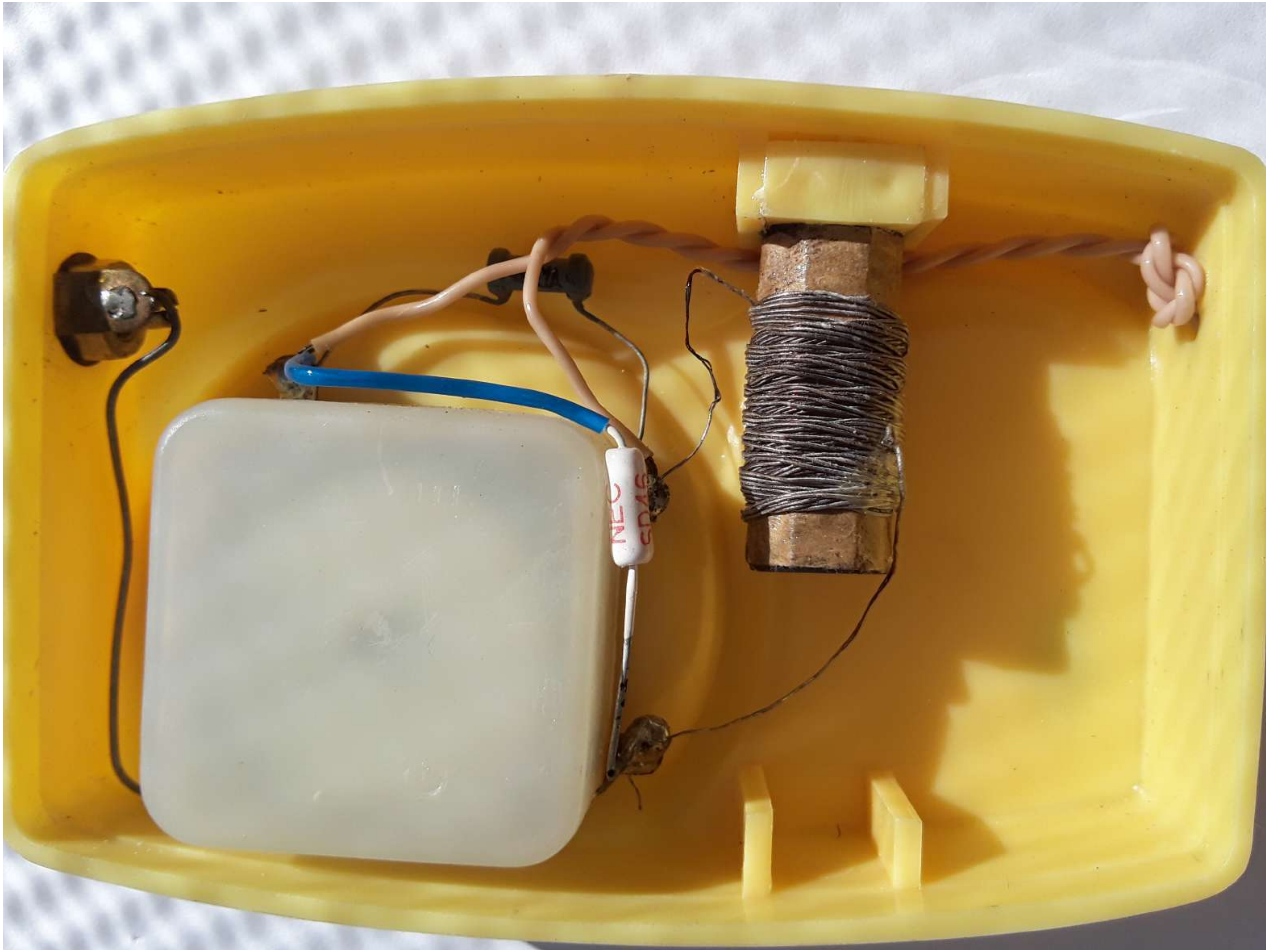
ANTENNA

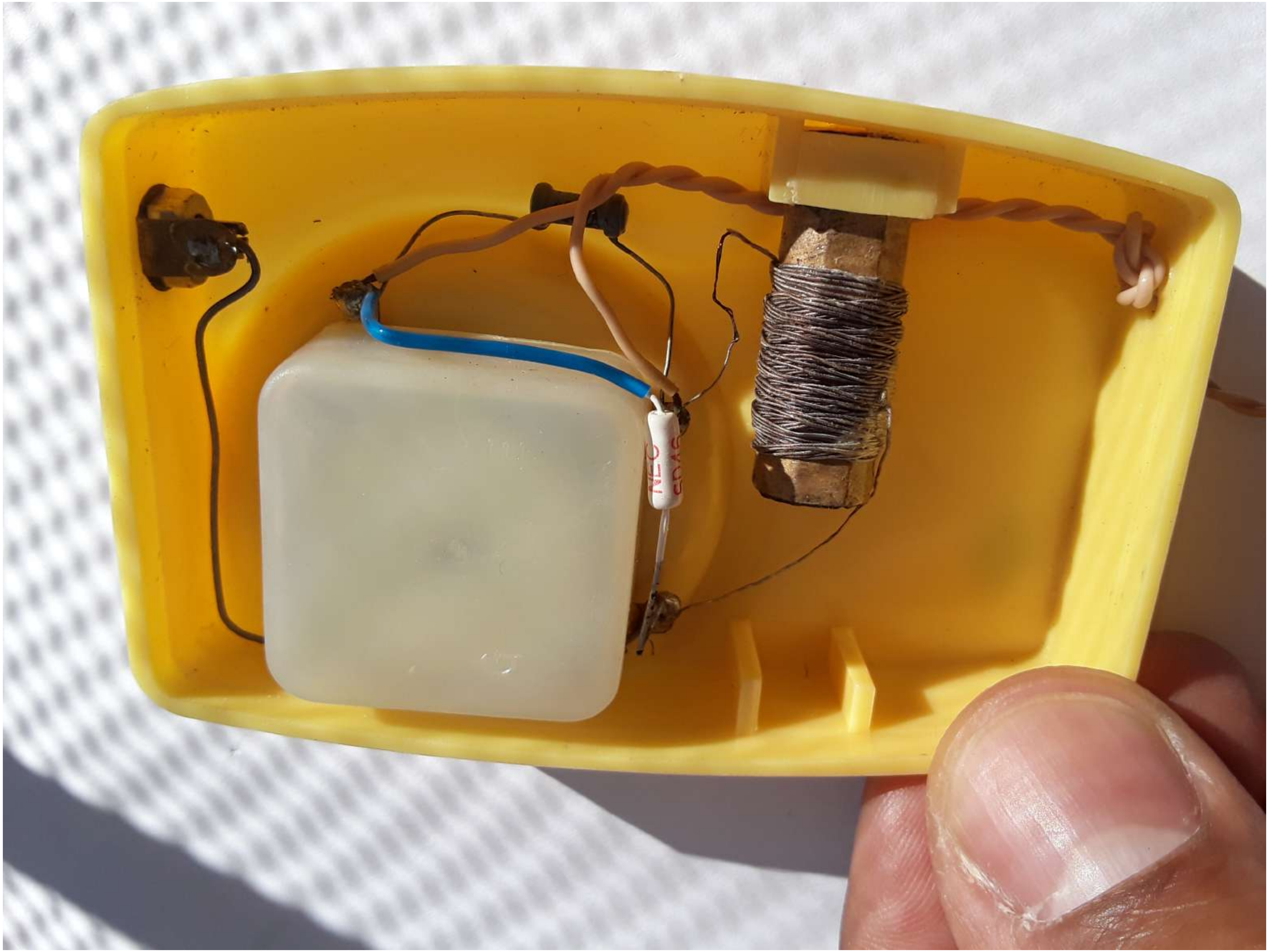


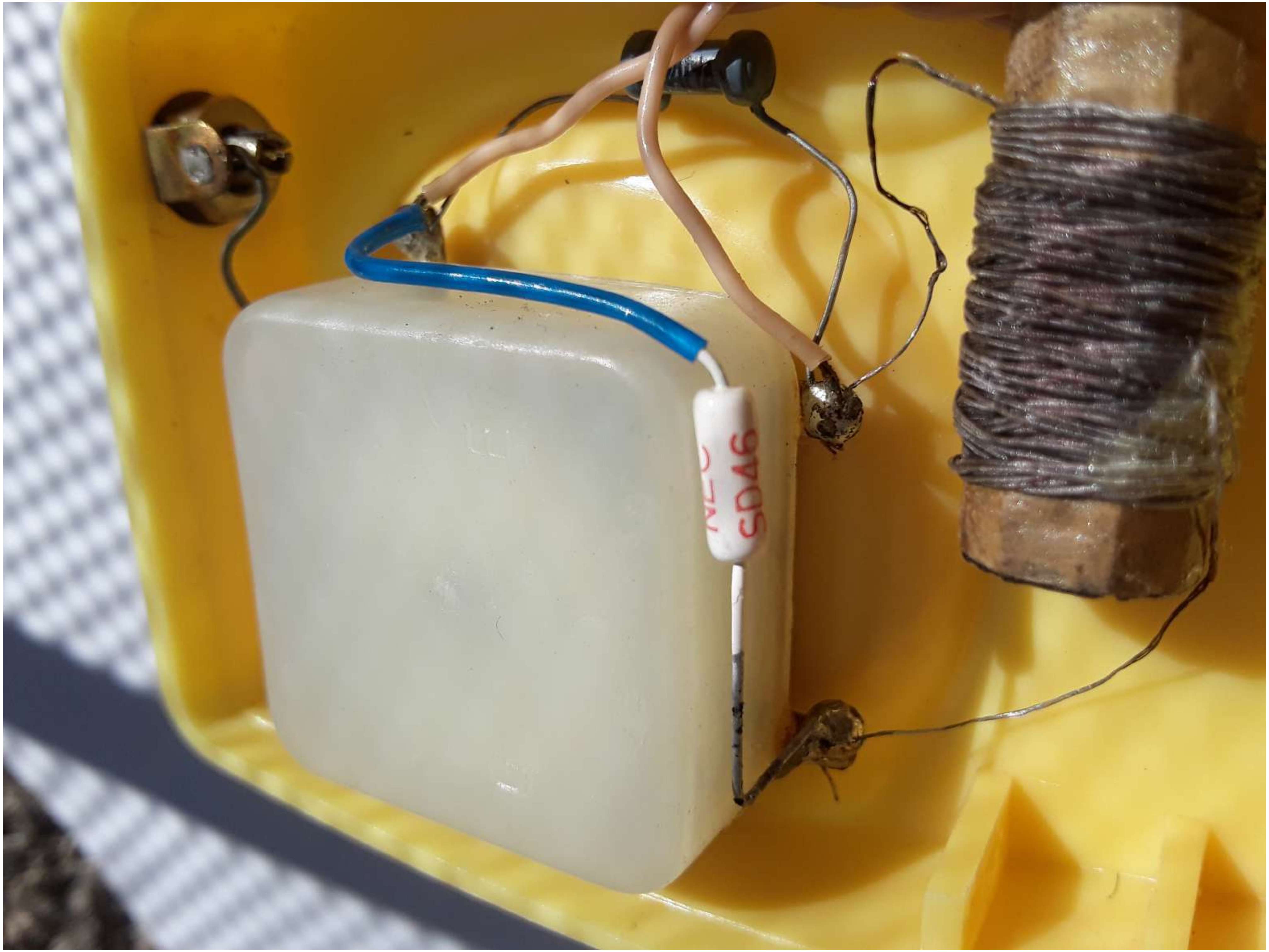
E A R T H

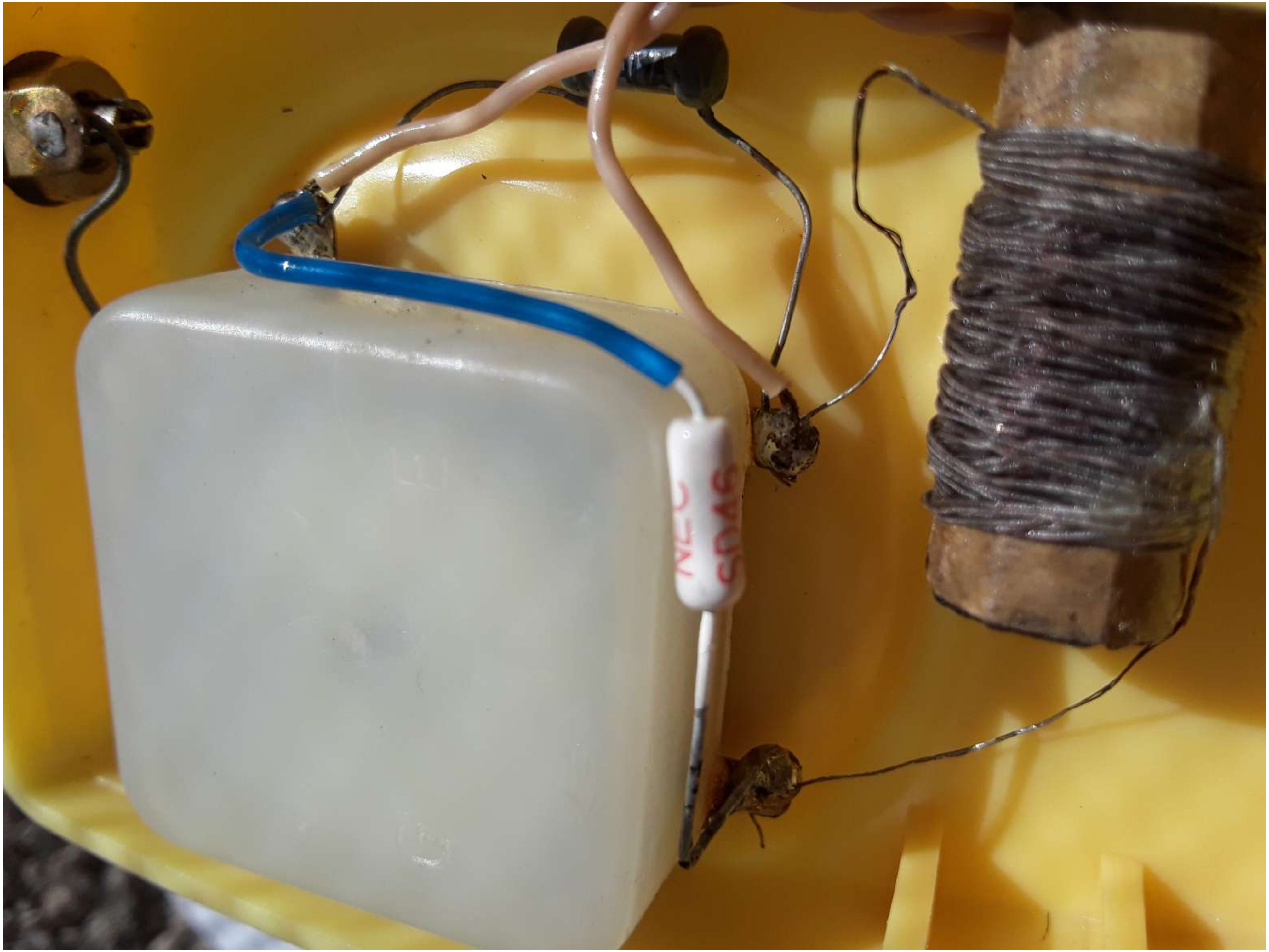


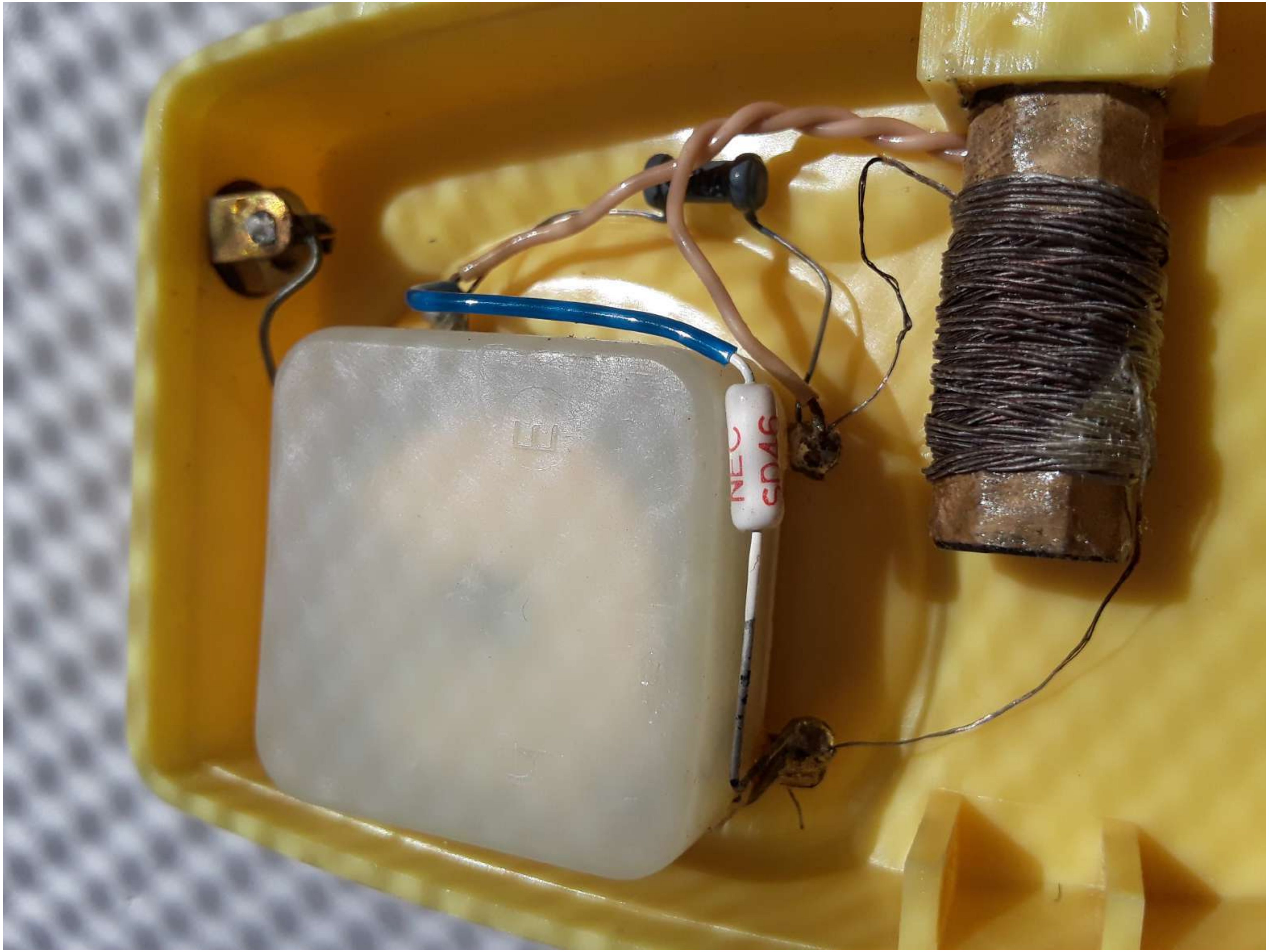
For outdoors : Use the rod antenna, screw it into the antenna jack and pull it out to its full length.

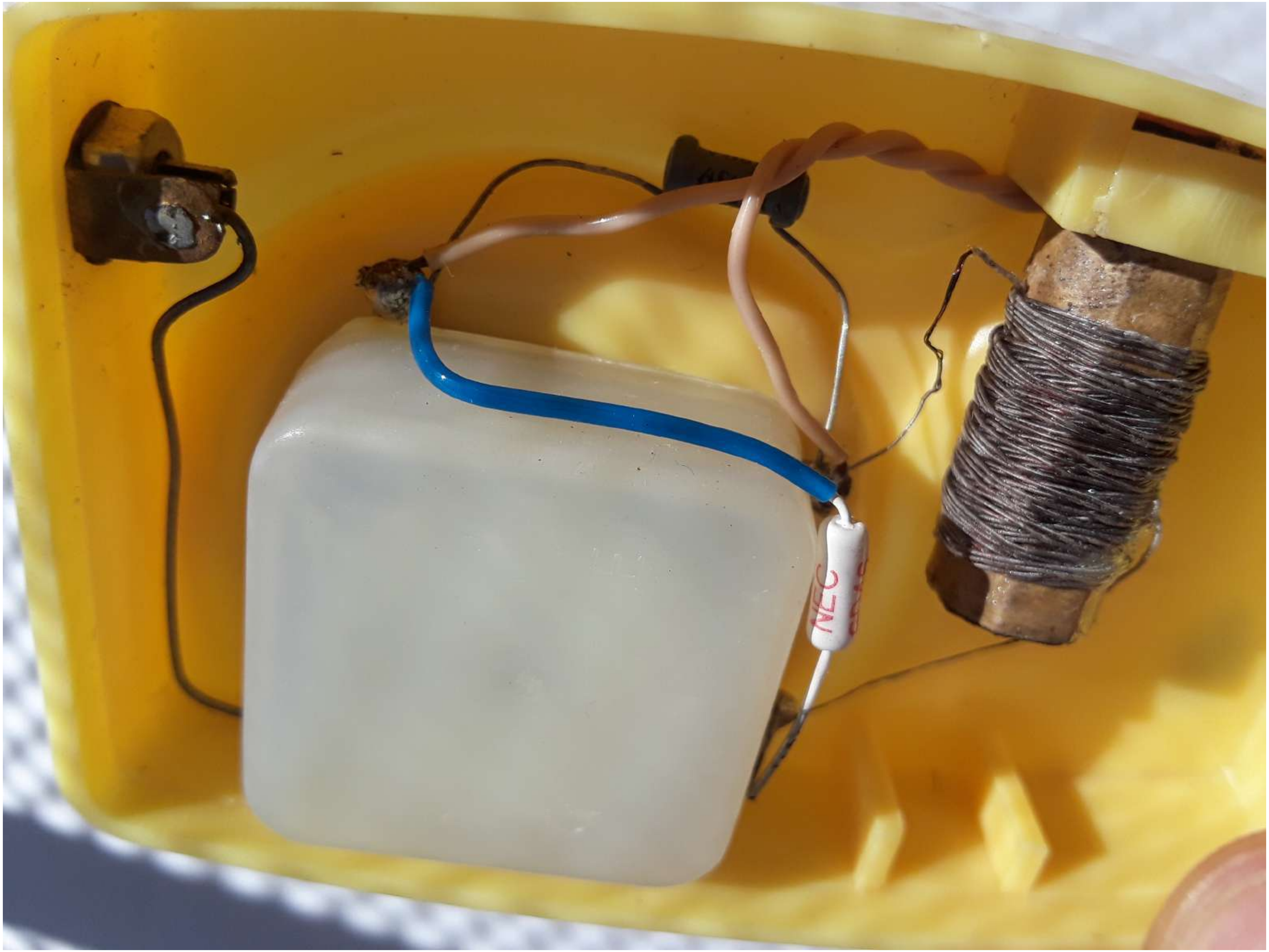

NEC
SD46

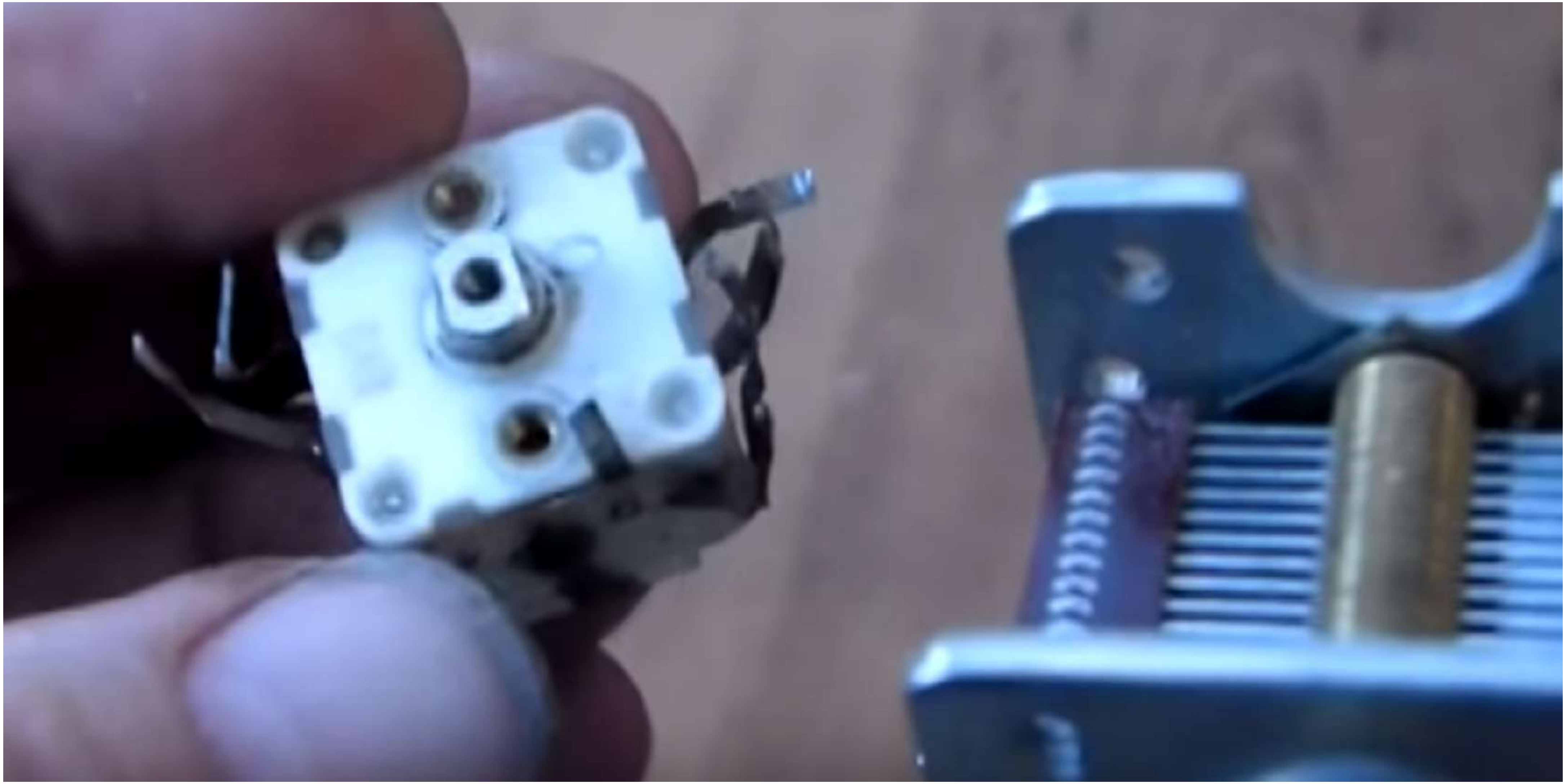

NEC

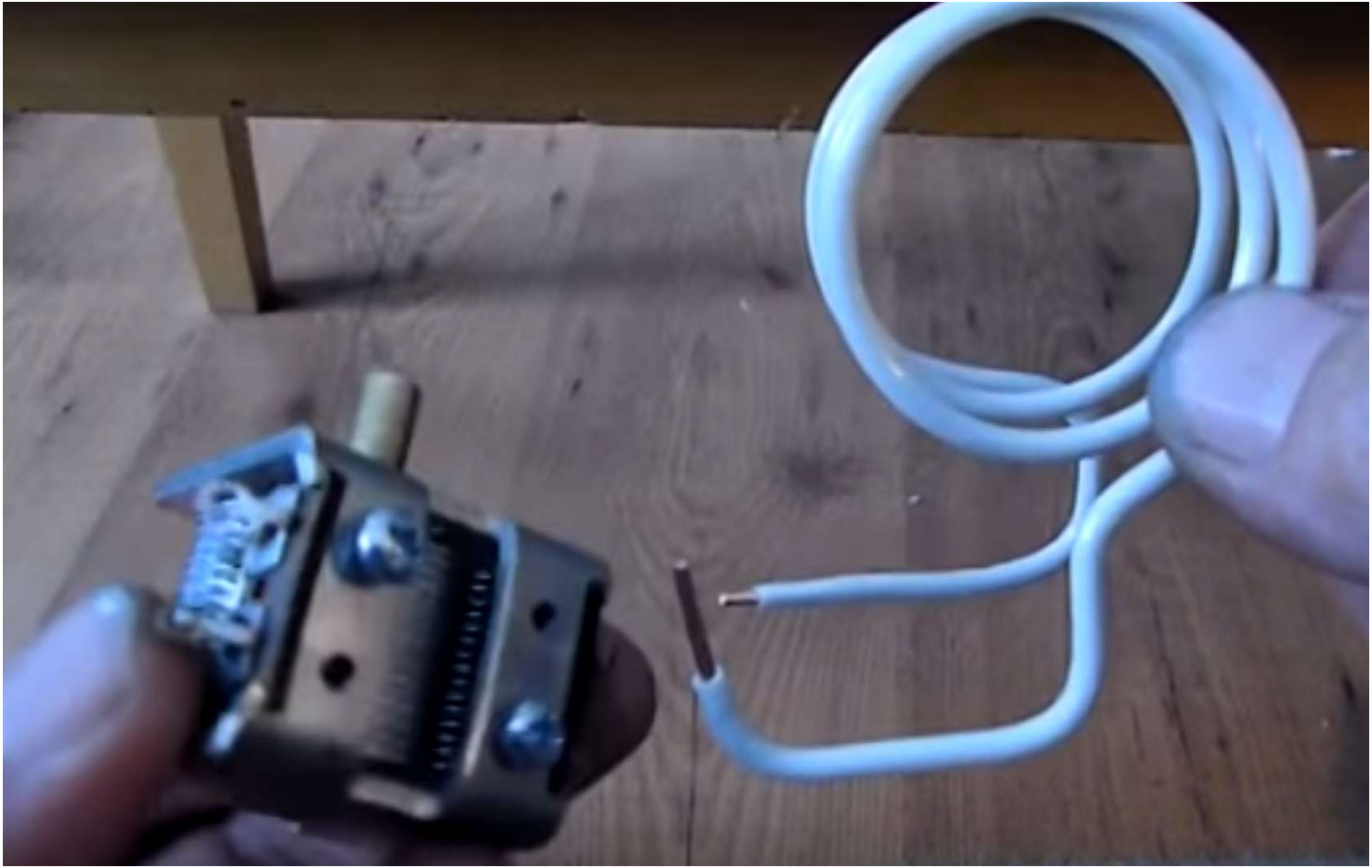

SDA6


NEC
SDA6


NEC
SDA6


NEC






8:54 / 13:14


4:30 / 13:14

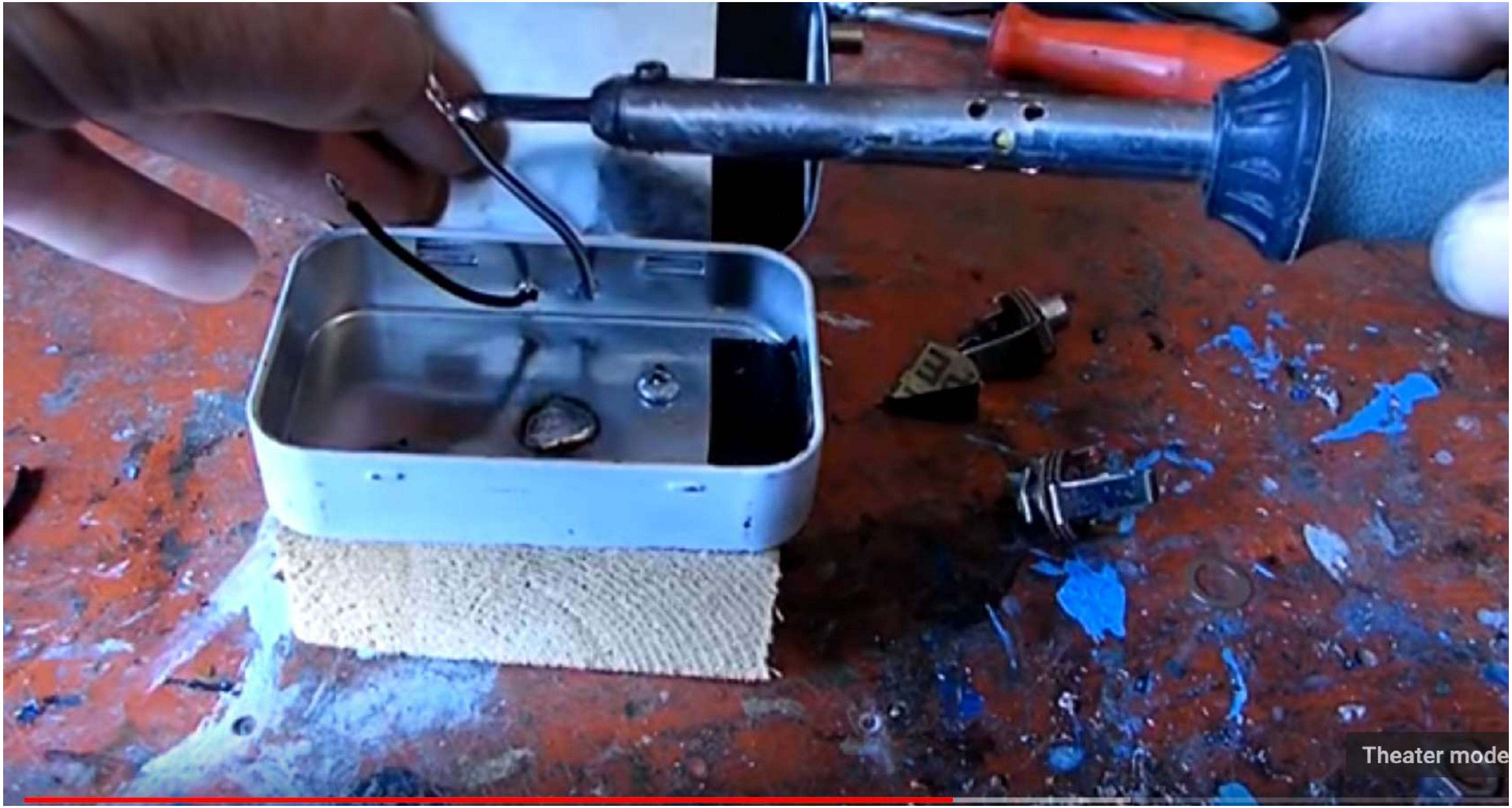

The Original Celebrated
CURIOUSLY STRONG
PEPPERMINT
MENTHE
7:37 / 13:14


Chicago
ALTOIDS
12:03 / 13:14


6:26 / 13:14


10:58 / 13:14


antenna required. Just a random
wire antenna. Mine is


Theater mode

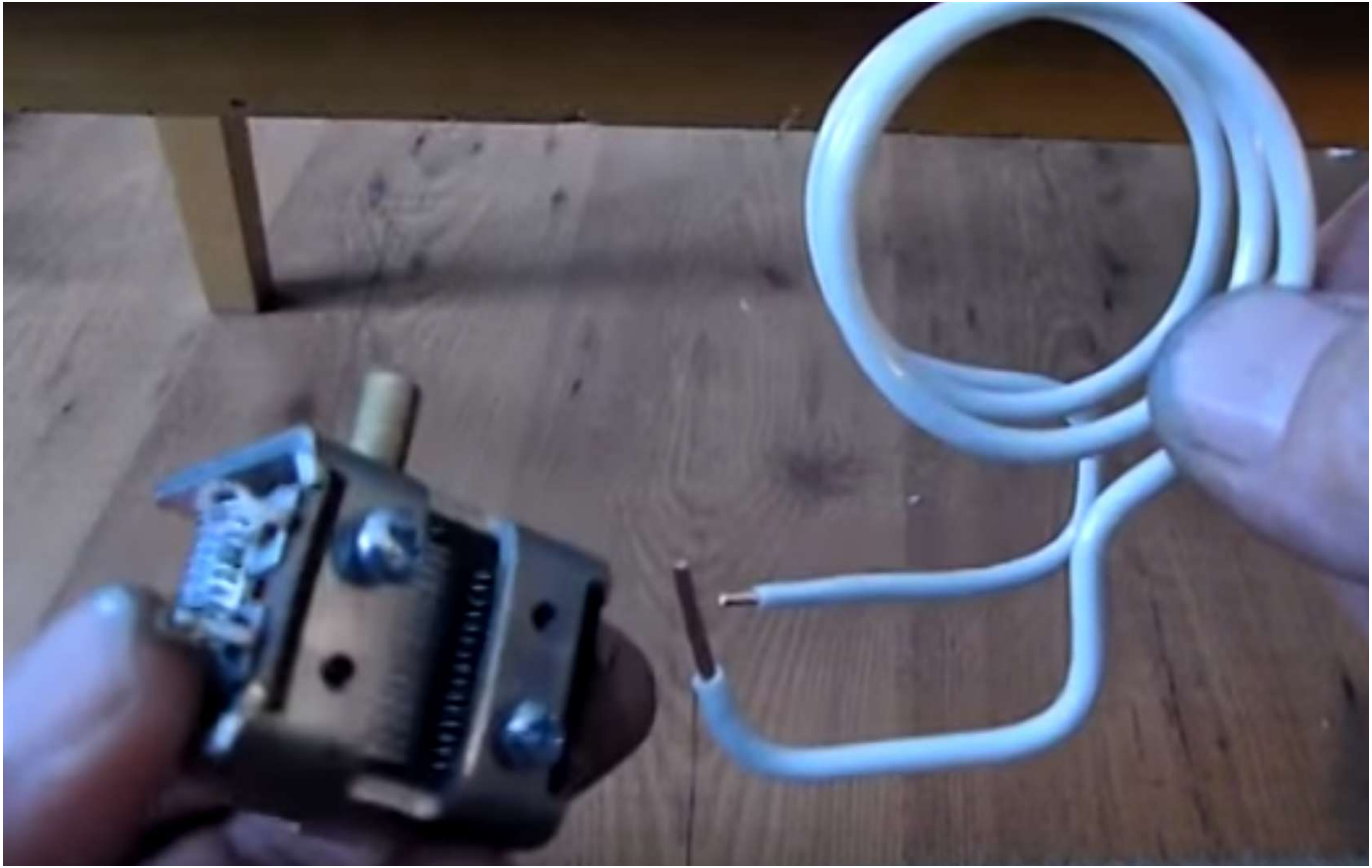

12:01 / 13:14


alive just like it did in the 70s.


It could overload or fry yor amp.


antenna required. Just a random le
wire antenna. Mine is 70 feet long.
11:56 / 13:14


8:40 / 13:14

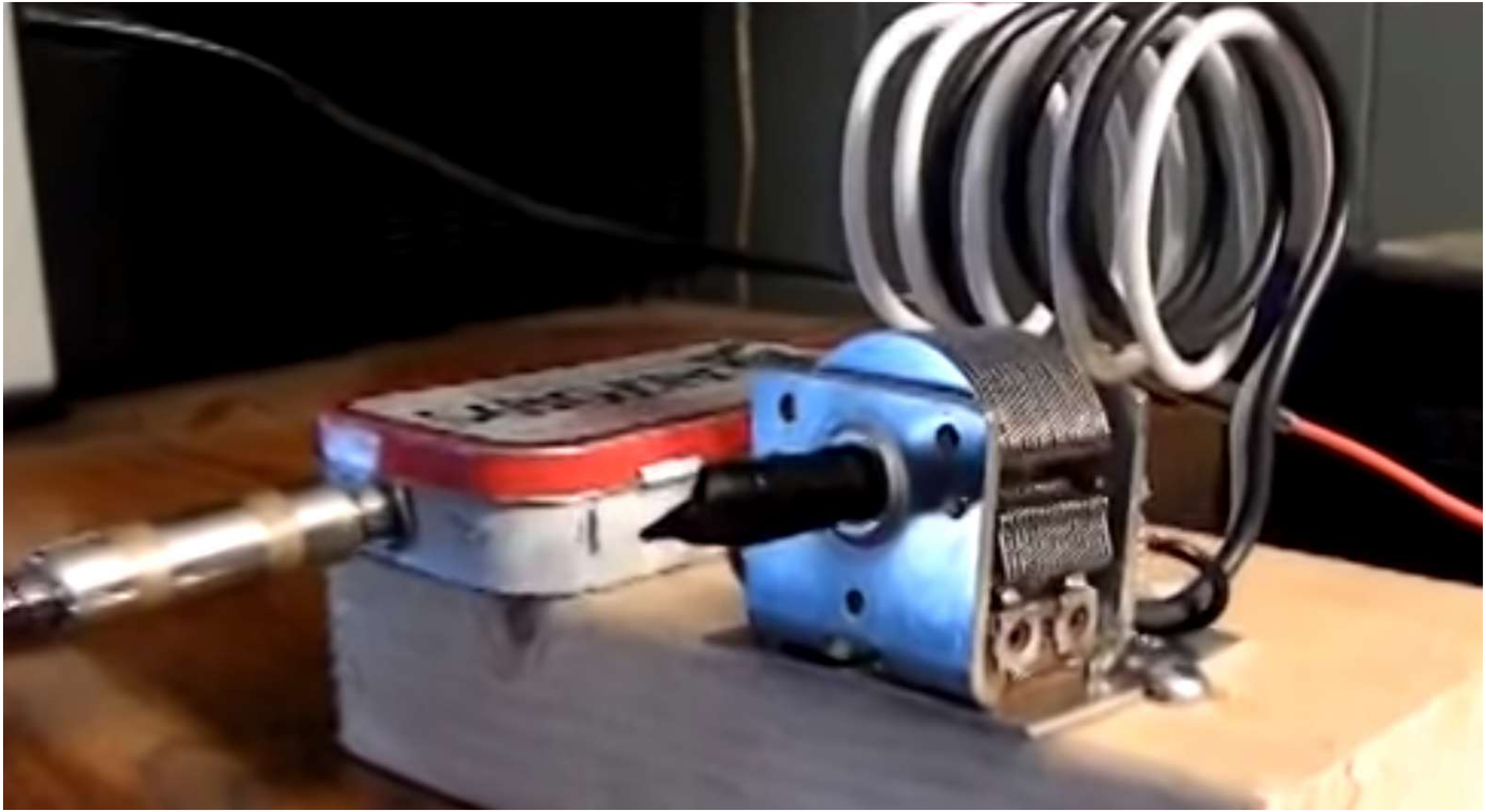


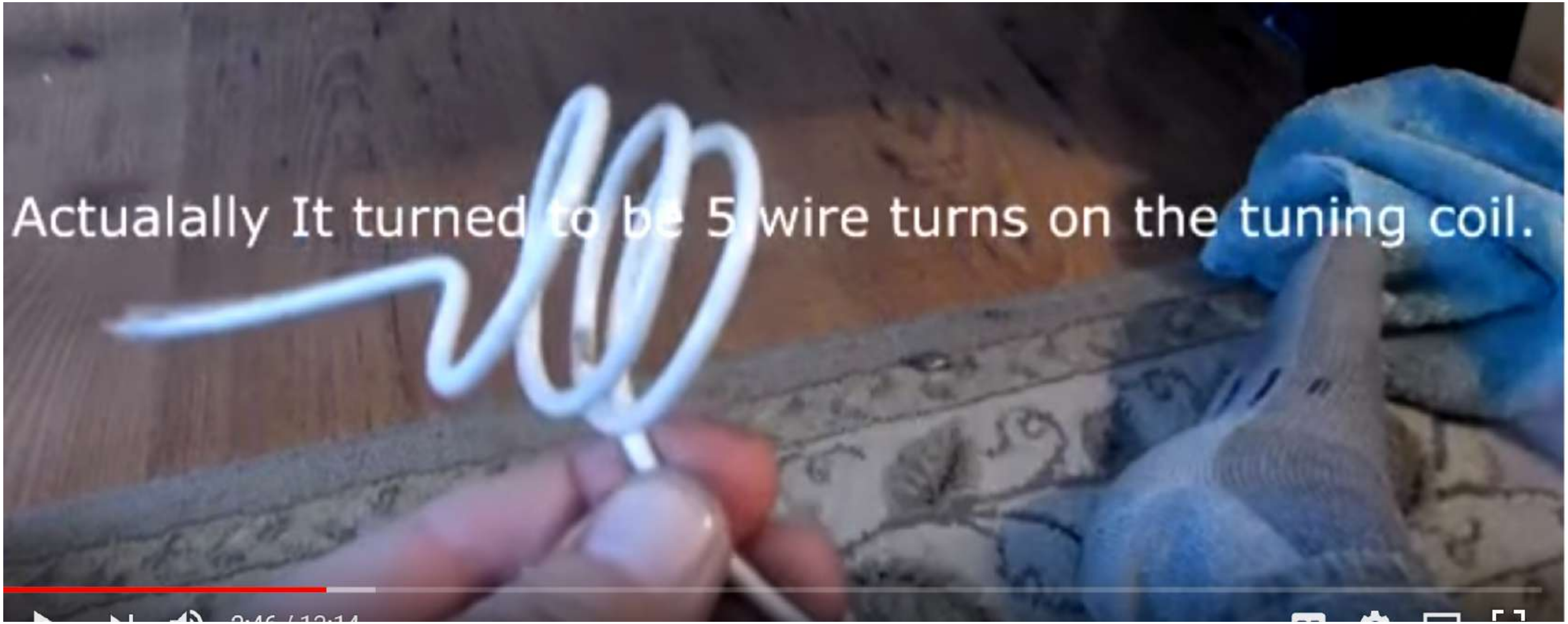

8:54 / 13:14


I have heard stations from Alaska, Hawaii,
California, New York, Chicago and Florida.
ALTOIDS
CURIOUSLY STRONG
PEPPERMINTS
12:03 / 13:14


6:26 / 13:14

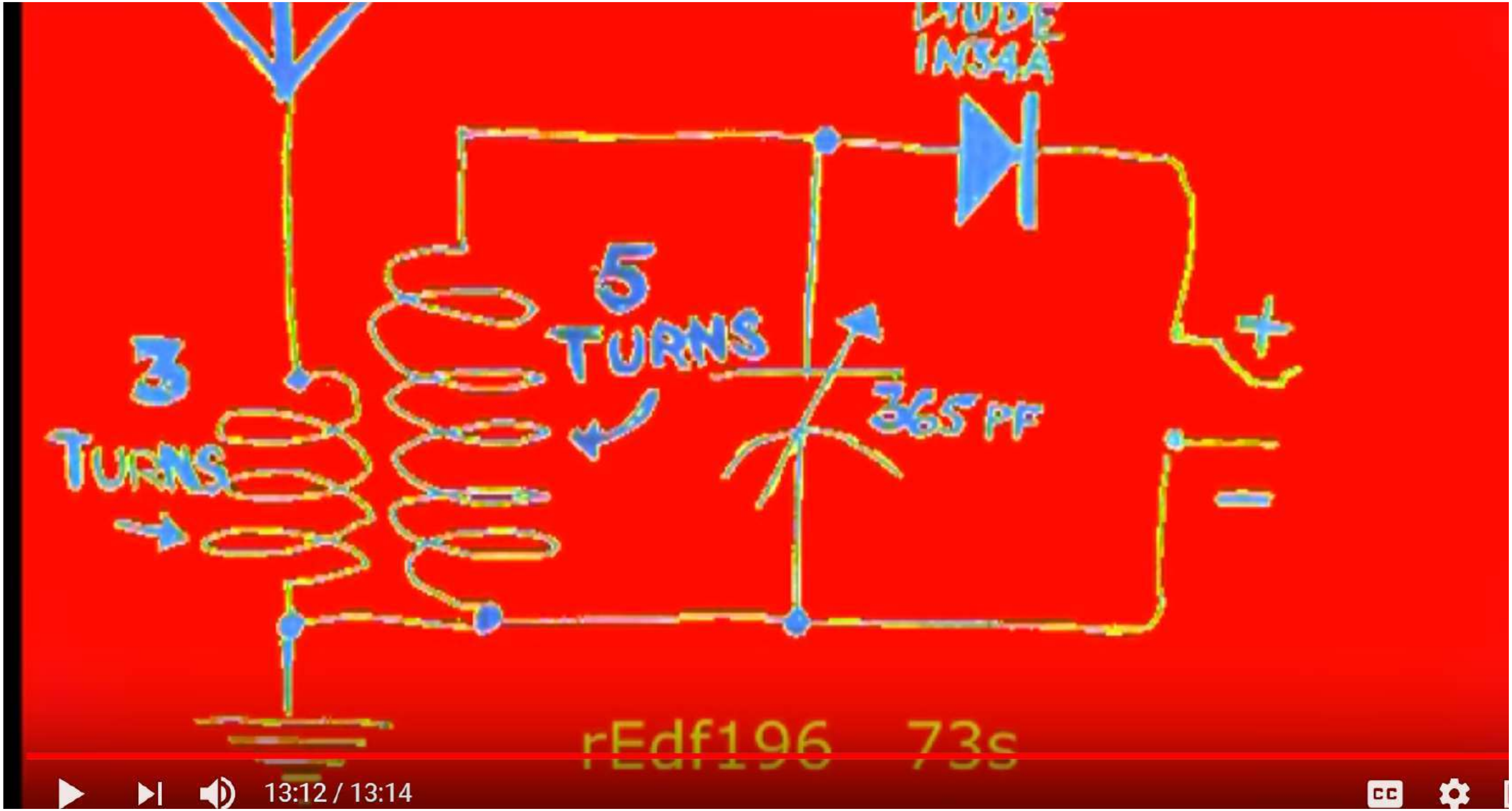

4:11 / 13:14
CC




Actualally It turned to be 5 wire turns on the tuning coil.


4:11 / 13:14
CC


4:49 / 13:14

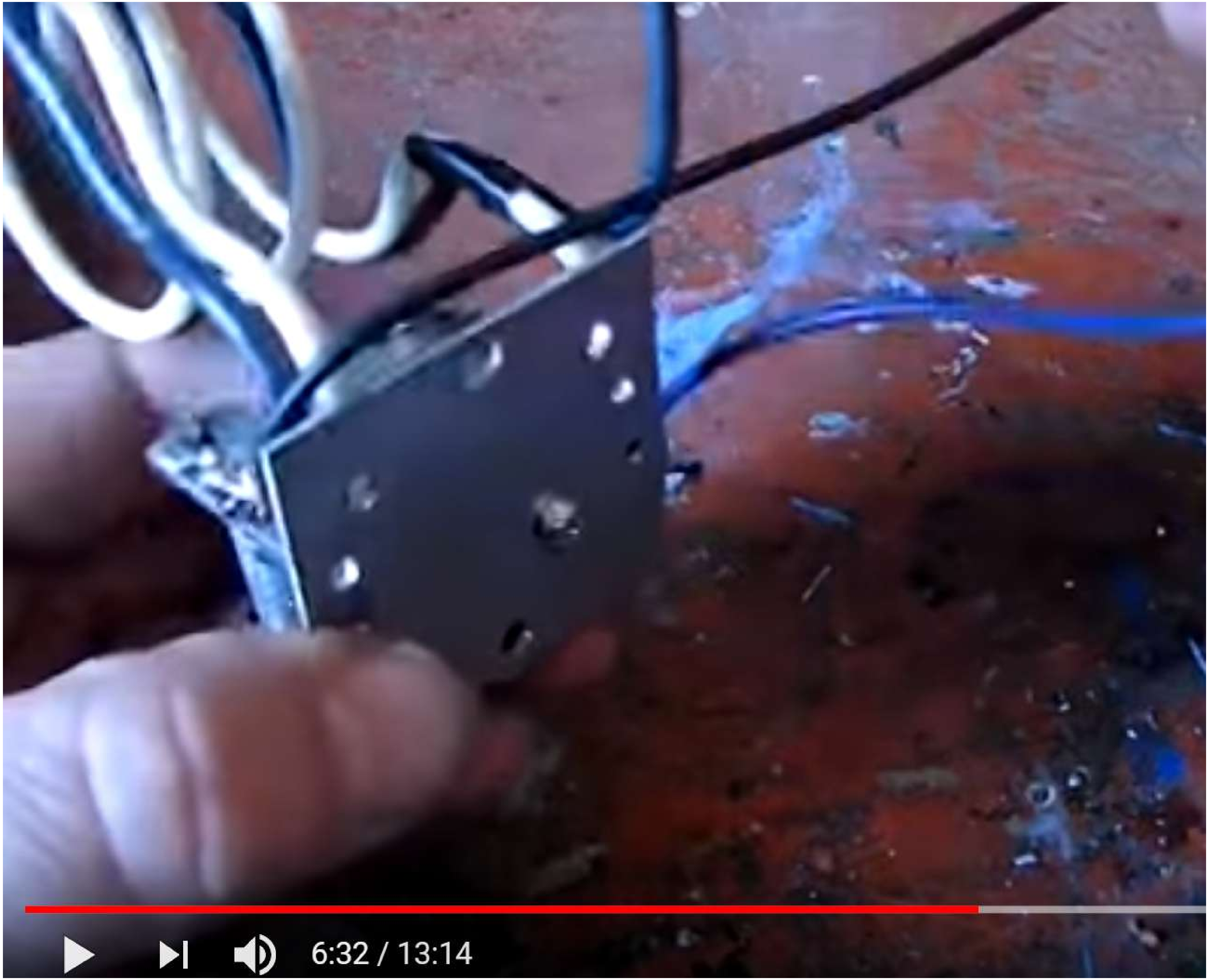


IN34A
5
TURNS
3
TURNS
365 PF
+
−
rEdf196 73s
13:12 / 13:14


Channel 1-40
the strongest for
EXTREME POWER
11:23 / 13:14

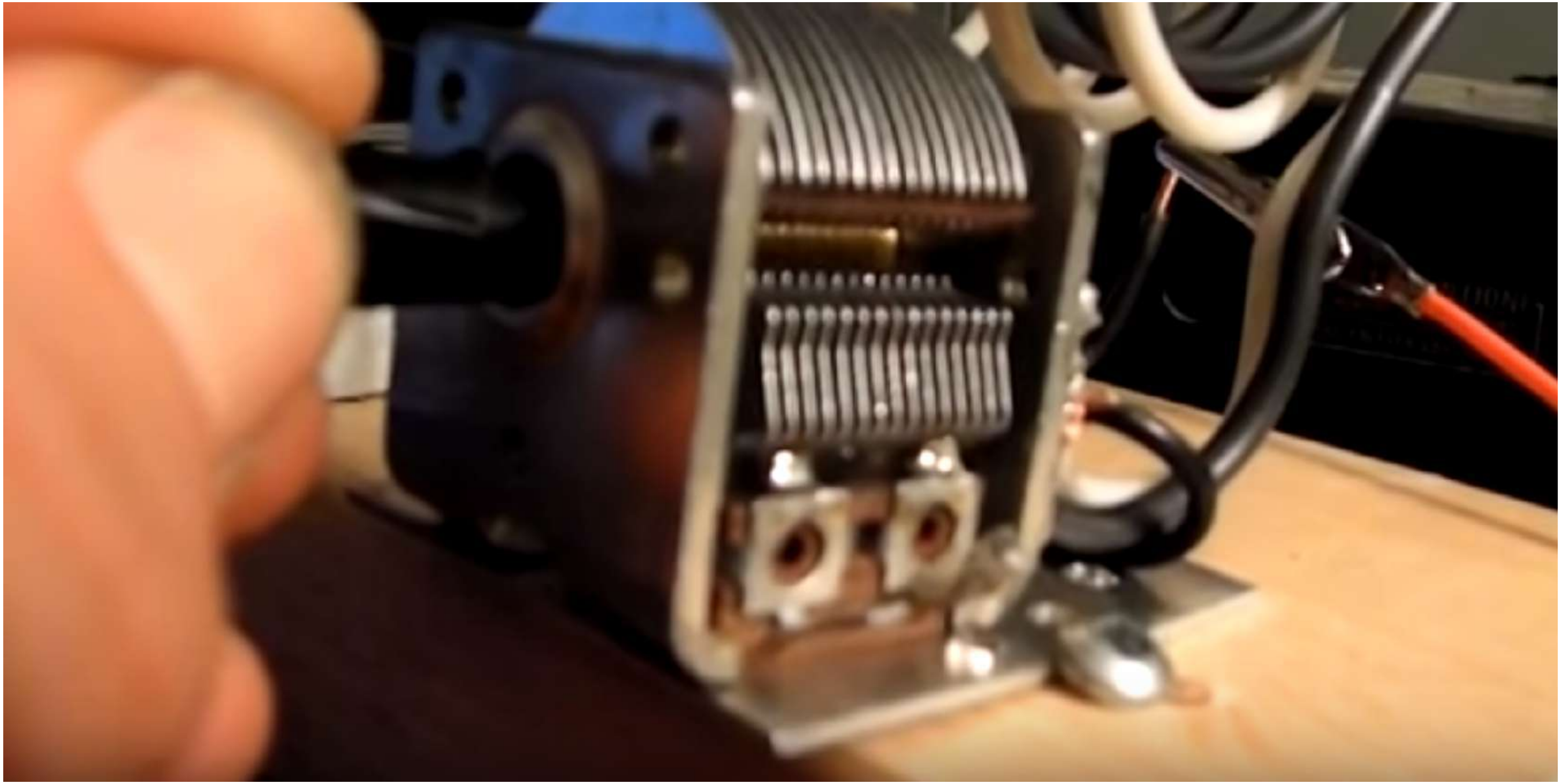

10:20 / 13:14


8:35 / 13:14


6:32 / 13:14


7:01 / 13:14


8:56 / 13:14




ALTOIDS
8:21

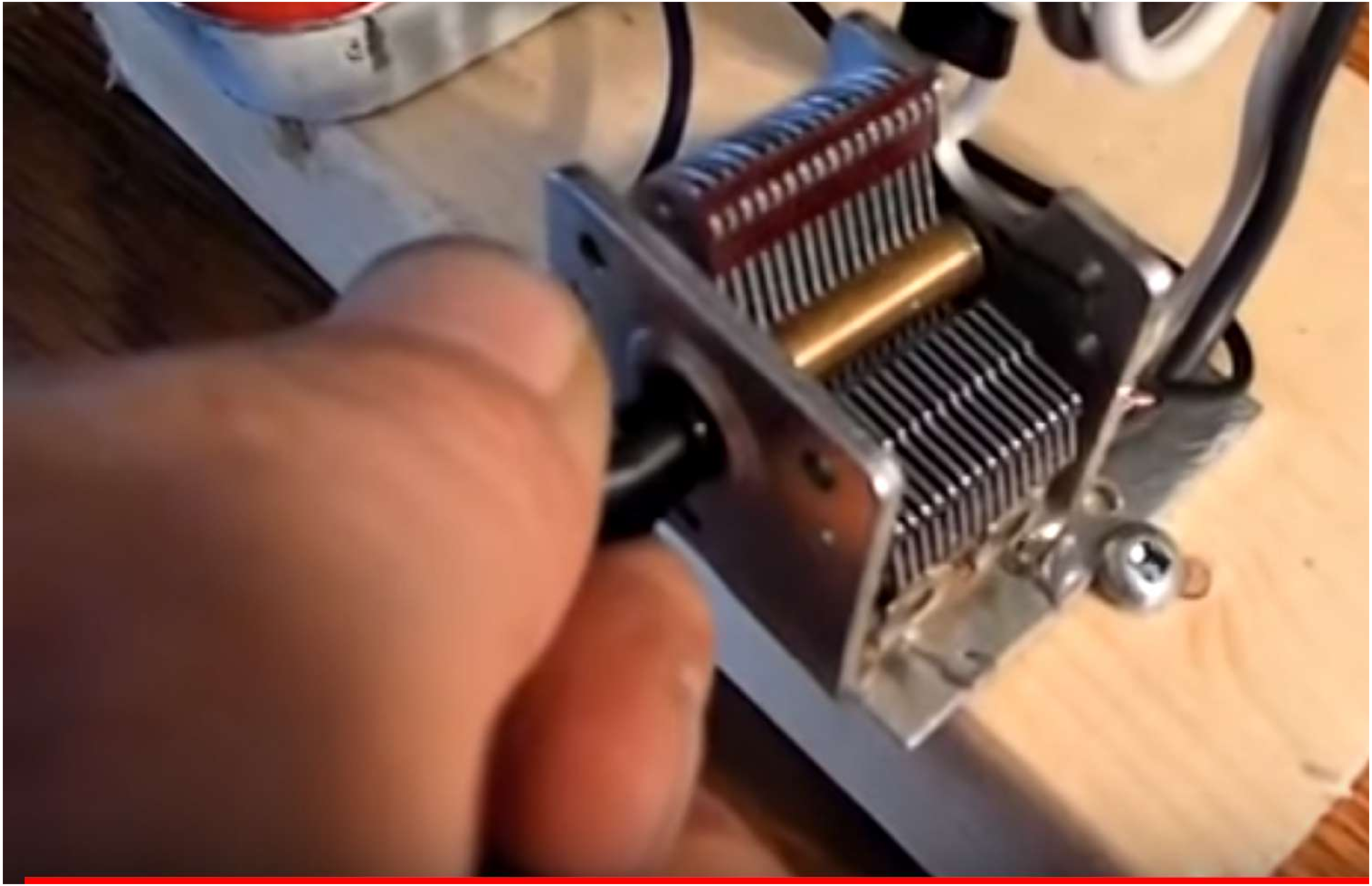

8:42 / 13:14


7:39 / 13:14


Weller
7:24 / 13:14

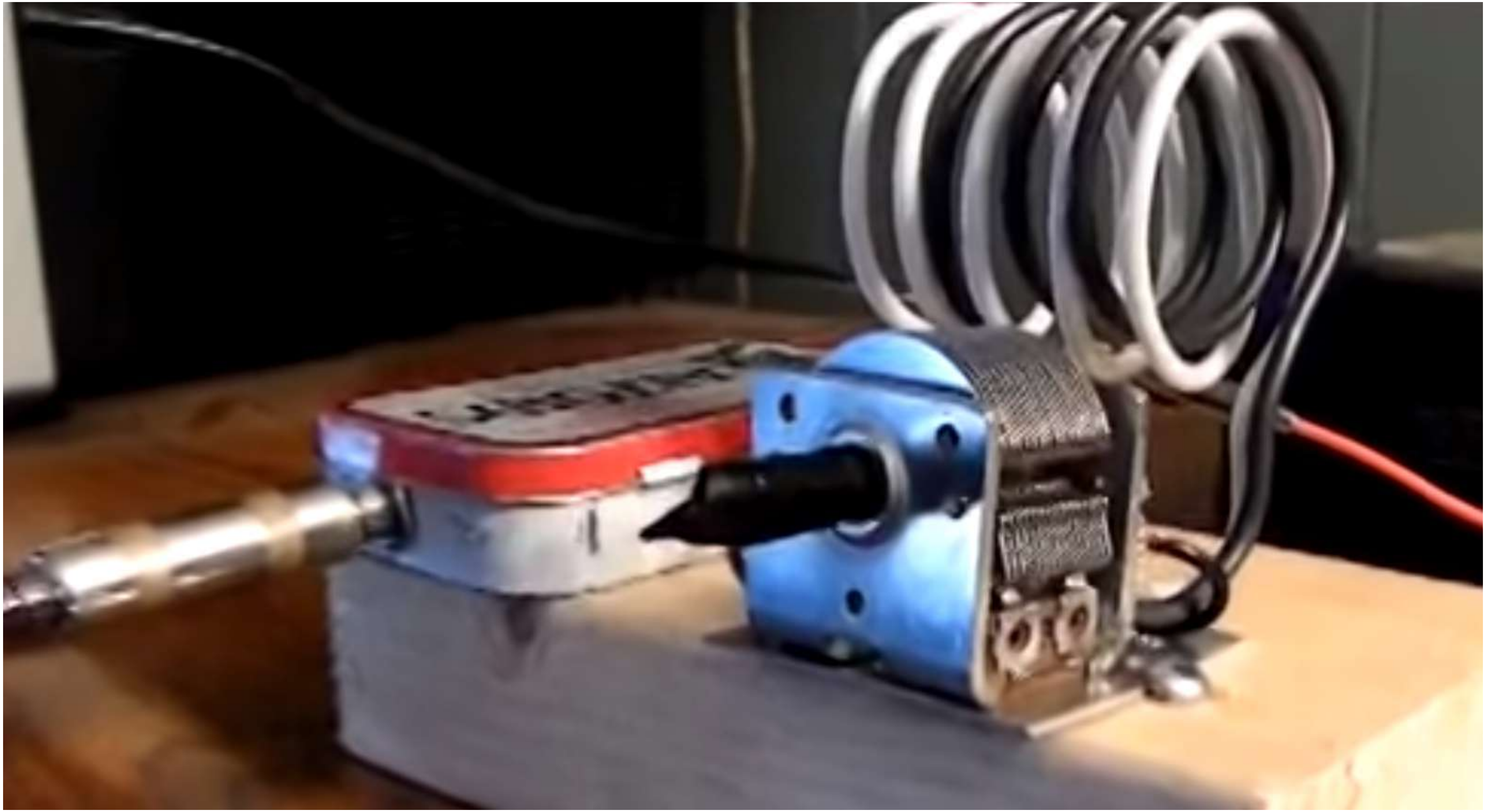

12:24

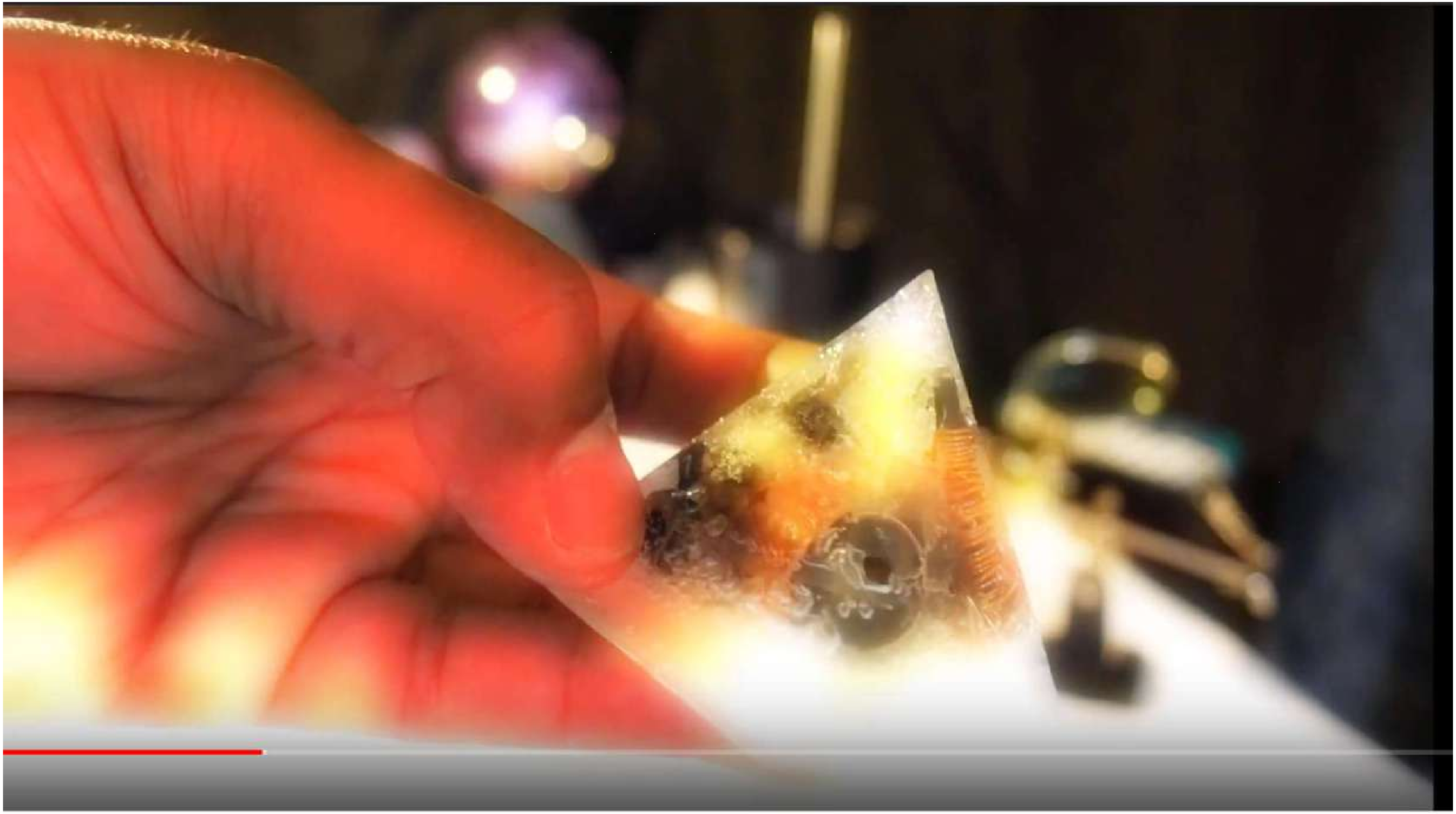

ALTOIDS
10:35 / 13:14

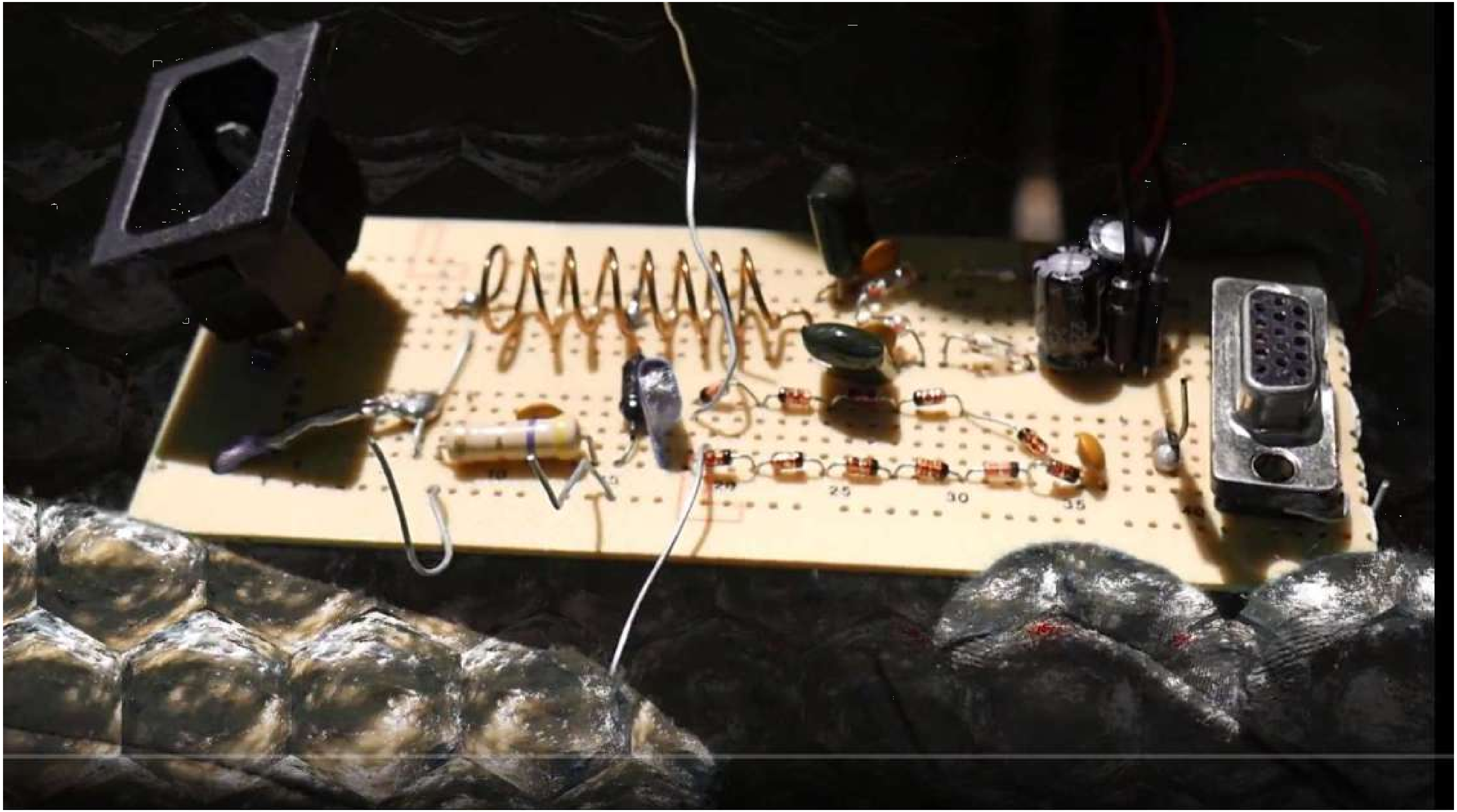


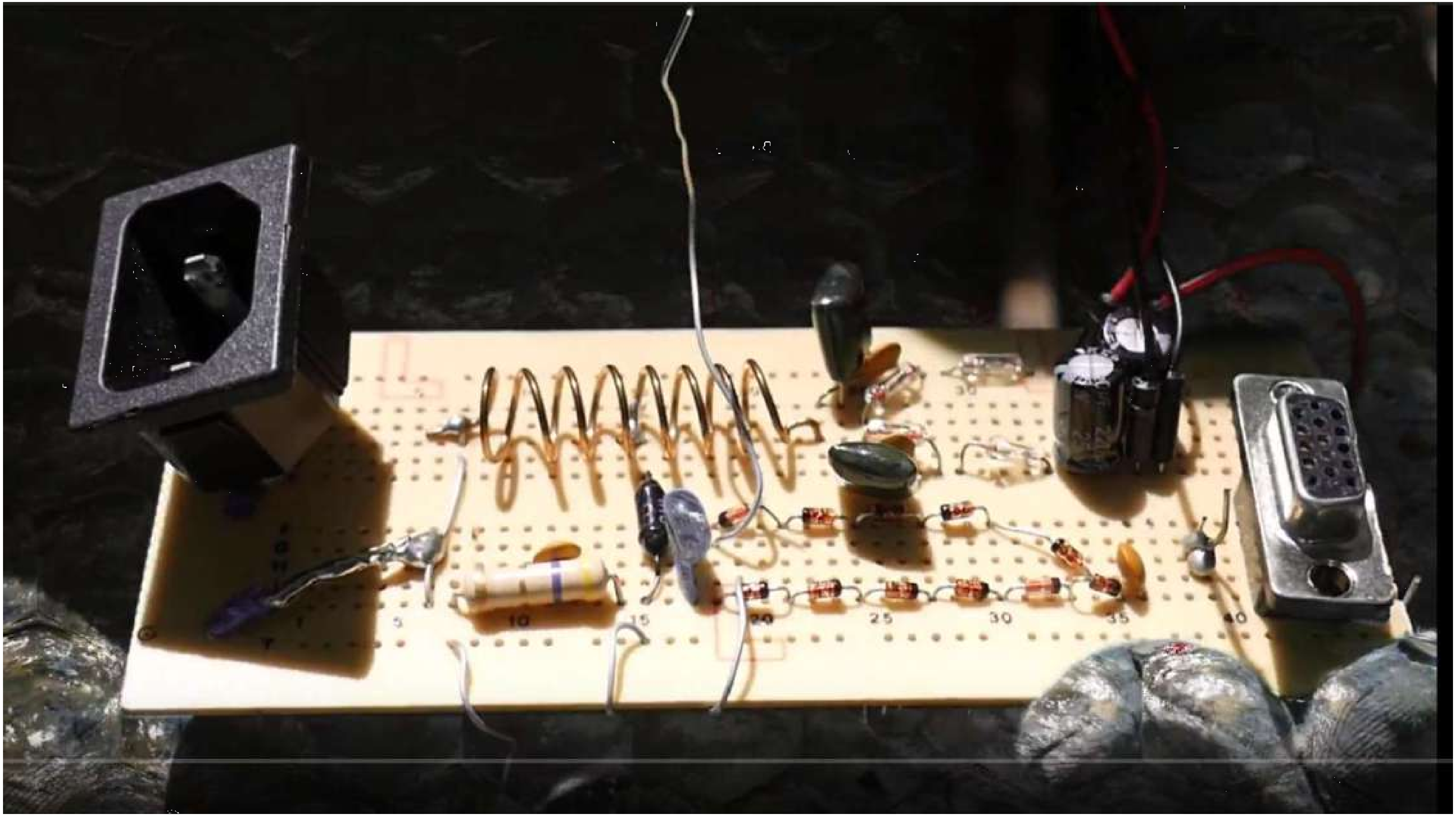

The Original Celebrated
CURIOUSLY STRONG
PEPPERMINT
MENTHE
ALTOIDS

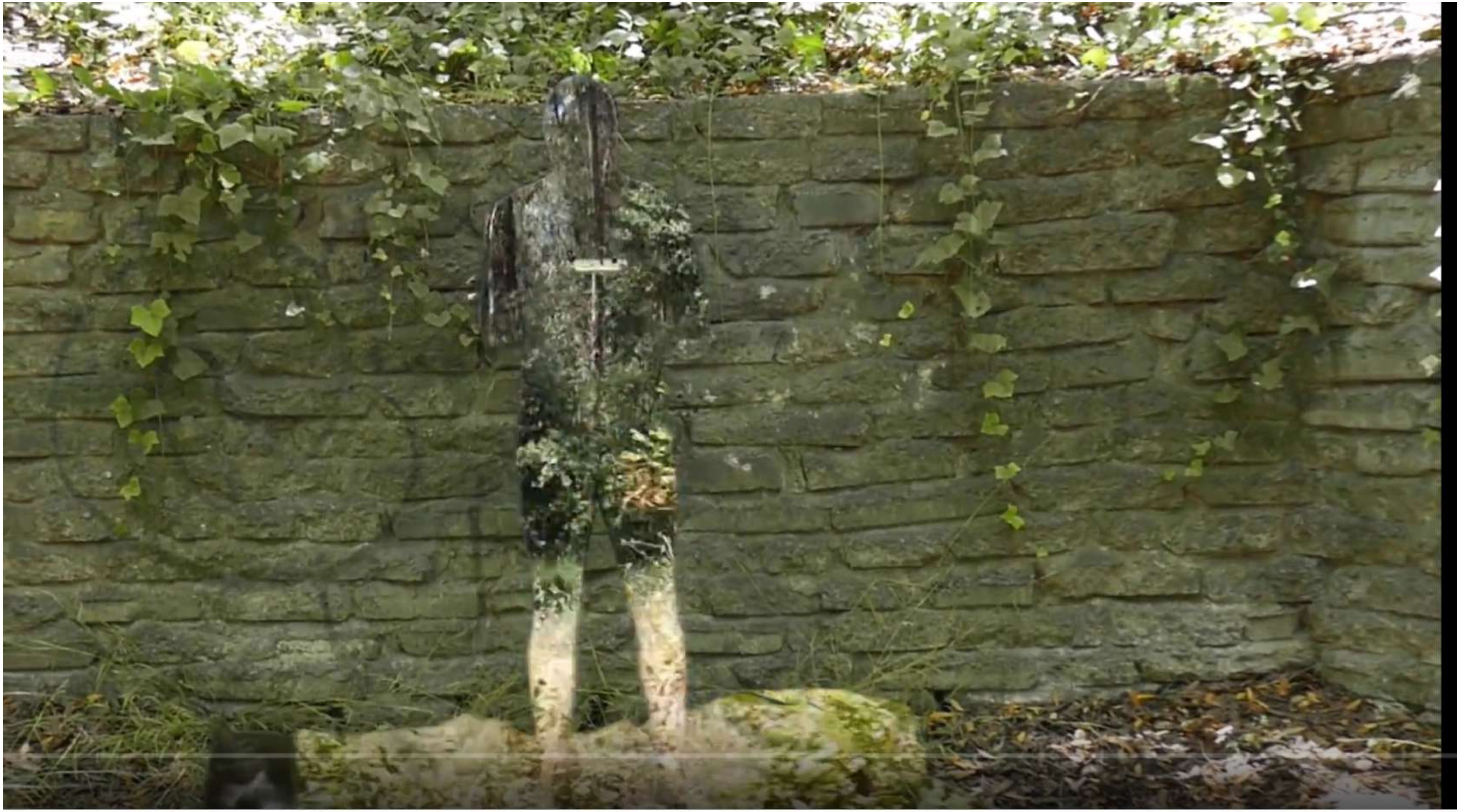

ALTOIDS
9:26 / 13:14





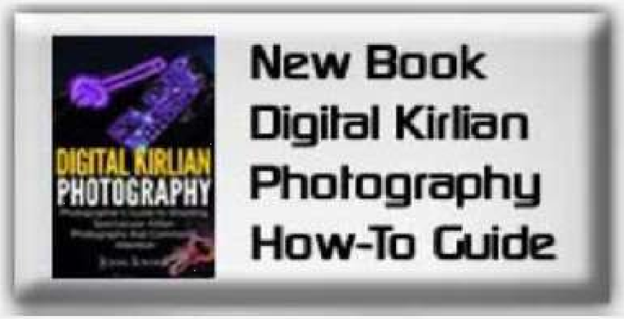

25
30
35


5 10 15 20 25 30 35 40




RICH, PURE TASTE
Folgers
CLASSIC ROAST
AC POWER SUPPLY
12.6 Volts AC

Kirlian Photography Device



New Kirlian Photography Book

Limited Edition Kirlian Prints

Building a Simple Kirlian Photography Device

The Kirlian device we are building uses a HV transformer. It is battery powered, but don't let that lull you into a false sense of safety. The Kirlian device generates pulses of high voltage that can provide a nasty shock. Still an advantage of being battery powered is portability.

In addition we will build a transparent electrode that allows one to use a standard camera (with bulb setting) to capture Kirlian images.

The schematic is shown in **Figure 2**. A completed circuit can be seen below the schematic. This is a simple manual device. It uses very few components. You would be hard pressed to find a simpler device that works as well. The prototype is built on a single piece of wood measuring *" x 10" x ¾" thick (see photo). The batteries B1 and B2 are 67.5-volt photo (instrument) batteries wired in series to produce 135 volts.

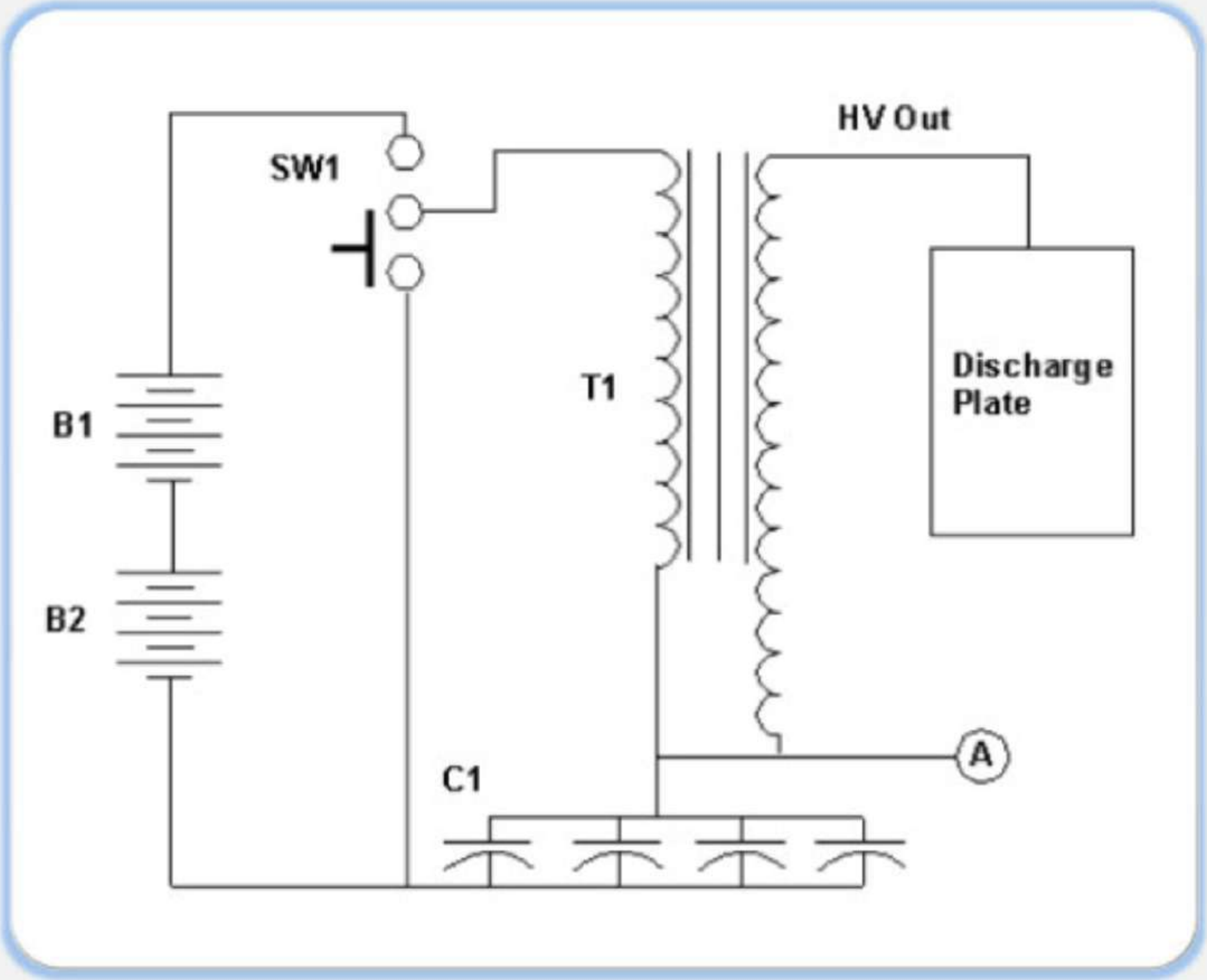

HV Out
SW1
T1
Discharge Plate
B1
B2
C1
A

Figure 2

If the photo batteries are not available you may want to try wiring 10 or more 9-volt batteries in series. The discharge will not be as intense, but it will work. Another option is to take the output from a 120V/24V step down transformer connected to a voltage quadrupler. With the 24V (AC) output wired to a voltage multiplier (4x), the unit should produce about 100 volts that can be used for the power supply for this Kirlian device.

The capacitors C1-C4 are wired in parallel as shown in **Figure 2.**

The transformer T1 is a high voltage auto-transformer. Auto as in self-inductive, not auto, like automobile. The T1 transformer has three wires coming out of it: two enamel wires and one green insulated wire from the center. The green insulated wire is the high voltage wire that connects to the discharge plate. The two enamel wires are the primary wires that are connected to switch SW1. There is no polarity with the enamel wires. So it doesn't matter which enamel wire is connected to the switch, and which is connected to the capacitors. Either way the circuit will function properly.

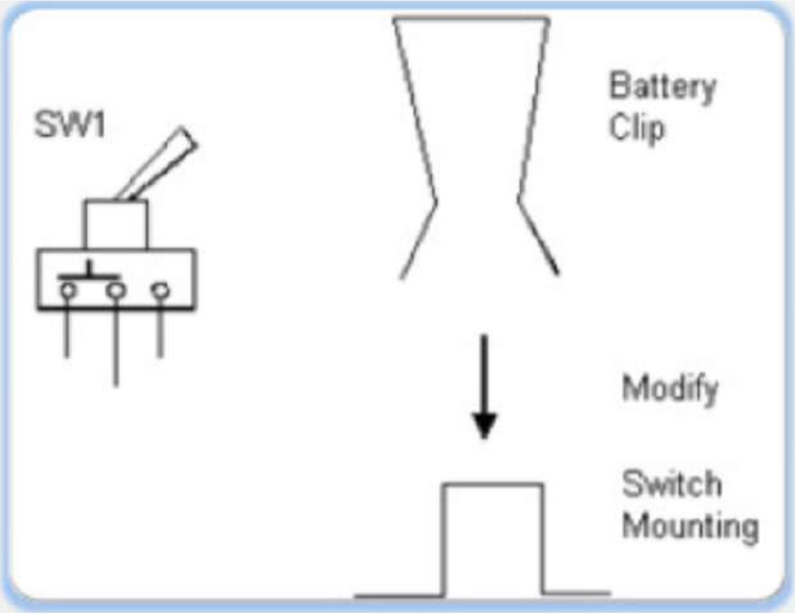


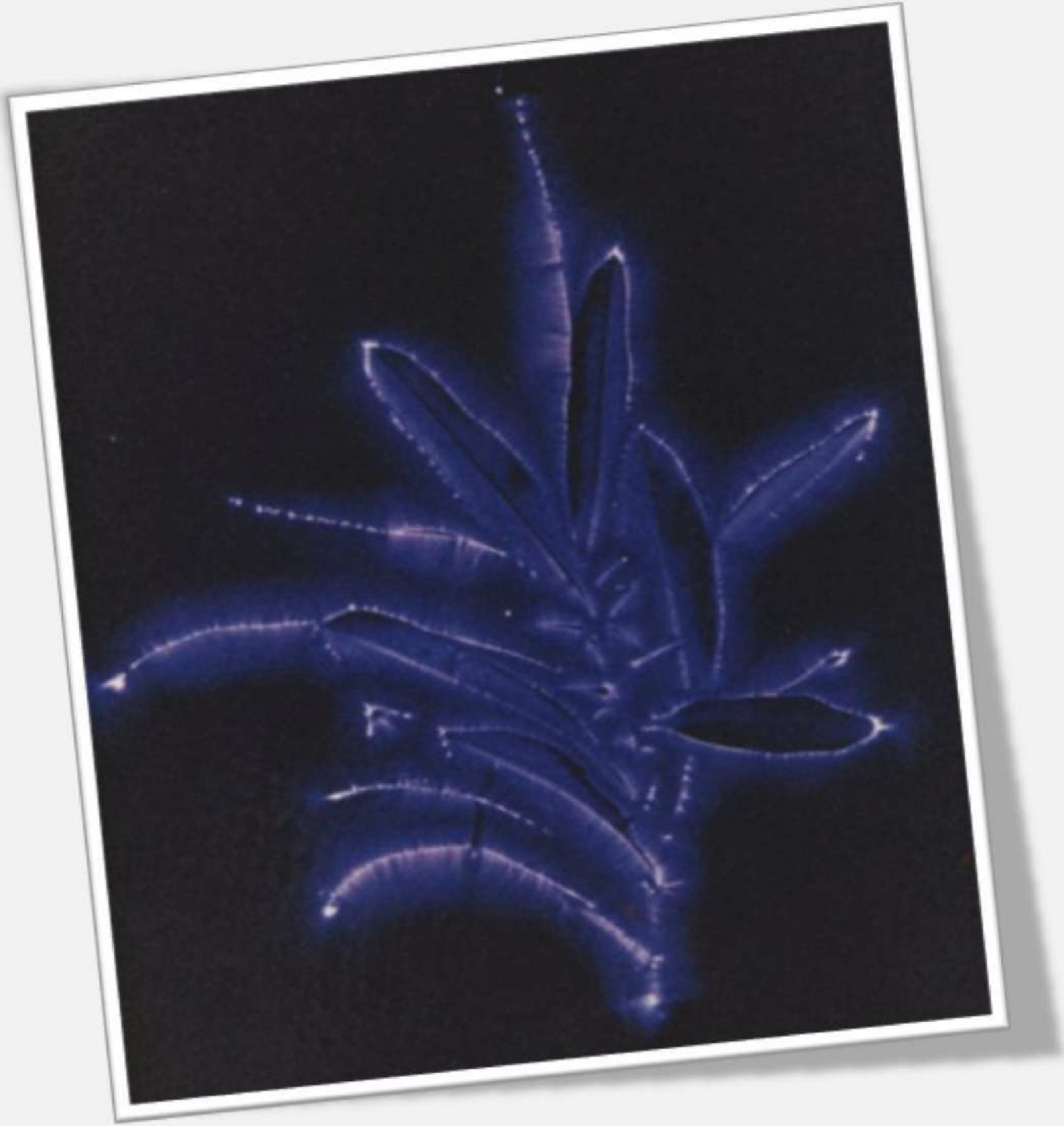
Figure 3

The toggle switch SW1 is a single pole double throw "momentary" contact. The switch has solder wires on the bottom, see **Figure 3.** This particular switch doesn't lock or stay in the opposite position. A built in spring immediately brings the switch back to its original position. To operate the device, toggle the switch on and off. When the switch is in the "on" position, it closes a current path to the HV transformer and capacitor bank.

The switch is important and must be wired correctly to obtain maximum benefit. Looking at the schematic shows how the switch appears in its resting state. In the resting state the batteries are disconnected from the circuit. This preserves the life of the batteries. Also the discharge path from the capacitors is closed. This prevents a potential shock hazard from being stored in the capacitors, to be unleashed on an unsuspecting experimenter.

To mount the switch to the board a metal battery clip (9-volt) is used, see parts list. The clip is bent to make a U shape as shown in **Figure 3.** The center hole in the clip is enlarged to fit the switch SW1. A hole is drilled in each ear of the clip to secure it to the board with two wood screws. The switch is secured to the clip, and then the assembly is secured to the board.

Below is an example of a photograph taken with the Kirlian device.



Quantum EMF Radiation Protectors
Biomeredian Aura Field Tests - Actual Bodys Bio Energic Shield

Wikipedia: *Aura -...an aura is a field of subtle, luminous radiation surrounding a person or object like the halo or aureola in religious art. The depiction of such an aura often connotes a person of particular power or holiness.[citation needed] It is said[by whom?] that all objects and all l iving things manifest such an aura.*

Kirlian Camera

Inventor Guy Coggins, with his Aura Camera 6000

Taking Aura Picture

Vortex BioShield
RADIATION PROTECTOR SHIELD

Large Aura Means Stronger Energy Field Balance to Fight EMF Interference Before and After

Vortex BioShield
Quantum EMF Radiation Harmonizer Shield
Amazingly Increases Bio Energy
Providing Energy Shield

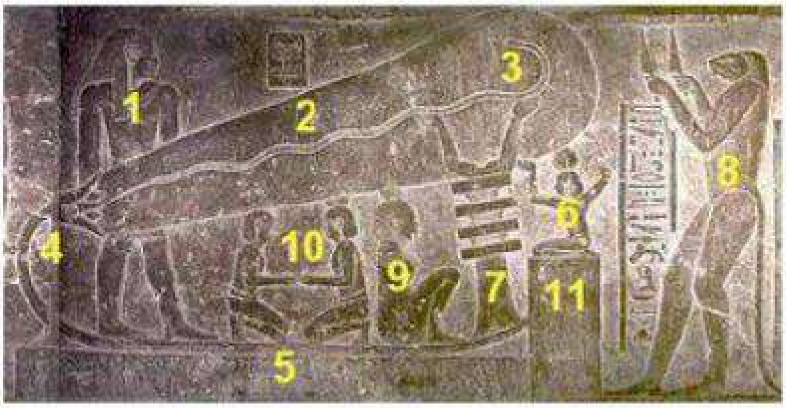
Above: Aura Before and After Using VortexBioShield

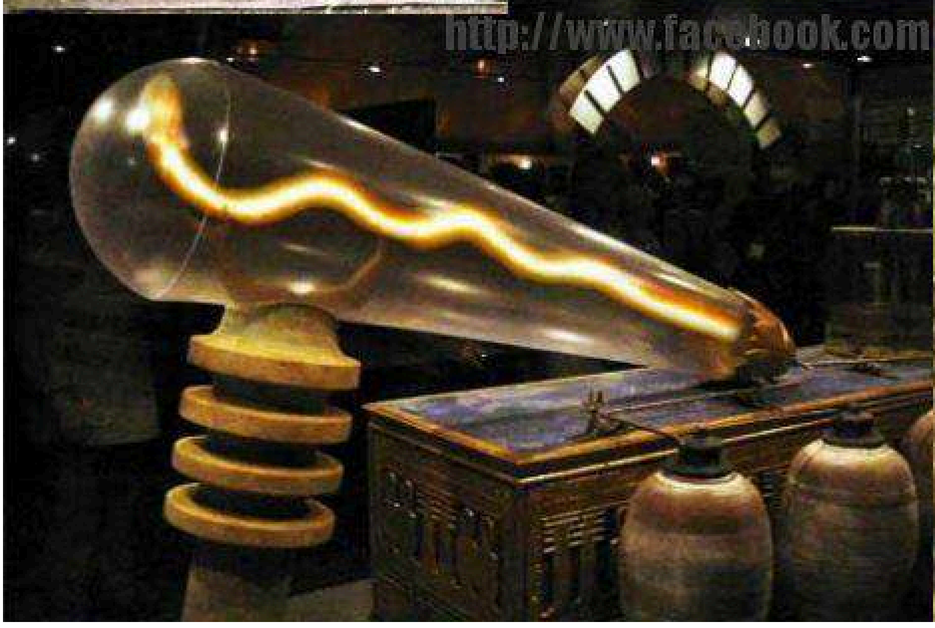
Before and After pictures showing change in Bio Energetic field when VortexBioShield is in use

The Human Aura in a healthy woman after a diagram by Walter John Kilner (1847–1920). The picture depicts Kilner's "inner and outer auras." Colours have been added for illustrative purposes and have no other significance.


AURA CAMERA

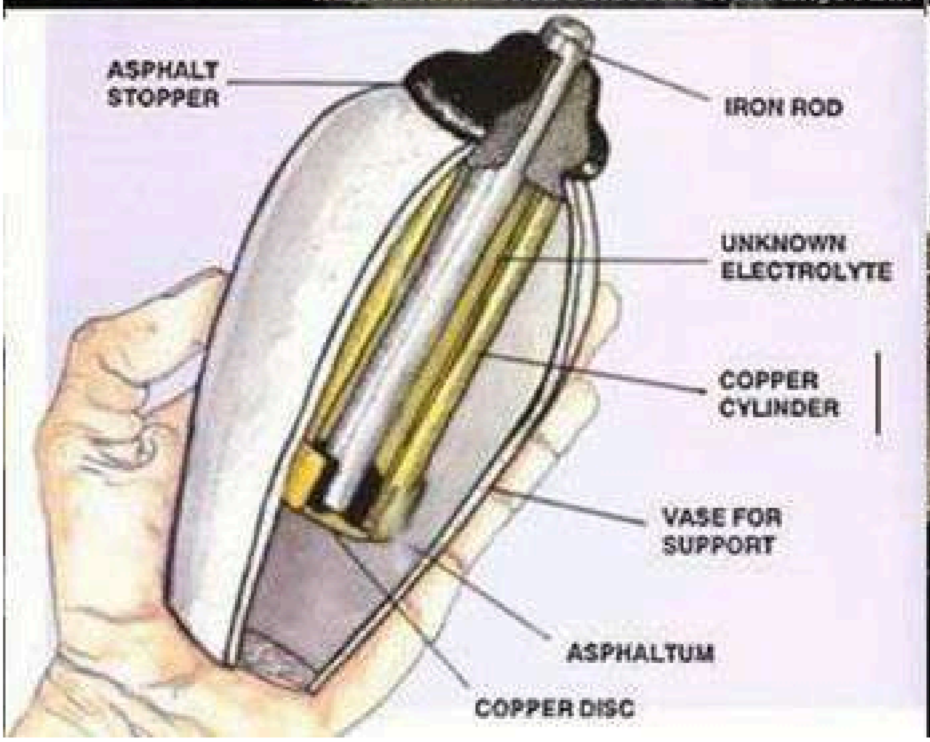
1. *Priest*
2. *ionized fumes*
3. *electric discharge (snake)*
4. *Lamp socket (Lotos)*
5. *Cable (Lotos stem)*
6. *Air god*
7. *Isolator (Djed-Pillar)*
8. *Light bringer Thot with knifes*
9. *Symbol for "current"*
10. *Inverse polarity (Haarpolarität +)*
11. *Energy storage (electrostatic Generator?)*

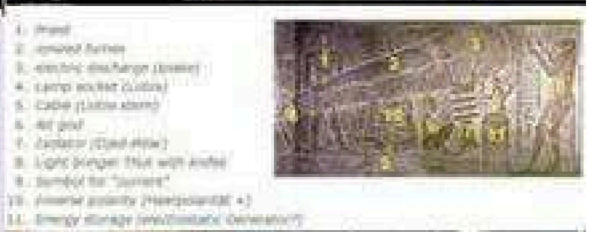


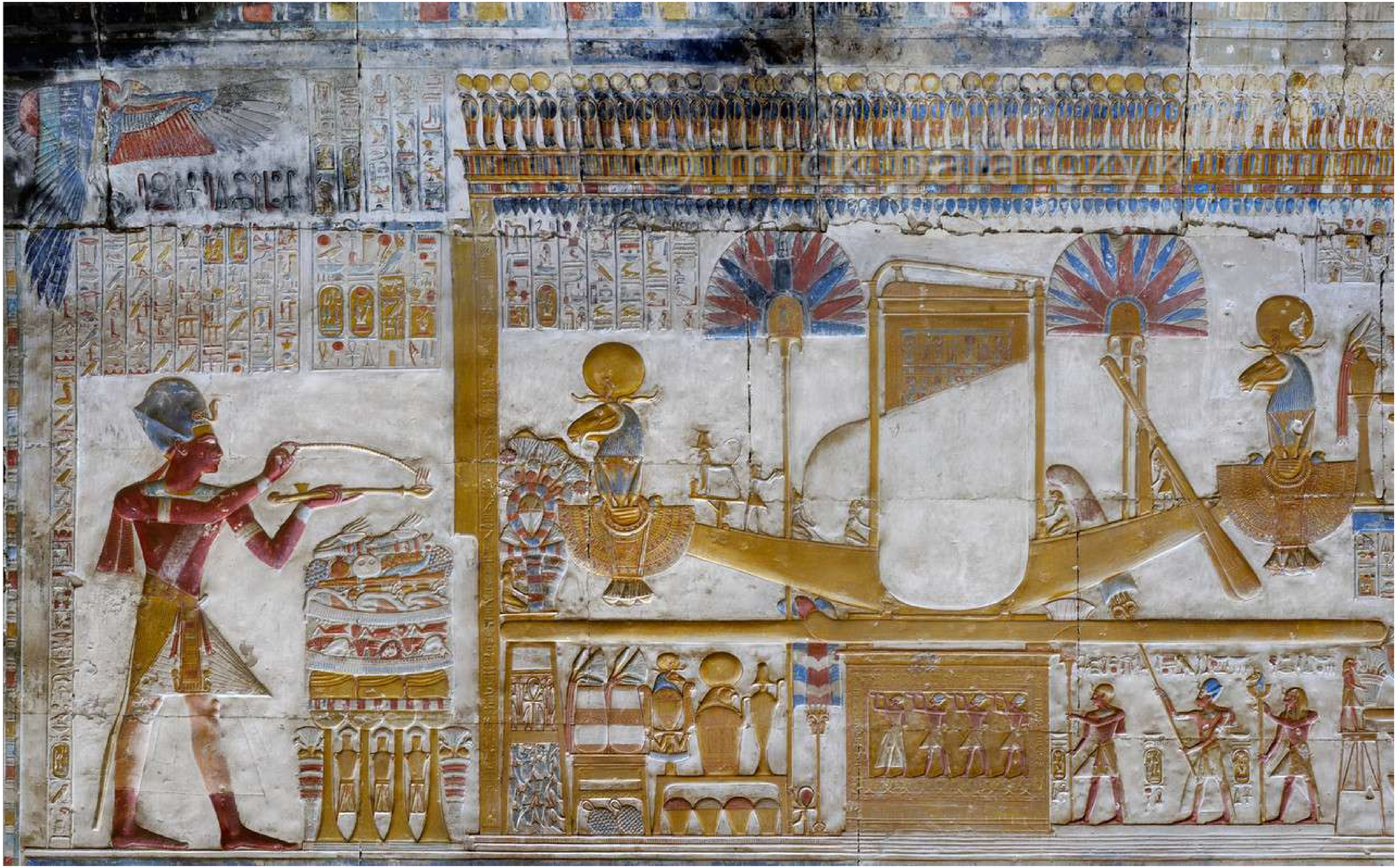


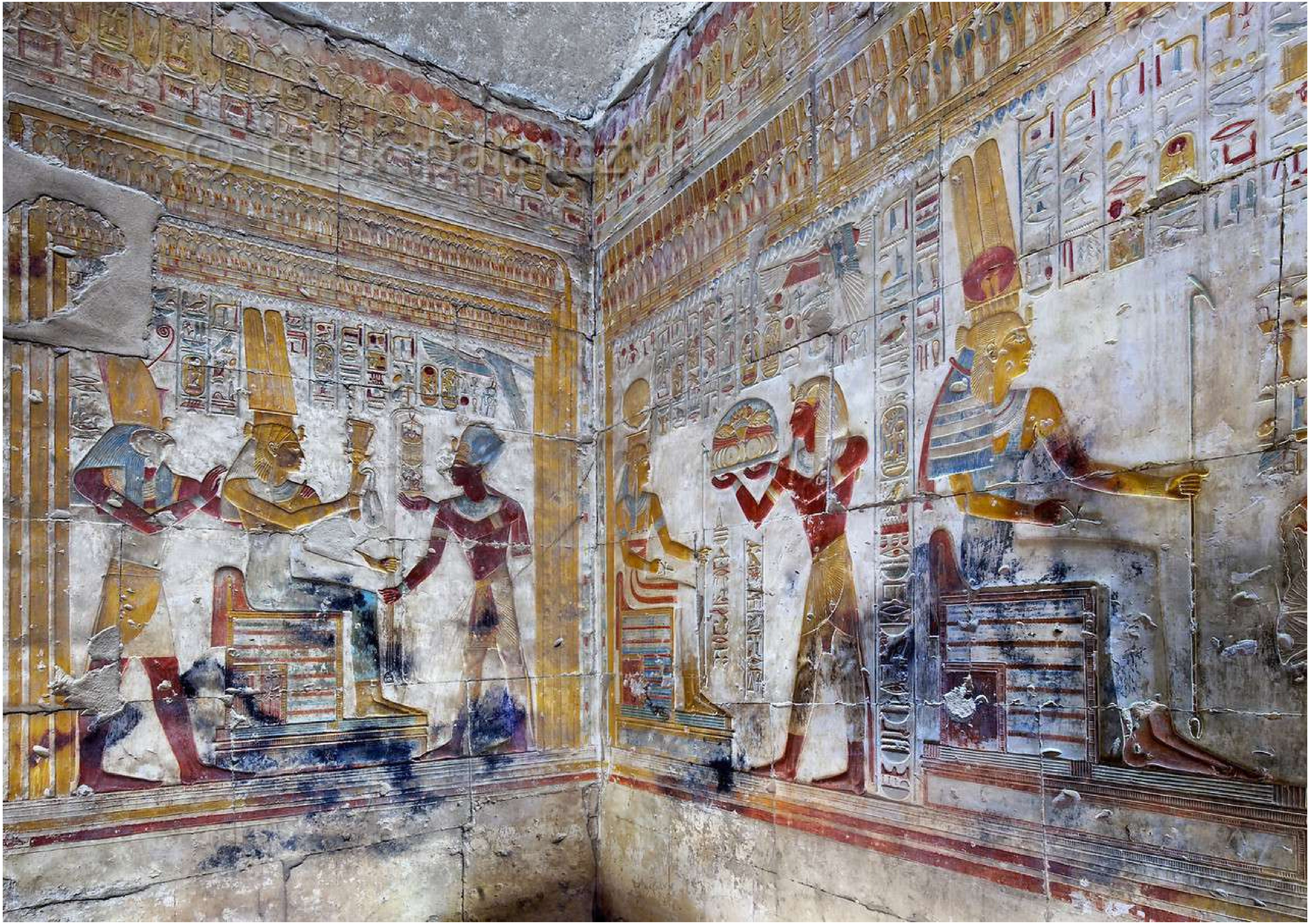

http://www.facebook.com/UfoKruhyV0bili


Baghdad Battery
Iron Head
Asphalt Seal
Clay Cast
13.5cm
Electrolyte Chamber
Internal Copper Cylinder


ASPHALT STOPPER
IRON ROD
UNKNOWN ELECTROLYTE
COPPER CYLINDER
VASE FOR SUPPORT
ASPHALTUM
COPPER DISC







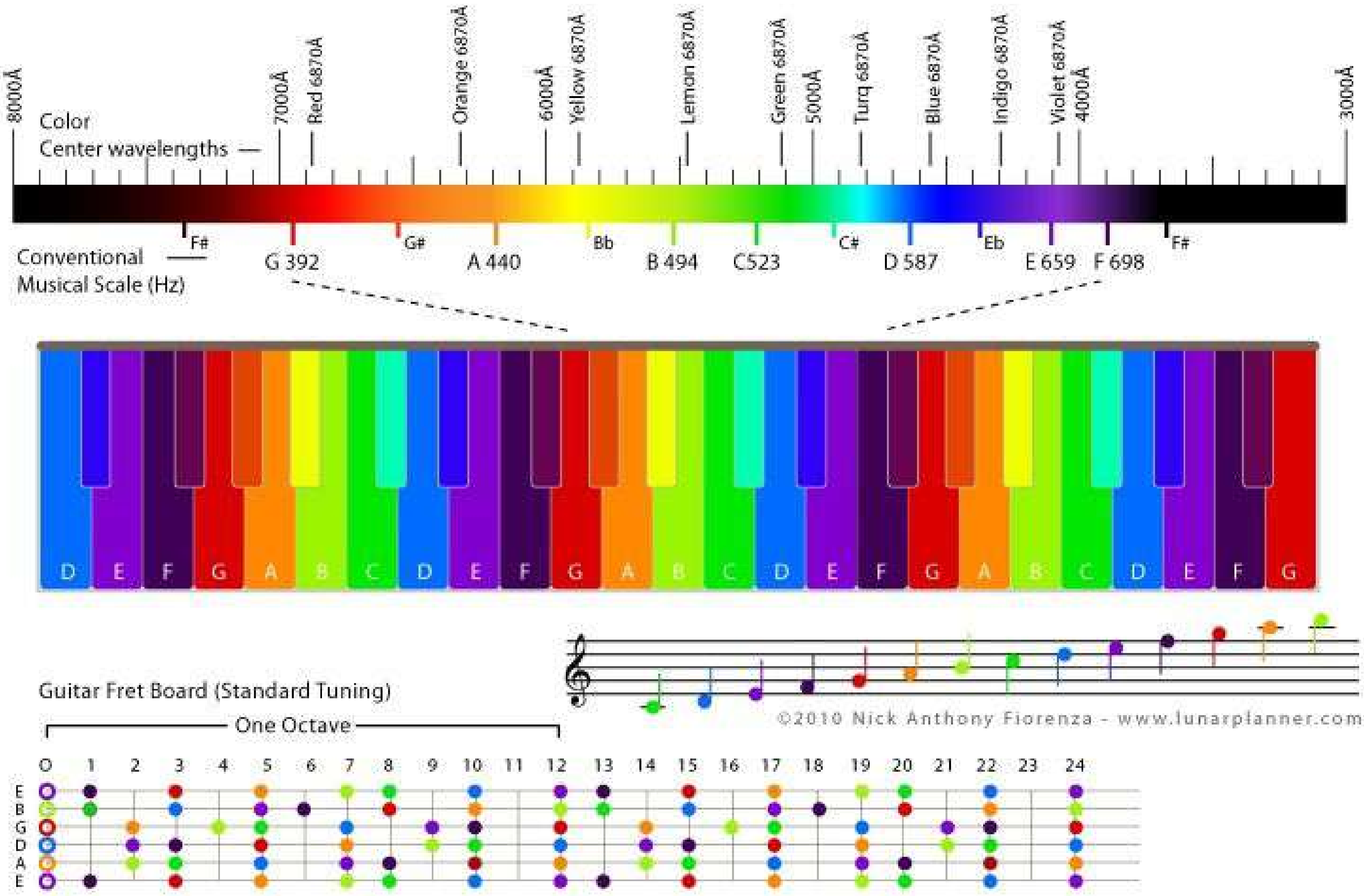


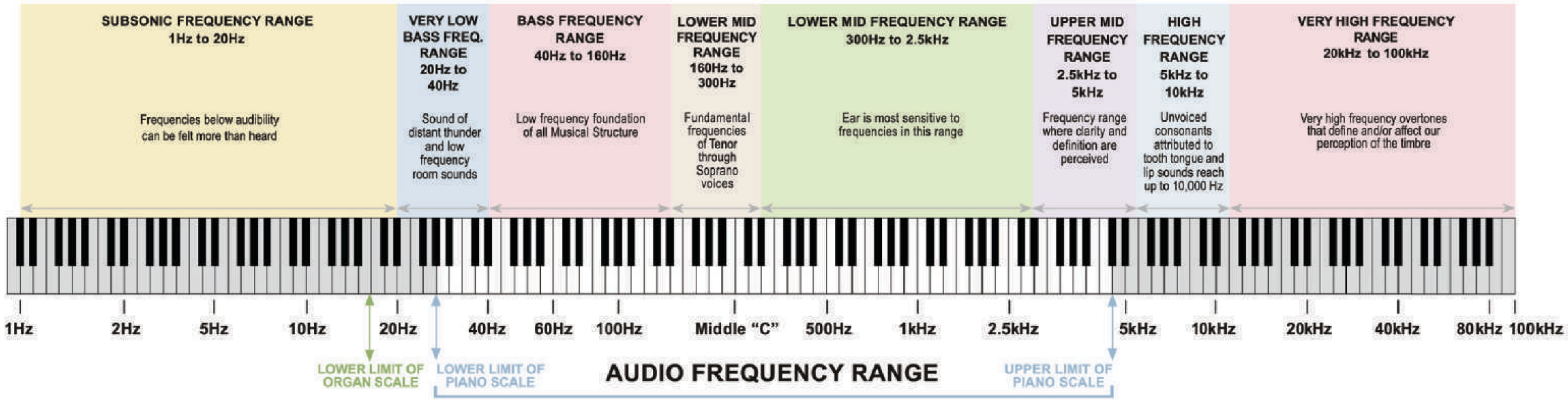
PETRIFIED FOREST
NATIONAL PARK
NATIONAL PARK SERVICE

Note	Hertz Lucy Tuned	Equivalent Wavelength*	Color
A	440	619.69	Orange-Yellow
A#	457.75	595.66	Yellow-Orange
Bb	472.27	577.34	Yellow
B	491.32	554.95	Yellow-Green
Cb	506.91	537.89	Green-Yellow
B#	511.13	533.44	Green
C	527.35	517.03	Green
C#	548.62	496.99	Green-Blue
Db	566.03	481.70	Blue-Green
D	588.86	463.03	Blue
D#	612.61	445.08	Blue-Violet
Eb	632.05	431.39	Violet-Blue
E	657.54	414.67	Violet
Fb	678.41	401.91	Ultra Violet
E#	684.06	398.59	Invisible Violet
F	705.77	772.66	Invisible Red
F#	734.23	742.71	Infra Red
Gb	757.53	719.86	Red
G	788.08	691.96	Red-Orange
G#	819.87	665.13	Orange-Red
Ab	845.89	644.67	Orange

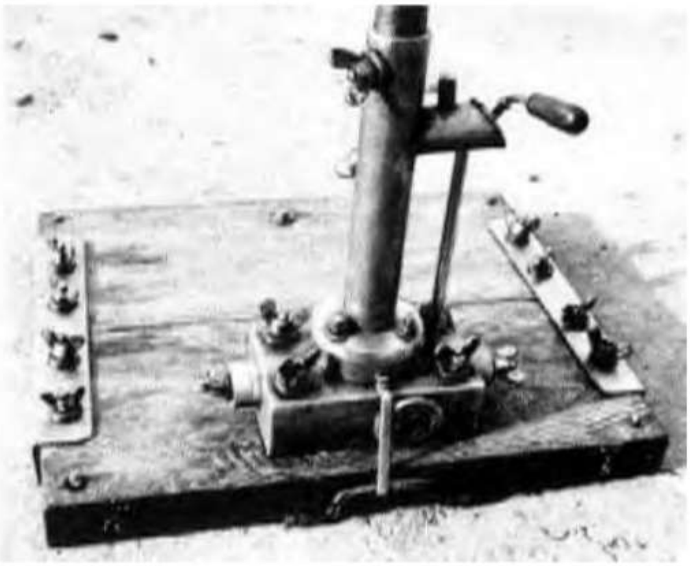
* Equivalent Wavelength = Angstroms / 10 Nanometers

Musical Notes-Color Correspondences in the Visible Spectrum of Light





SUBSONIC FREQUENCY RANGE
1Hz to 20Hz
Frequencies below audibility can be felt more than heard
VERY LOW BASS FREQ. RANGE
20Hz to 40Hz
Sound of distant thunder and low frequency room sounds
BASS FREQUENCY RANGE
40Hz to 160Hz
Low frequency foundation of all Musical Structure
LOWER MID FREQUENCY RANGE
160Hz to 300Hz
Fundamental frequencies of Tenor through Soprano voices
LOWER MID FREQUENCY RANGE
300Hz to 2.5kHz
Ear is most sensitive to frequencies in this range
UPPER MID FREQUENCY RANGE
2.5kHz to 5kHz
Frequency range where clarity and definition are perceived
HIGH FREQUENCY RANGE
5kHz to 10kHz
Unvoiced consonants attributed to tooth tongue and lip sounds reach up to 10,000 Hz
VERY HIGH FREQUENCY RANGE
20kHz to 100kHz
Very high frequency overtones that define and/or affect our perception of the timbre
1Hz
2Hz
5Hz
10Hz
20Hz
40Hz
60Hz
100Hz
Middle "C"
500Hz
1kHz
2.5kHz
5kHz
10kHz
20kHz
40kHz
80kHz
100kHz
LOWER LIMIT OF ORGAN SCALE
LOWER LIMIT OF PIANO SCALE
AUDIO FREQUENCY RANGE
UPPER LIMIT OF PIANO SCALE


Hovering Elytra - Grebennikov Video Replication Series

Non possiamo garantire che i filmati siano reali e non contraffatti. La qualità dei file [illegible] sono stati ripresi con un cellulare.

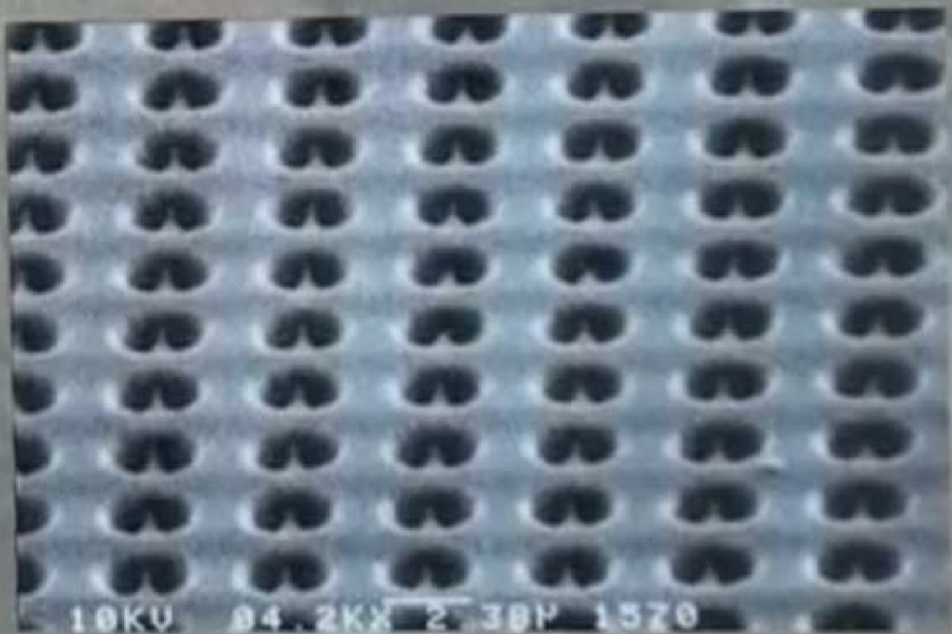
Sembra sia stato identificato un insetto le cui elitre manifestano gli stessi fenomeni riscontrati da Grebennikov.

Nelle foto è possibile vedere degli ingrandimenti della superficie delle elitre.

In un futuro report prenderemo in esame quanto affermato da un presunto testimone (aveva 7 anni quando assistette ad una dimostrazione dello stesso VSG), riportando lo schema costruttivo descritto da questa persona.

L'insetto sarebbe uno scarabeo d'acqua, forse un esemplare adulto di Ditisco.

Chi ha realizzato i video descrive il comportamento di questi insetti, che balzano fuori dall'acqua e prima di ricadere dentro prendono il volo.



Video Elitre 1

Non possiamo garantire che i filmati siano reali e non contraffatti. La qualità dei file mp4 pervenuti è pessima, probabilmente sono stati ripresi con un cellulare.

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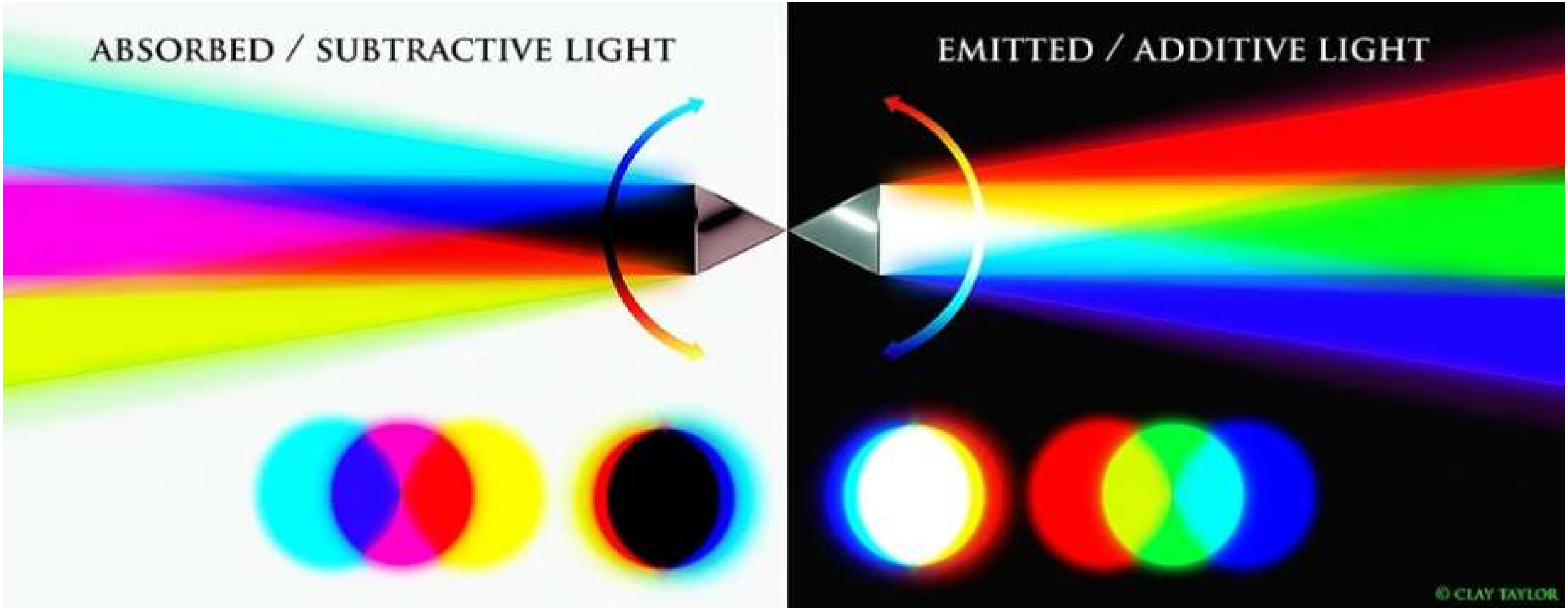
ABSORBED / SUBTRACTIVE LIGHT
EMITTED / ADDITIVE LIGHT
© CLAY TAYLOR

The "No Fibbin'" RF Field Strength Meter

The field strength meter is simple, effective and easy to construct. This project answers that age-old question—is anything radiating from this antenna?

The RF Signal Strength meter responding to my Kenwood TH-26AT transmitting on 147.900 MHz with 1 W, 2 feet away from the meter. The sensitivity control is set at mid range.

This low budget homebrew project will pay big dividends in making sure you get the best signal out of your antenna system. And it needs no batteries.

In the 25 years I have spent working as a telecommunications technician, one of the most useful, yet simple, pieces of test gear I have used is the RF field strength meter. Its only job is to give you a relative signal strength reading of near field RF signal radiated from a transmitting antenna. After the bench testing is done and antenna VSWR is measured, nothing else will give you a better idea of transmitter and antenna performance than the RF field strength meter.

Any ham who has a 146 MHz or a 440 MHz hand-held transceiver is at the mercy of the sales brochures when choosing the best flexible [rubber duck] antenna for your radio. How many times have you *not* been able to work a repeater or work simplex nearly as well as someone else who has a similar radio or one with even less RF output power than yours? How can you tell if the wire inside a flexible antenna has broken or if the antenna doesn't radiate well? The RF field strength meter will soon reveal how well (or how poorly) your antenna is radiating. The meter is great for determining the front to back ratio and forward gain of a Yagi or quad. You can also compare relative signal strength between a ¼, ½ and ⅝ wavelength antenna on your vehicle. You might be surprised at the results!

The "No Fibbin'" field strength meter can be made using parts that many hams already have around the shack. The best results will be obtained using germanium or Schottky small signal diodes, a metal enclosure and an analog meter movement (which has a low full-scale deflection current). The other component values are not critical; close is good enough. All the parts can be mounted on a small pre-punched PC board or they can be wired point-to-point without a PC board. In either case, keep the component leads as short as pos-

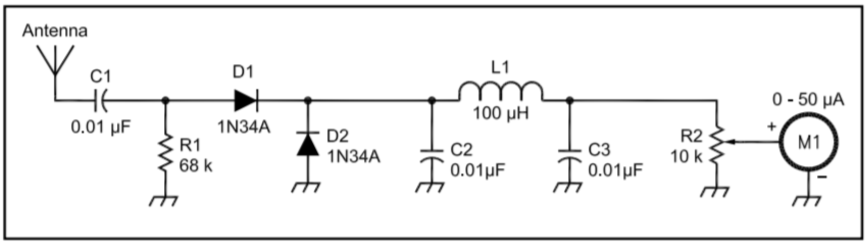

Figure 1—Schematic diagram of the signal strength meter. RS = Radio Shack (www.radioshack.com/).

C1-C3—0.01 µF capacitors (RS 272-1051 or equiv).
D1, D2—1N34A diodes (RS 276-1123).
L1—100 µH inductor (RS 273-102).
M1—Analog meter, 50 µA (RS 910-0360).
R2—Sensitivity control potentiometer, 10 kΩ (RS 271-1715).
Antenna—BNC female chassis mount socket. Antenna selection should match the frequency band for VHF and UHF. A random length of wire might work best for close field measurements on HF to 40 meters. Metal box enclosure is mandatory.

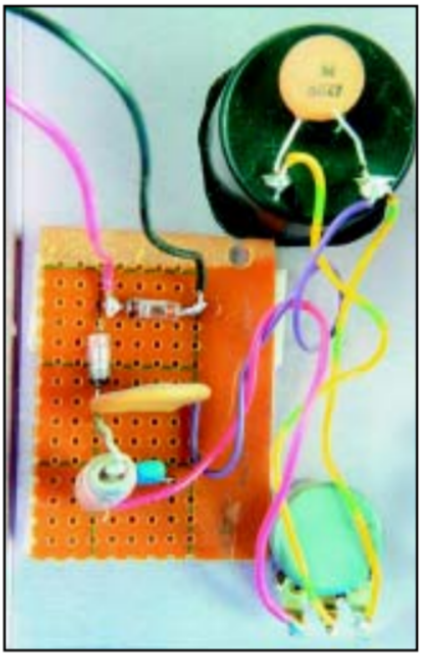

Figure 2—Close up of the circuit board.

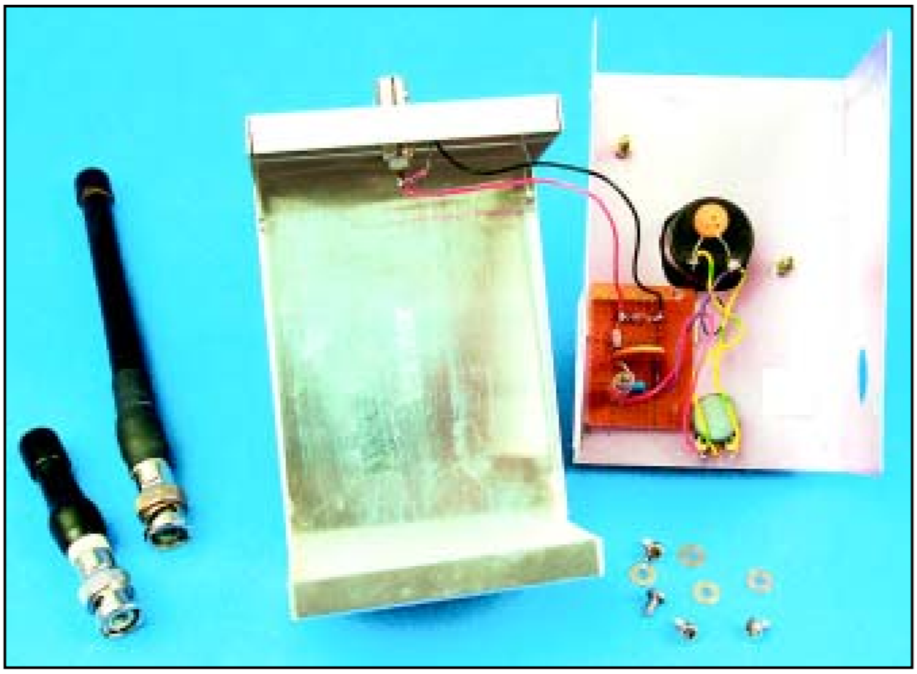

Figure 3—The case, circuit board and antennas for the field strength meter.

FEEDBACK

◊ An error appears in Figure 1 of "The 'No Fibbin' RF Field Strength Meter" (Aug 2002 *QST*, p 28). The correct way to wire D2 is the anode to ground and the cathode to the anode of D1 (also the junction of R1 and D1). As shown in the photos, C1 is optional and an additional 0.01 µF bypass capacitor can be installed across the meter movement.—*John Noakes, VE7NI*

STRAYS

MILITARY RADIO COLLECTORS TO MEET

◊ The Military Radio Collectors Association will hold its third annual meet at the West End Fairgrounds, Gilbert, Pennsylvania, September 6-8, 2002. Hours are 0800 to 1700 local time. Activities include equipment displays, on the air operation, formal presentations and a swapmeet. For more information, see **www.milradio.org/** or contact Pete Hamersma, WB2JWU, PO Box 467, Holderness, NH 03245, e-mail **pehamers@worldpath.net**.

Previous • Next Strays

FEEDBACK

◊ In the item concerning magnetic headings in "The Doctor is IN," *QST*, Jul 2002, p 47, the Doctor reversed his plus and minus signs. The first paragraph should read:

The ARRL maps are calibrated in True degrees, referred to True North ("straight up" on the maps). Magnetic headings are calculated by taking the True headings and subtracting the Magnetic Declination (also called the Magnetic Variation in nautical applications). For example, if the map shows a variation (declination) of 12° east, this means that Magnetic North is 12° east of "straight up." So, a heading of 45° True is equivalent to a magnetic heading of 45° – 12° east = 33° magnetic. For a westerly variation (for example 6° west), add the value for variation. Thus, 45° True + 6° west = 51° magnetic. An old mariner's ditty, "east is least; west is best," can help you remember that you subtract an easterly declination or add a westerly declination to convert True to Magnetic.

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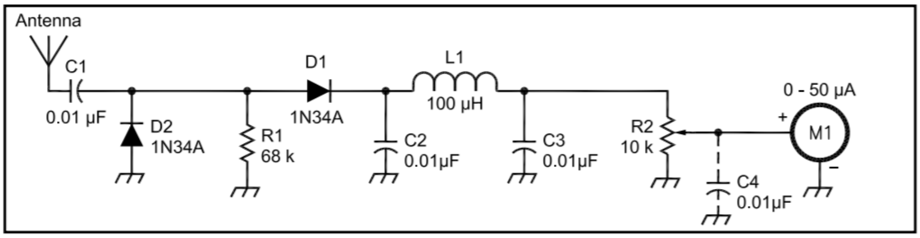
Previous • Next Feedback



Revised Figure 1

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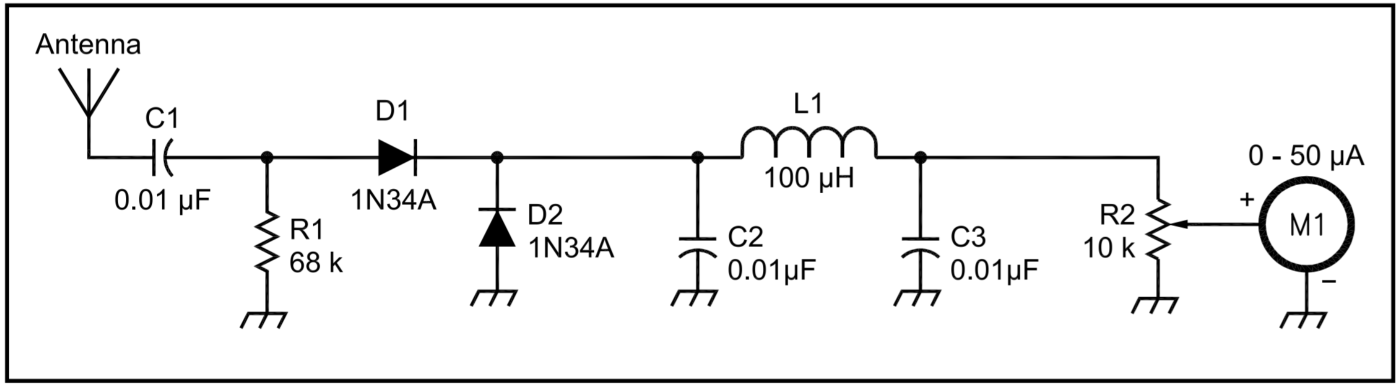

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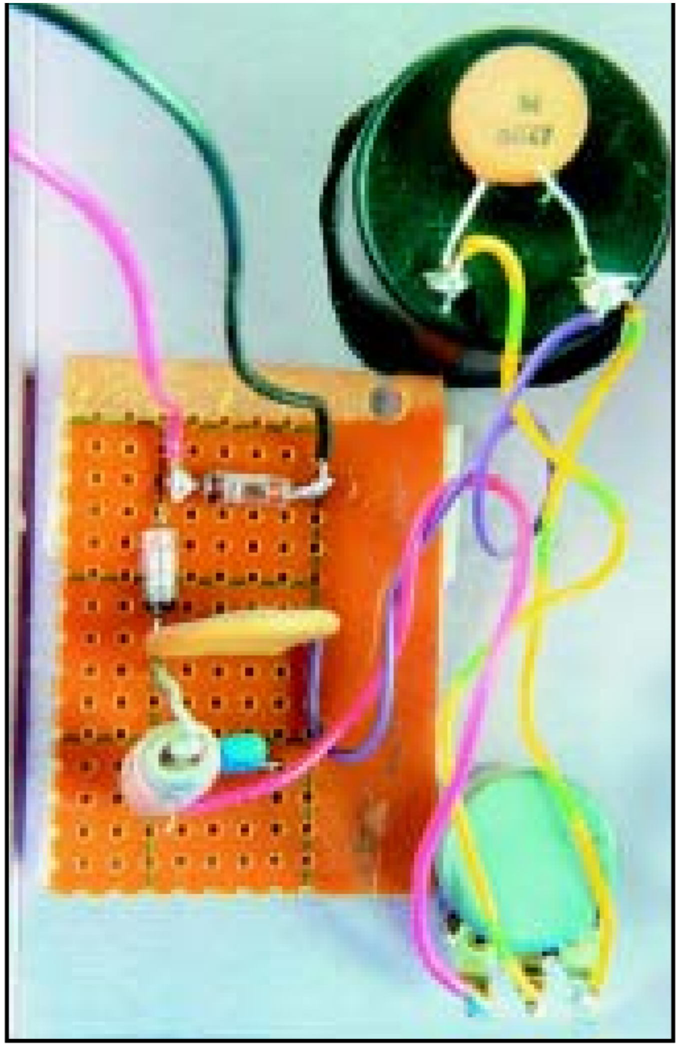

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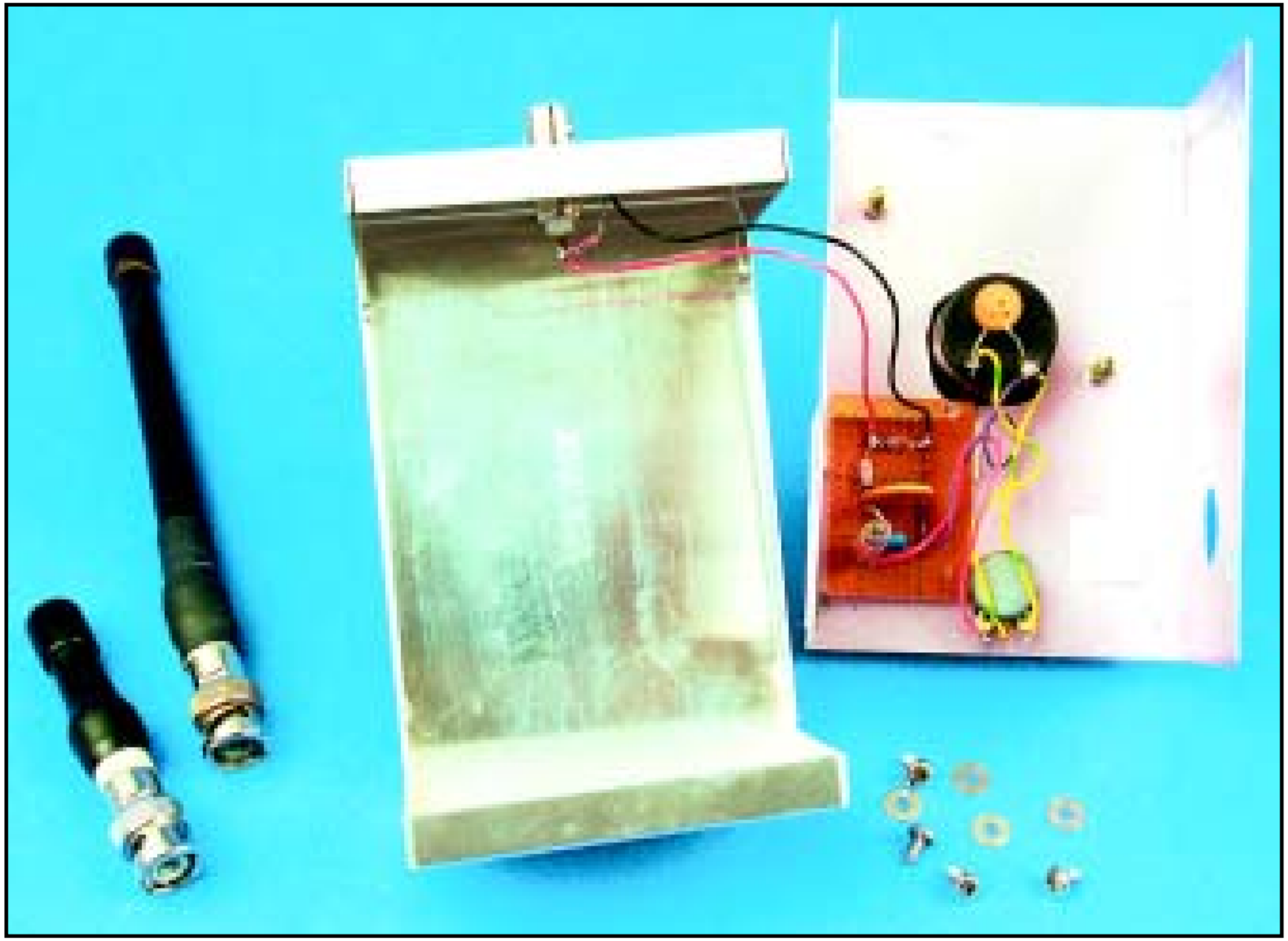

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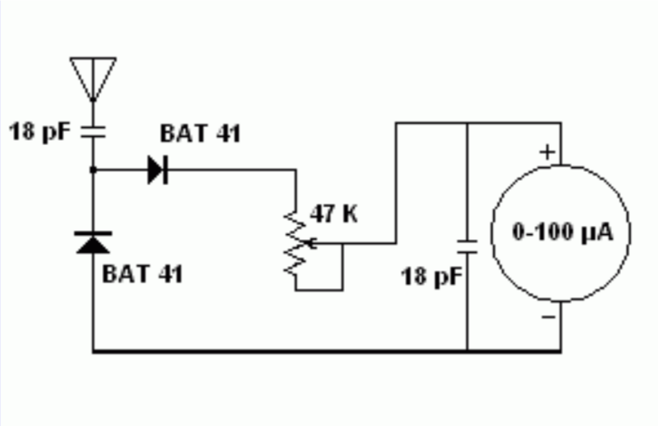
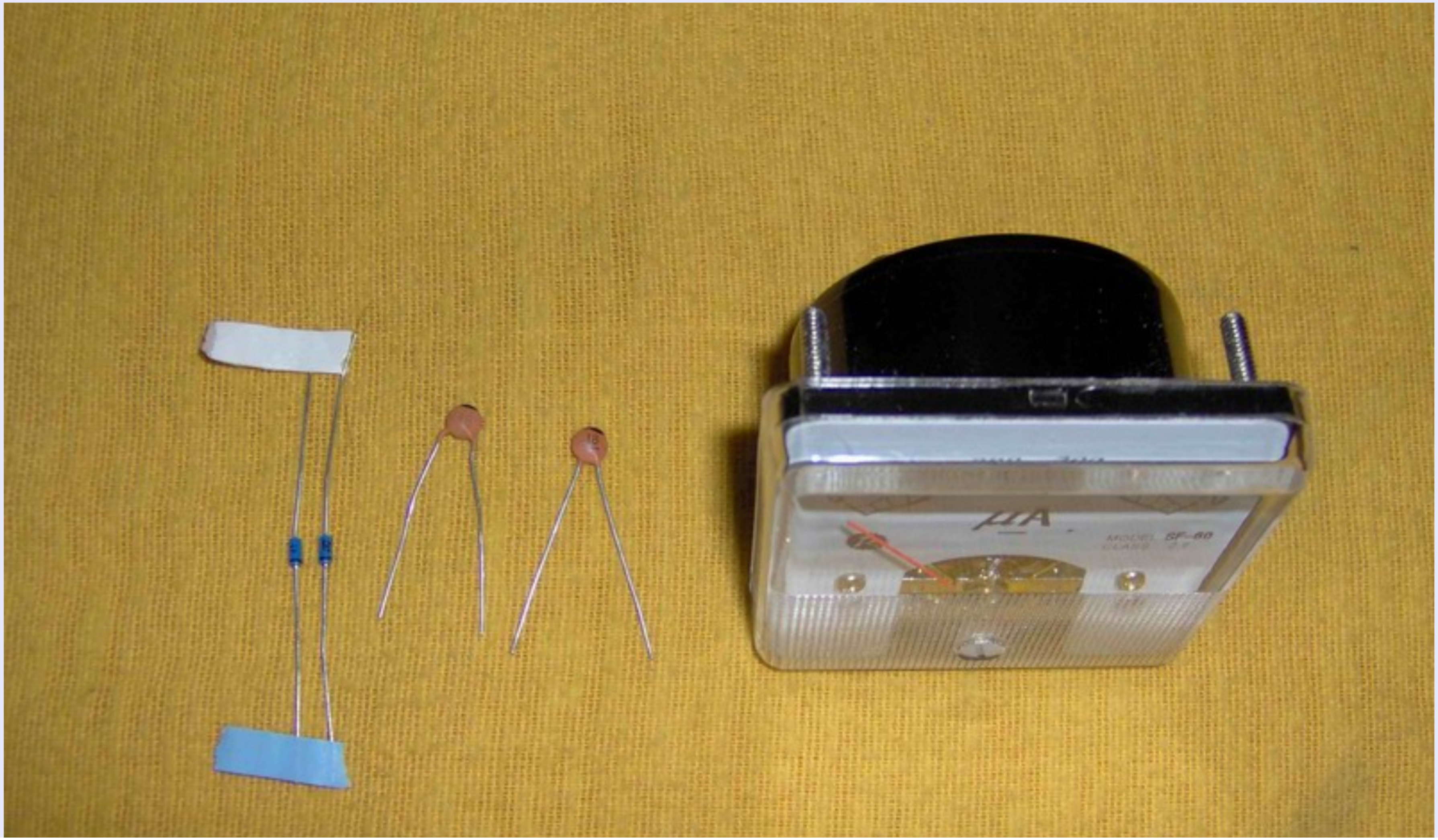
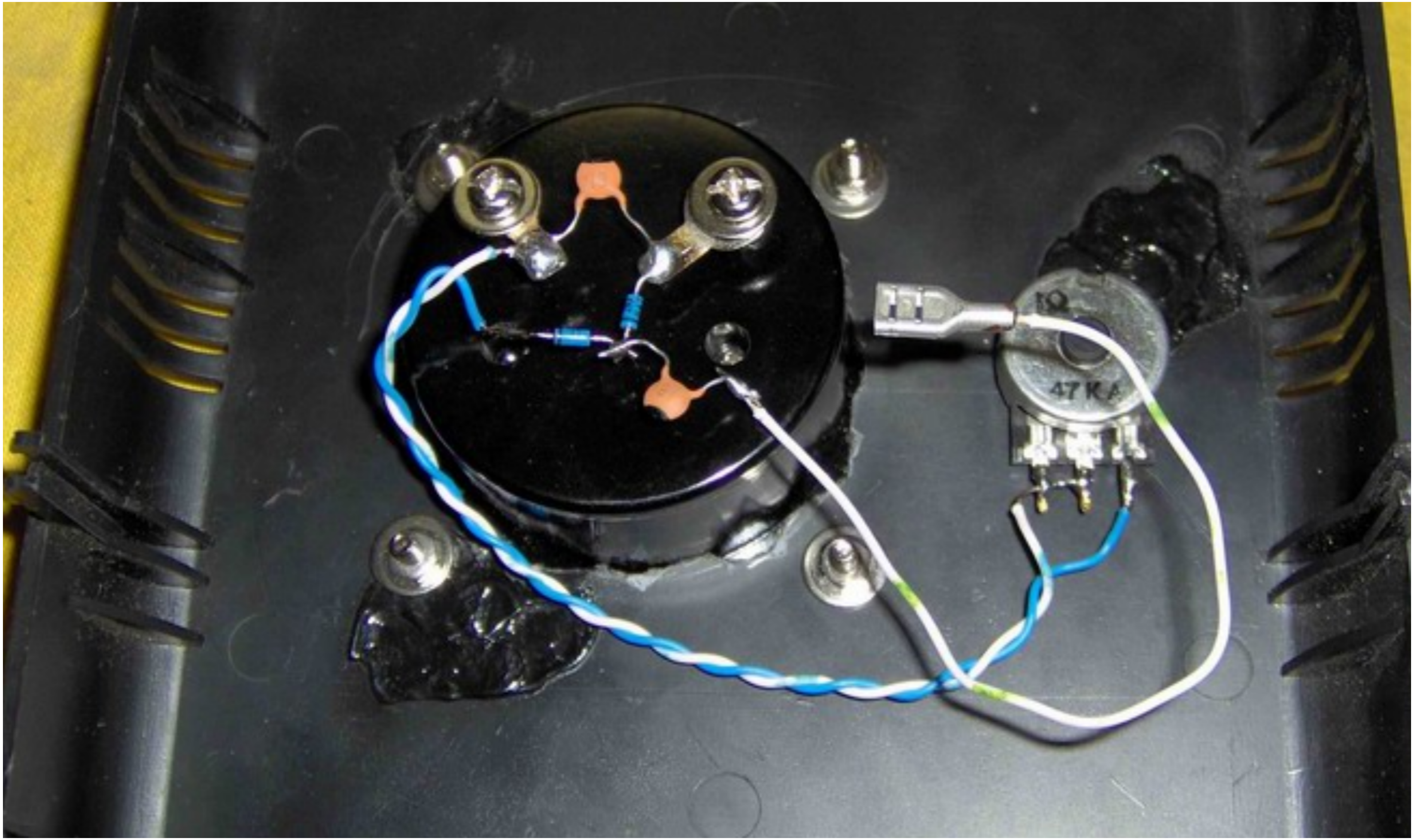
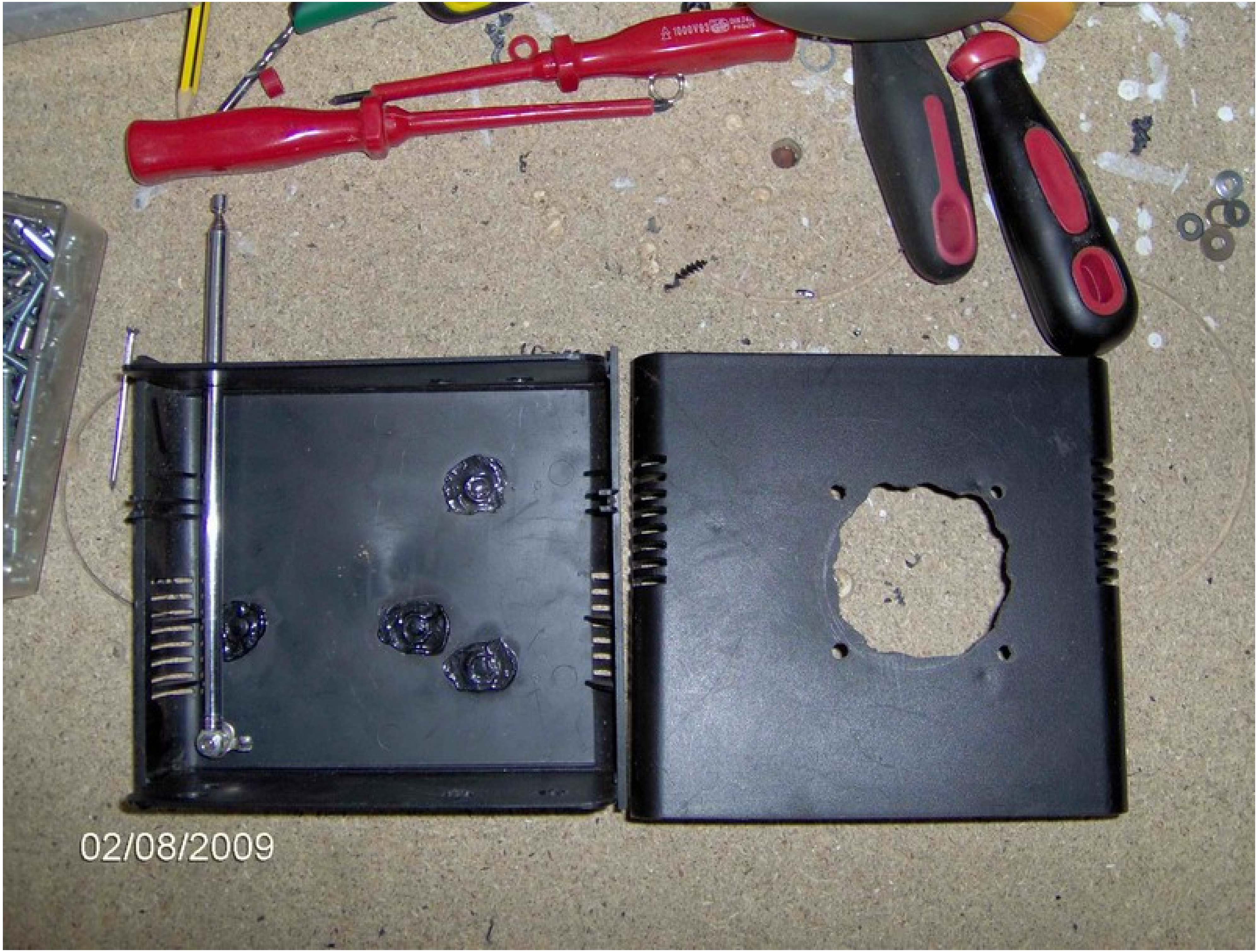

18 pF
BAT 41
47 K
0-100 µA
BAT 41
18 pF
+
−


µA

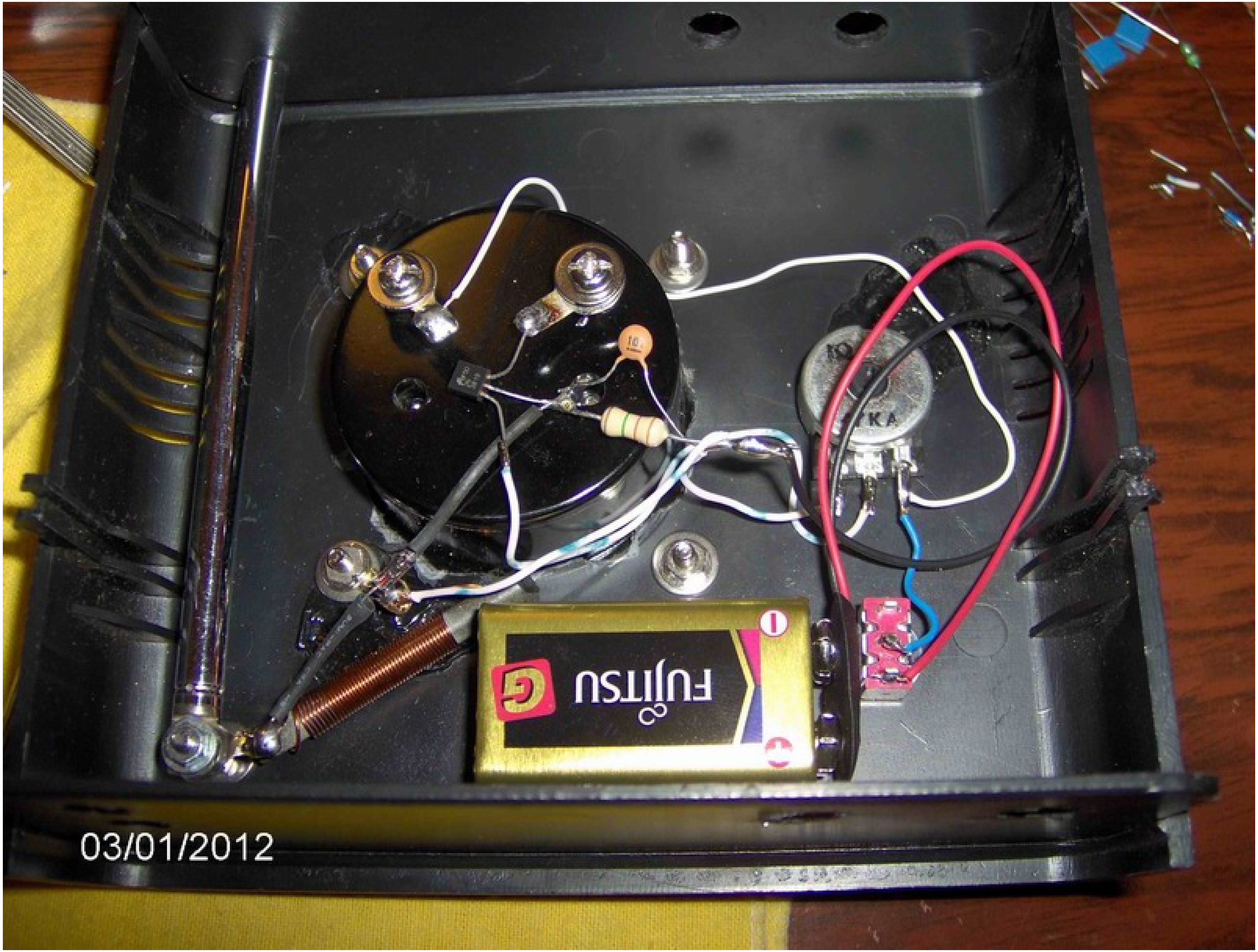

47 K


02/08/2009


ALKALINE
0
20
40
60
80
100
µA
03/08/2009


FUJITSU
G
03/01/2012


L = 1.82 uH
03/01/2012


FUJITSU
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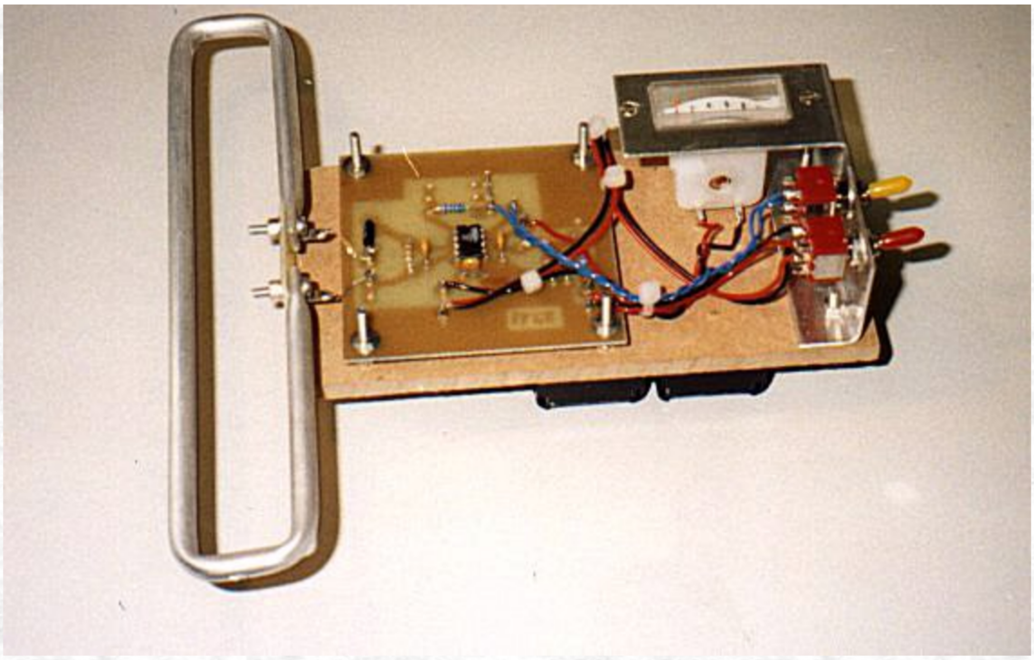
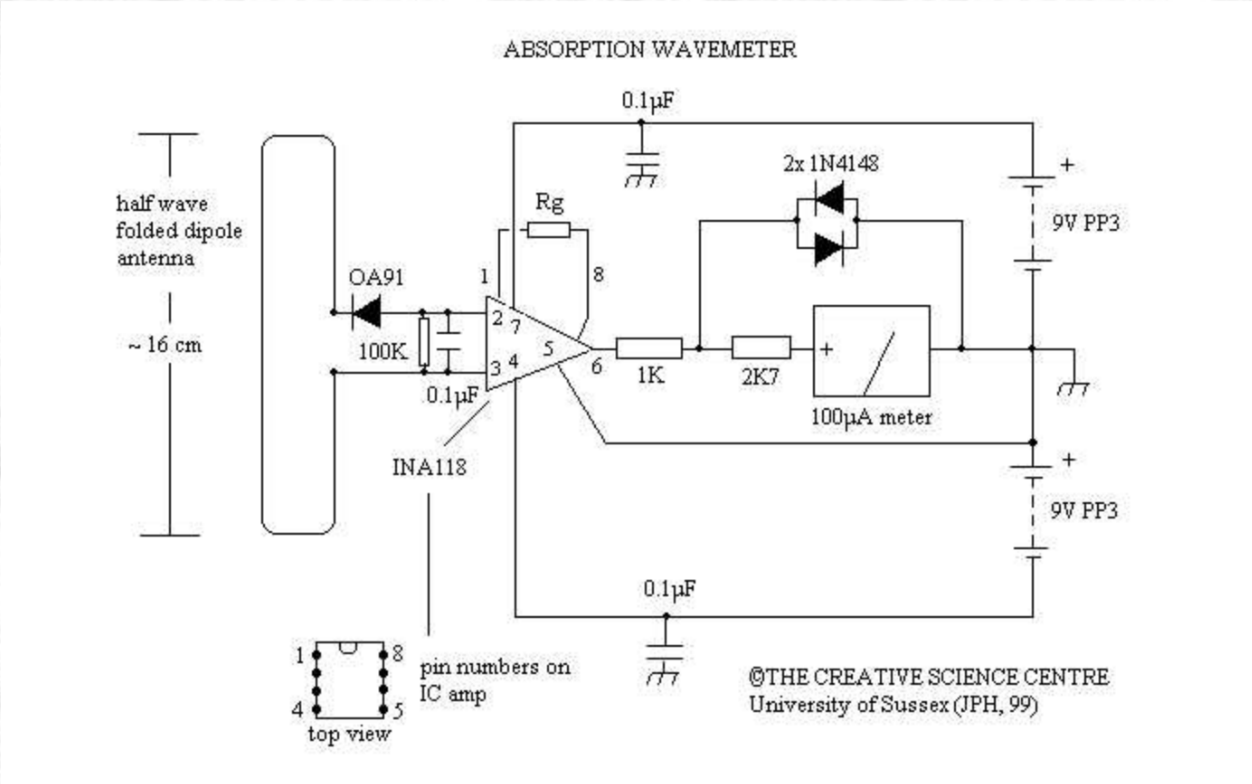
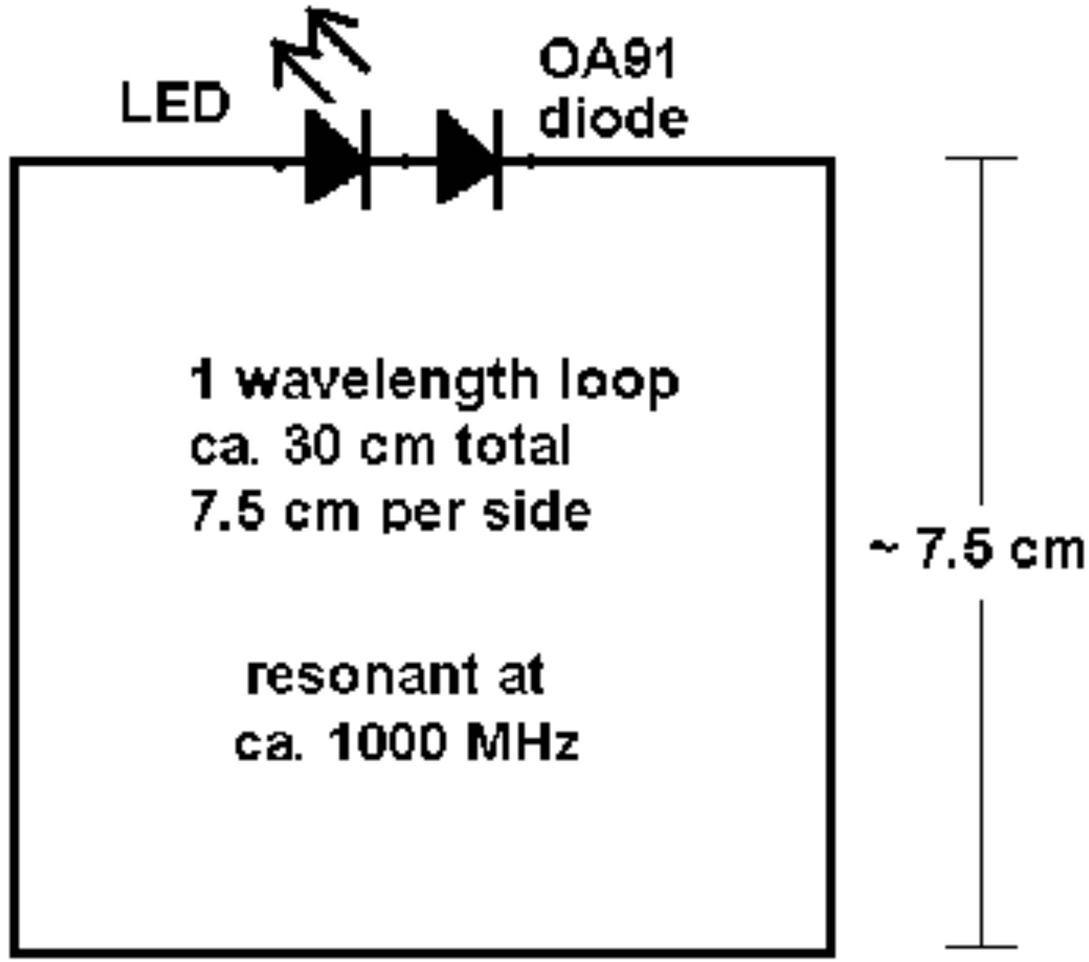
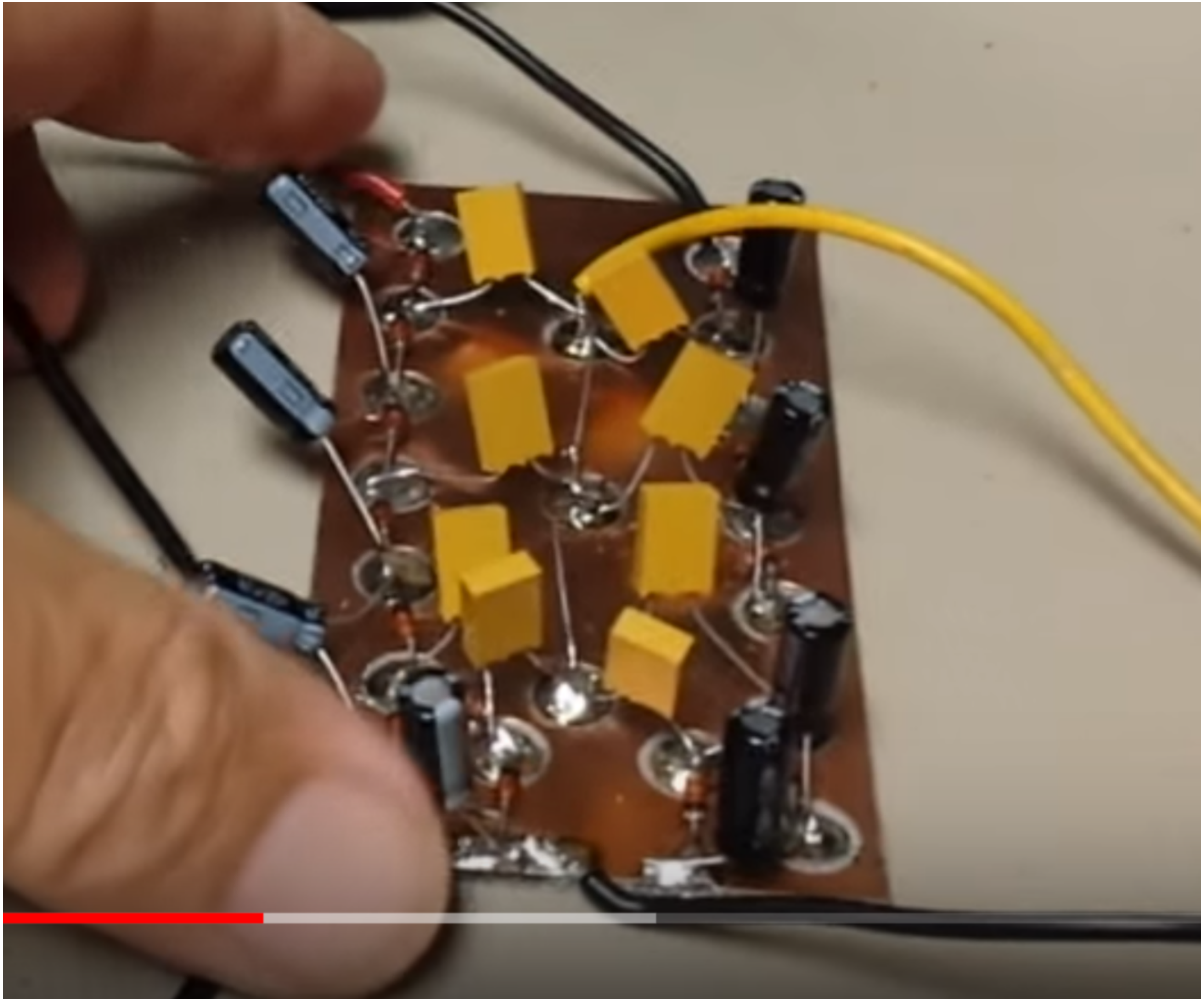
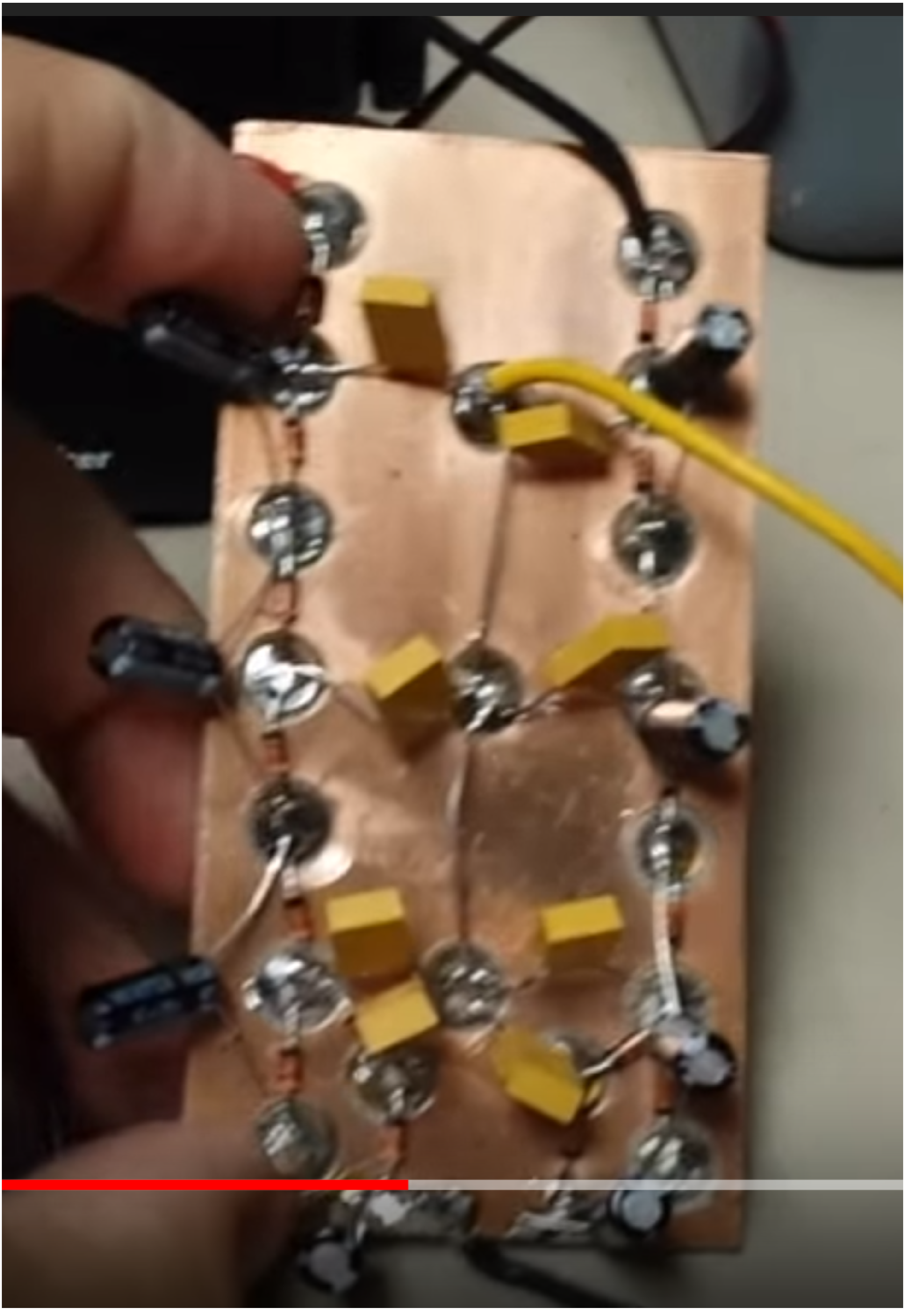


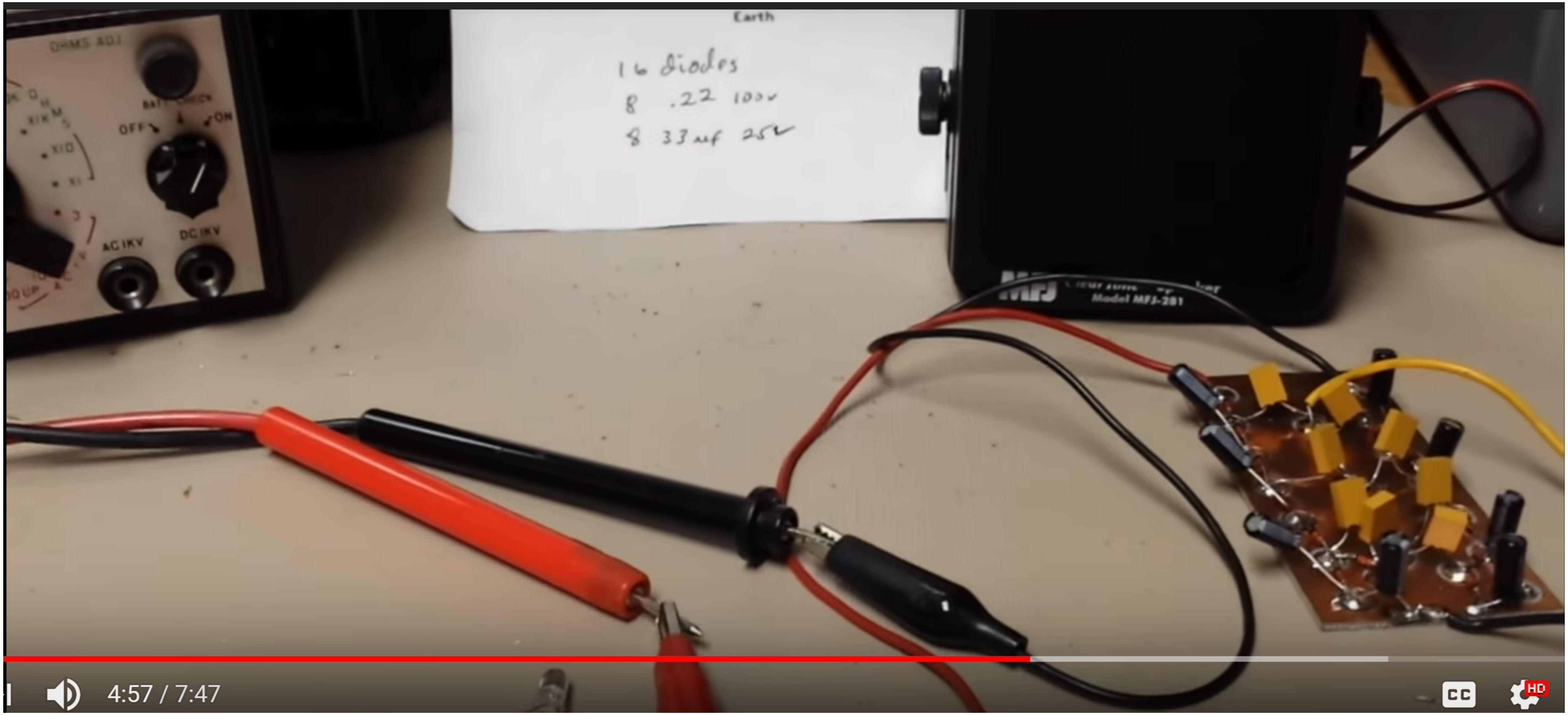
h of radio emissions and so this instrument is an essential item for investigating the mobile phones. In principle an absorption met
l so measurements can only be made very close to the transmitter. The circuit described below incorporates an amplifier whose gai

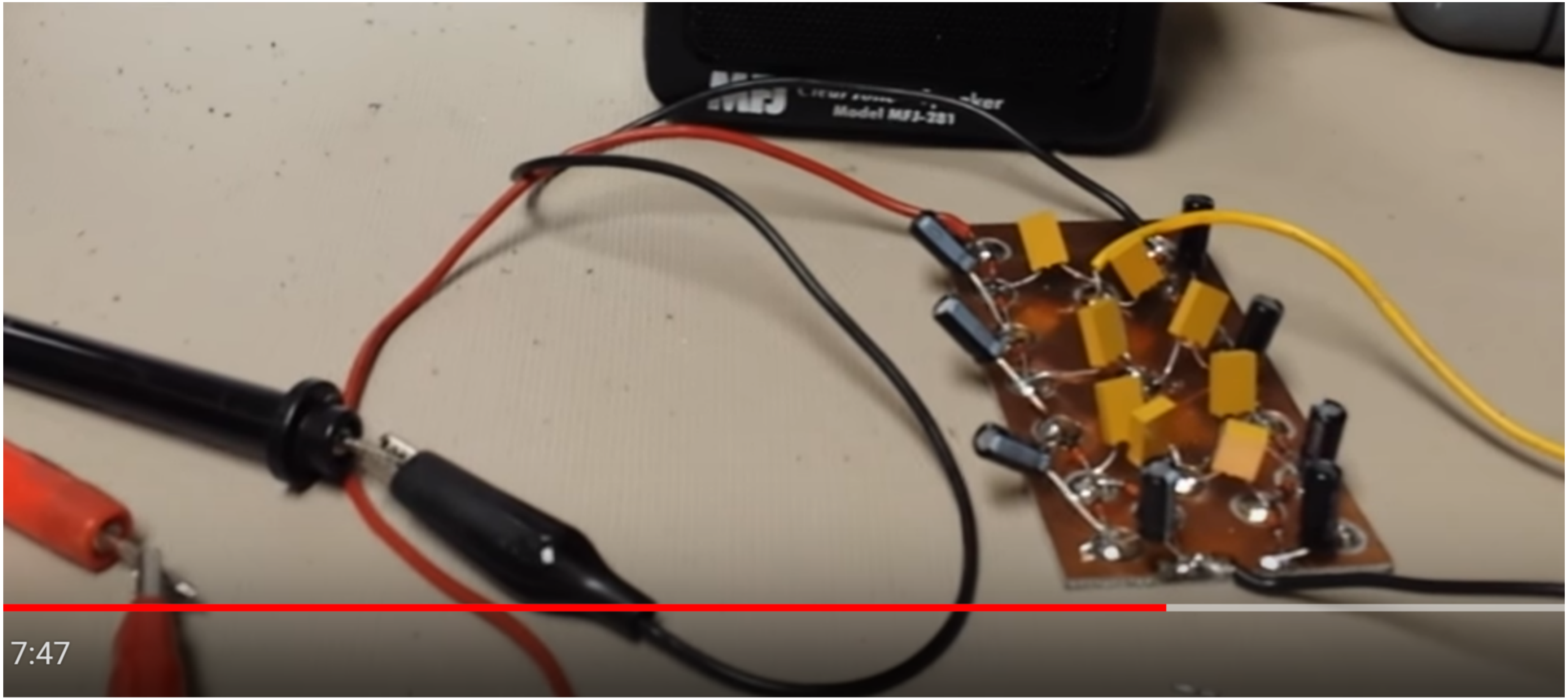



LED
OA91
diode
1 wavelength loop
ca. 30 cm total
7.5 cm per side
resonant at
ca. 1000 MHz
~ 7.5 cm






Earth
16 diodes
8 .22 100v
8 33uf 25v
OHMS ADJ
BATT CHECK
OFF
ON
AC IKV
DC IKV
Model MFJ-281
4:57 / 7:47


Model MFJ-281
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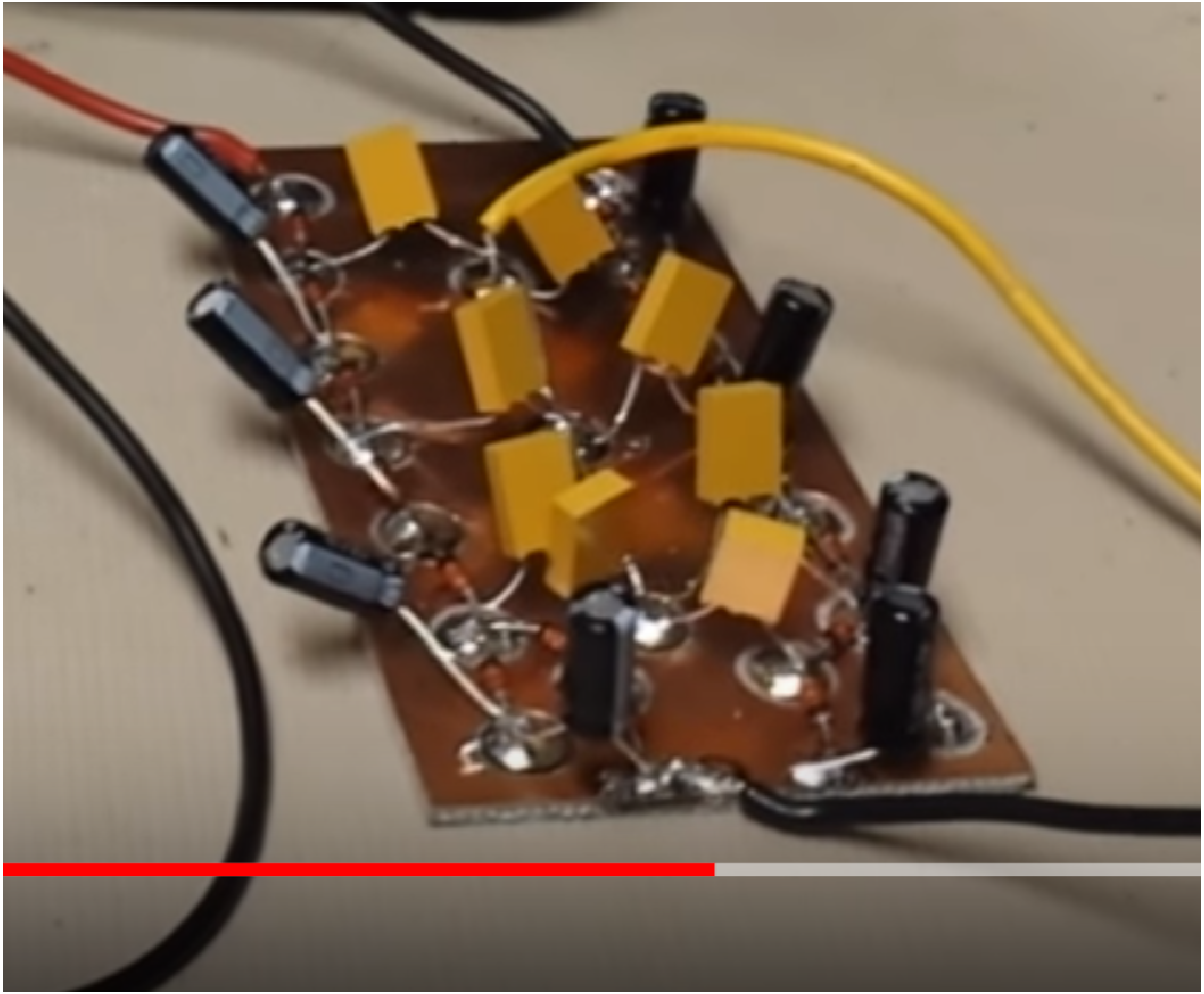
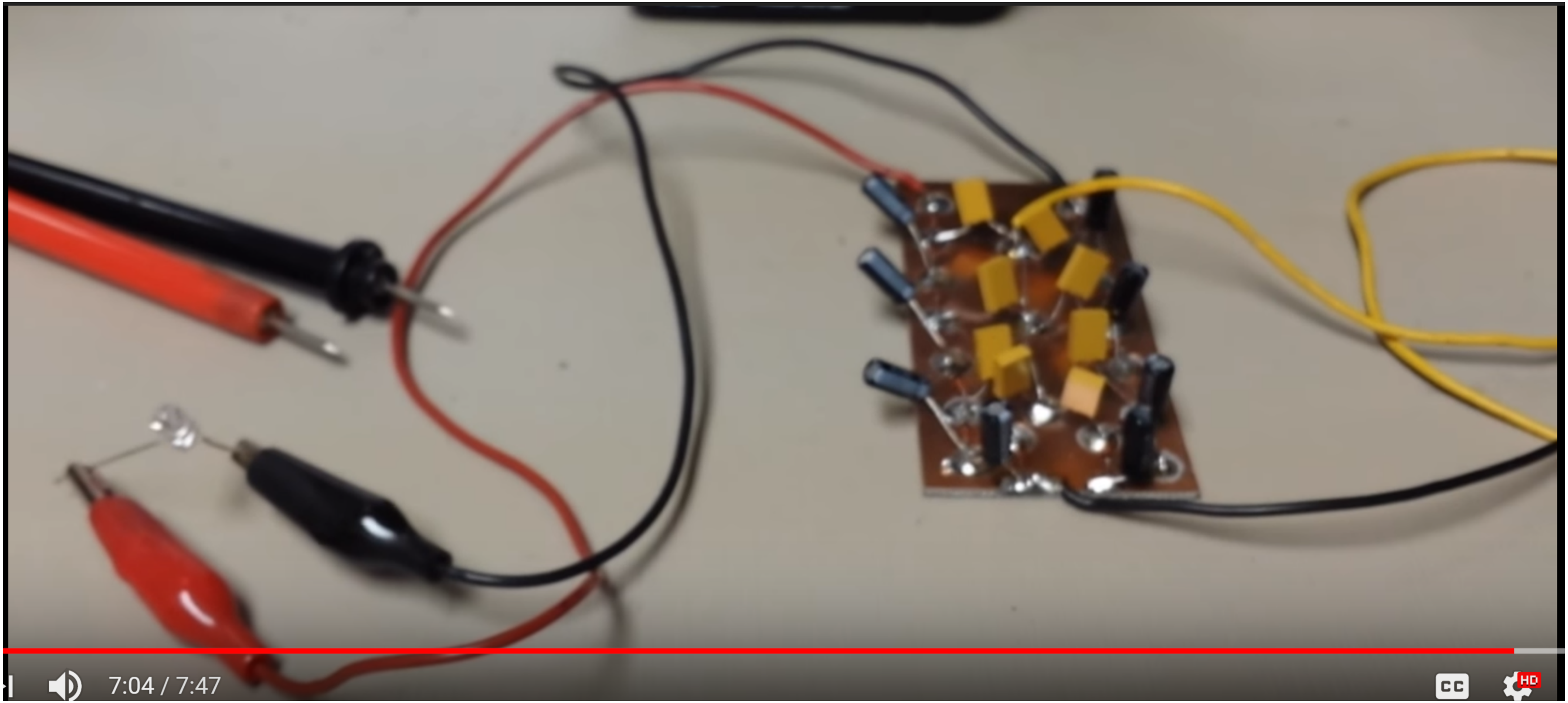
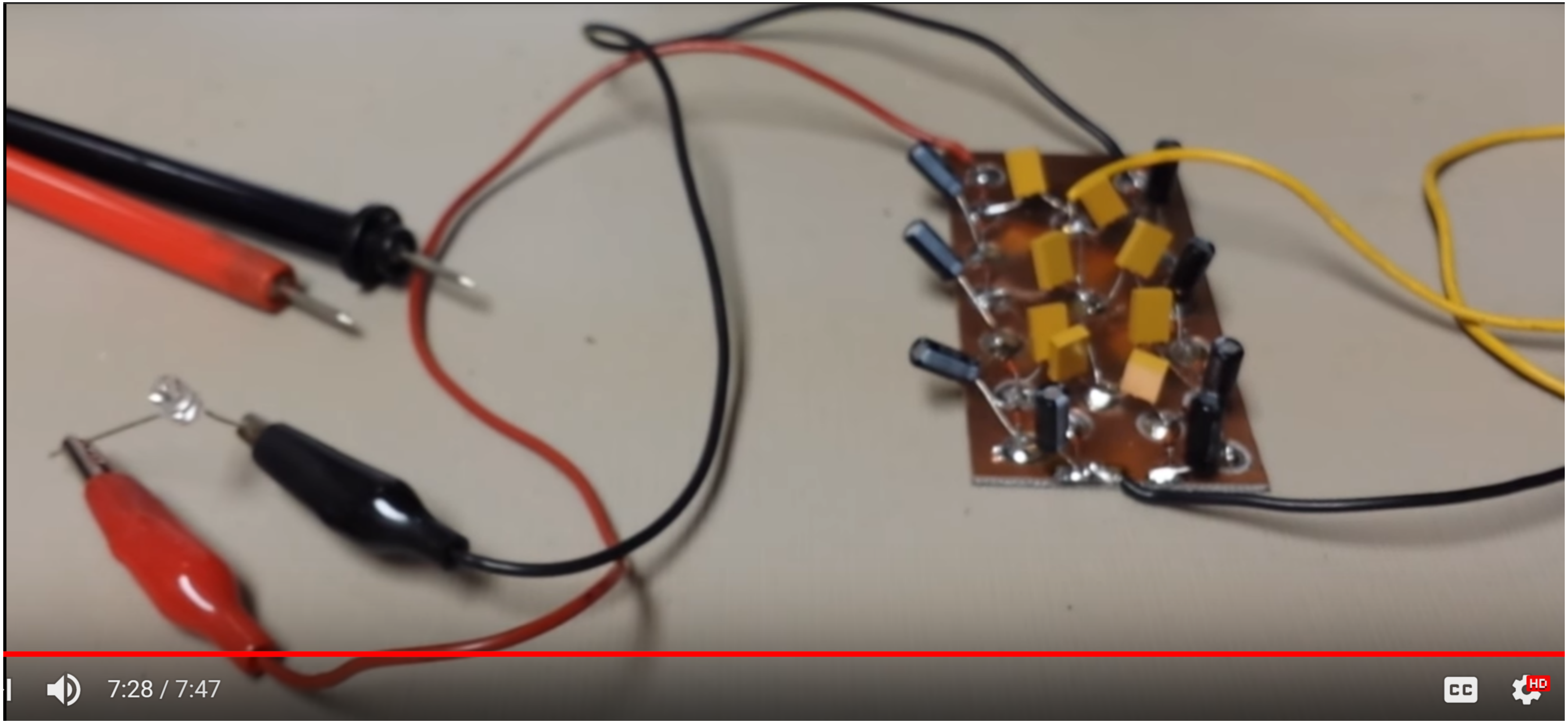



7:04 / 7:47
CC
HD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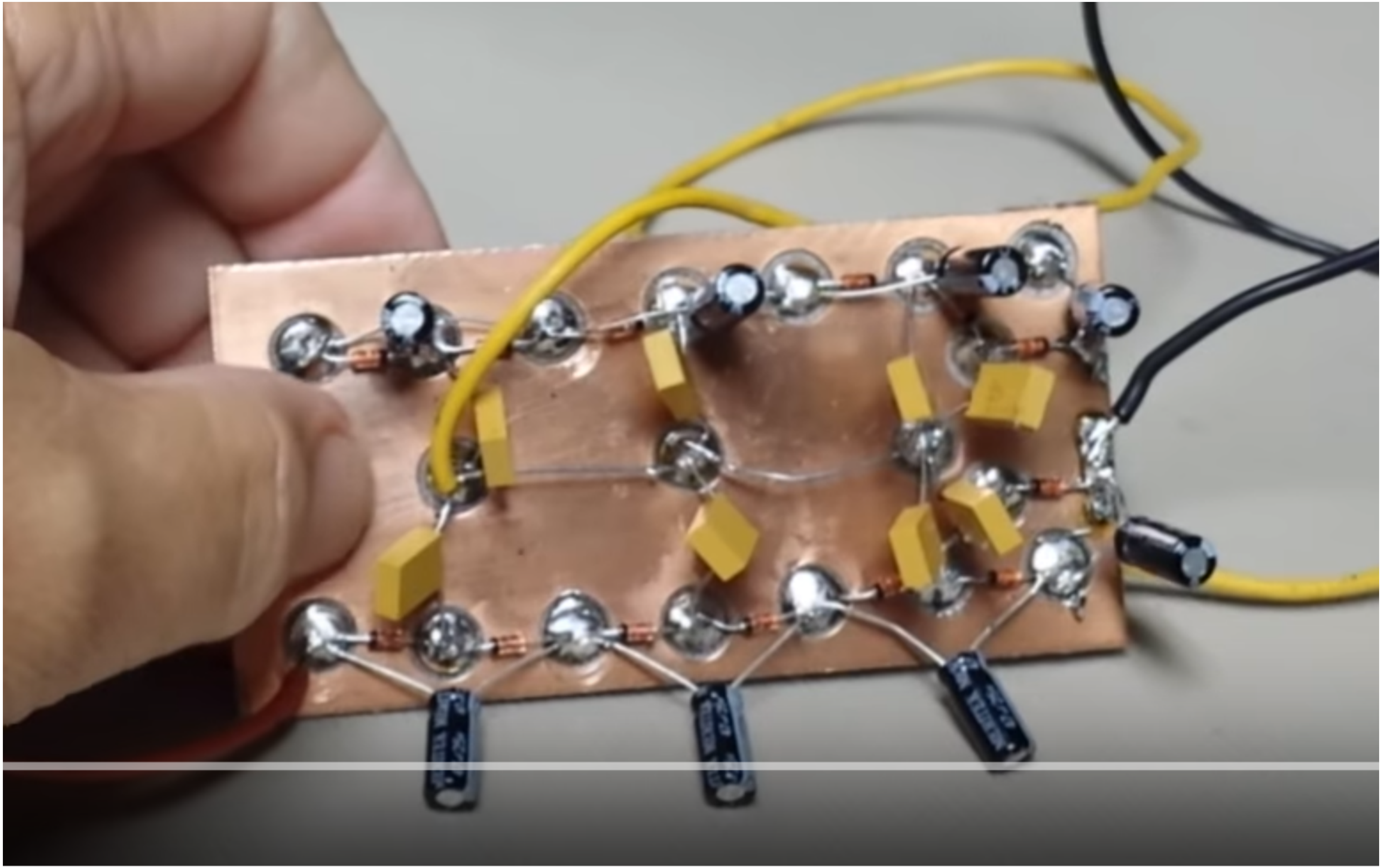
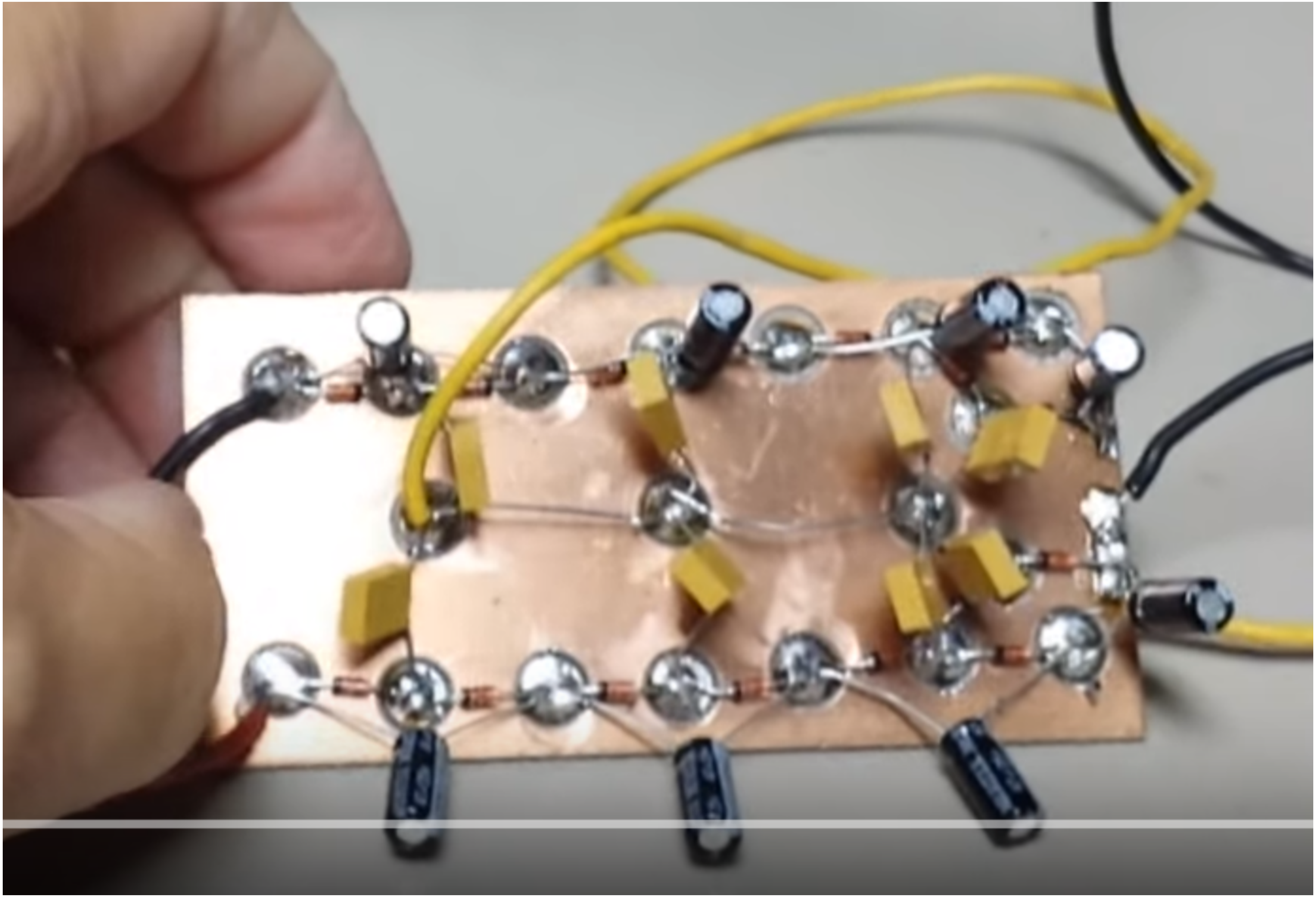
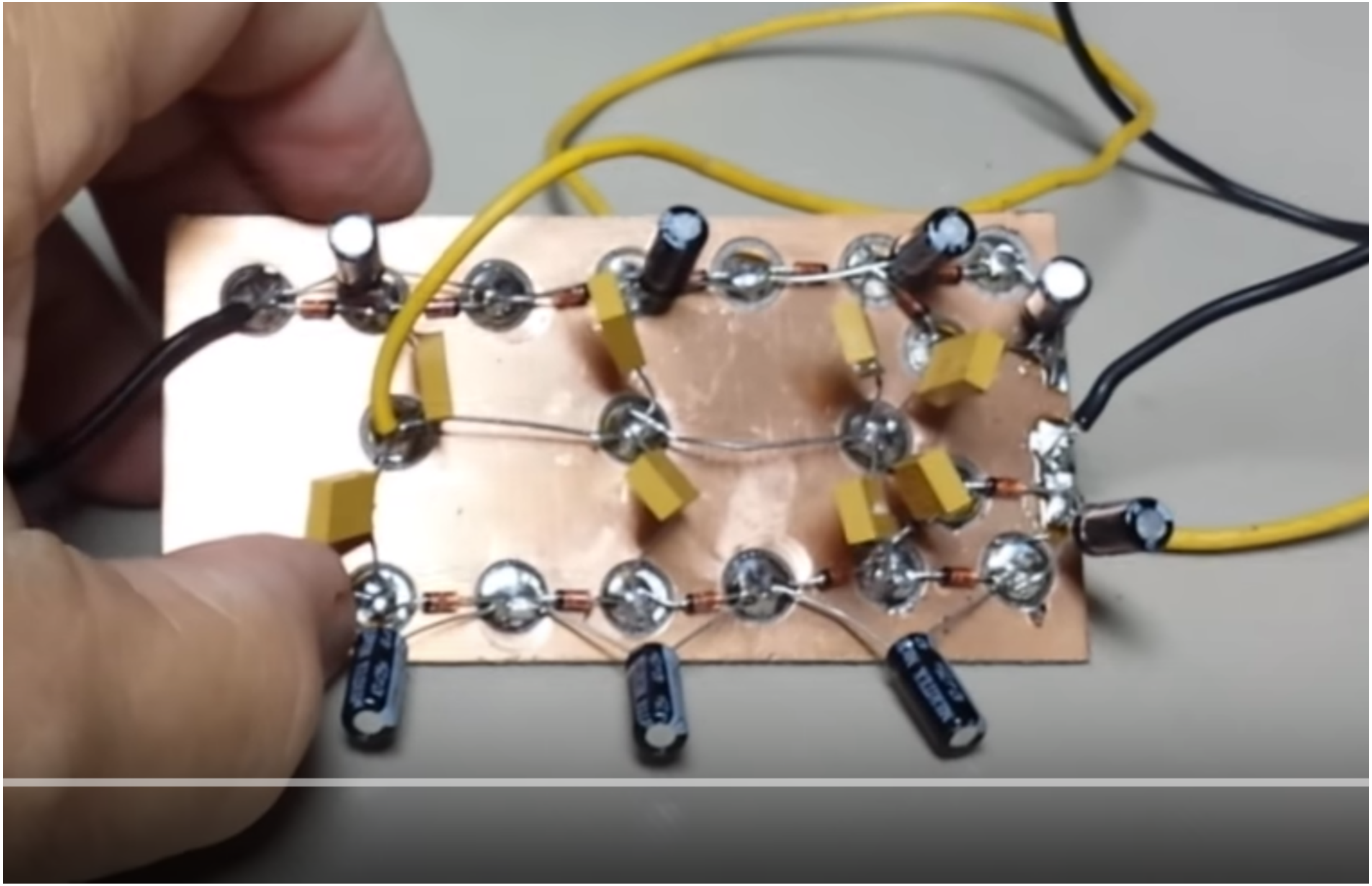
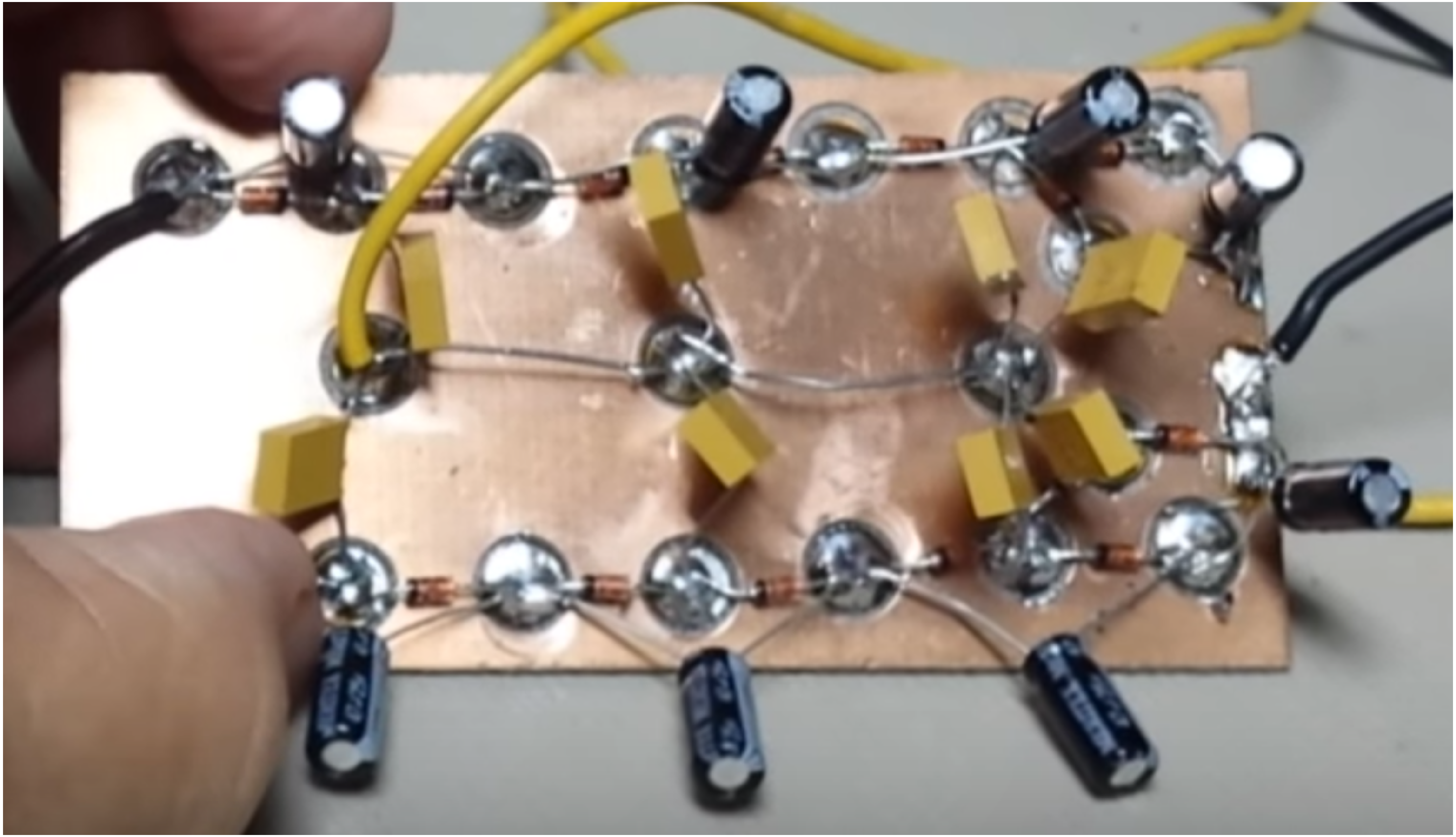
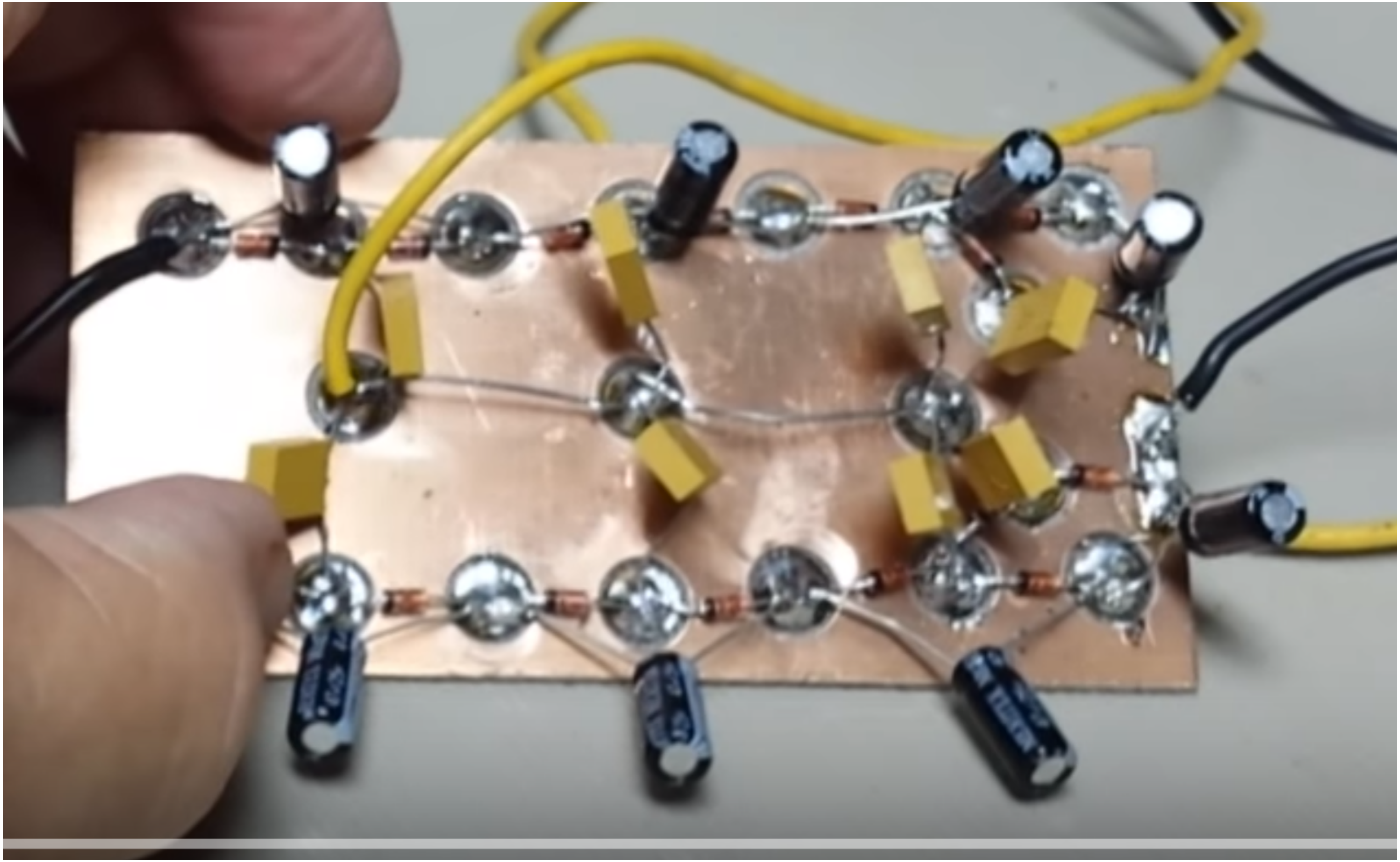
CC
HD

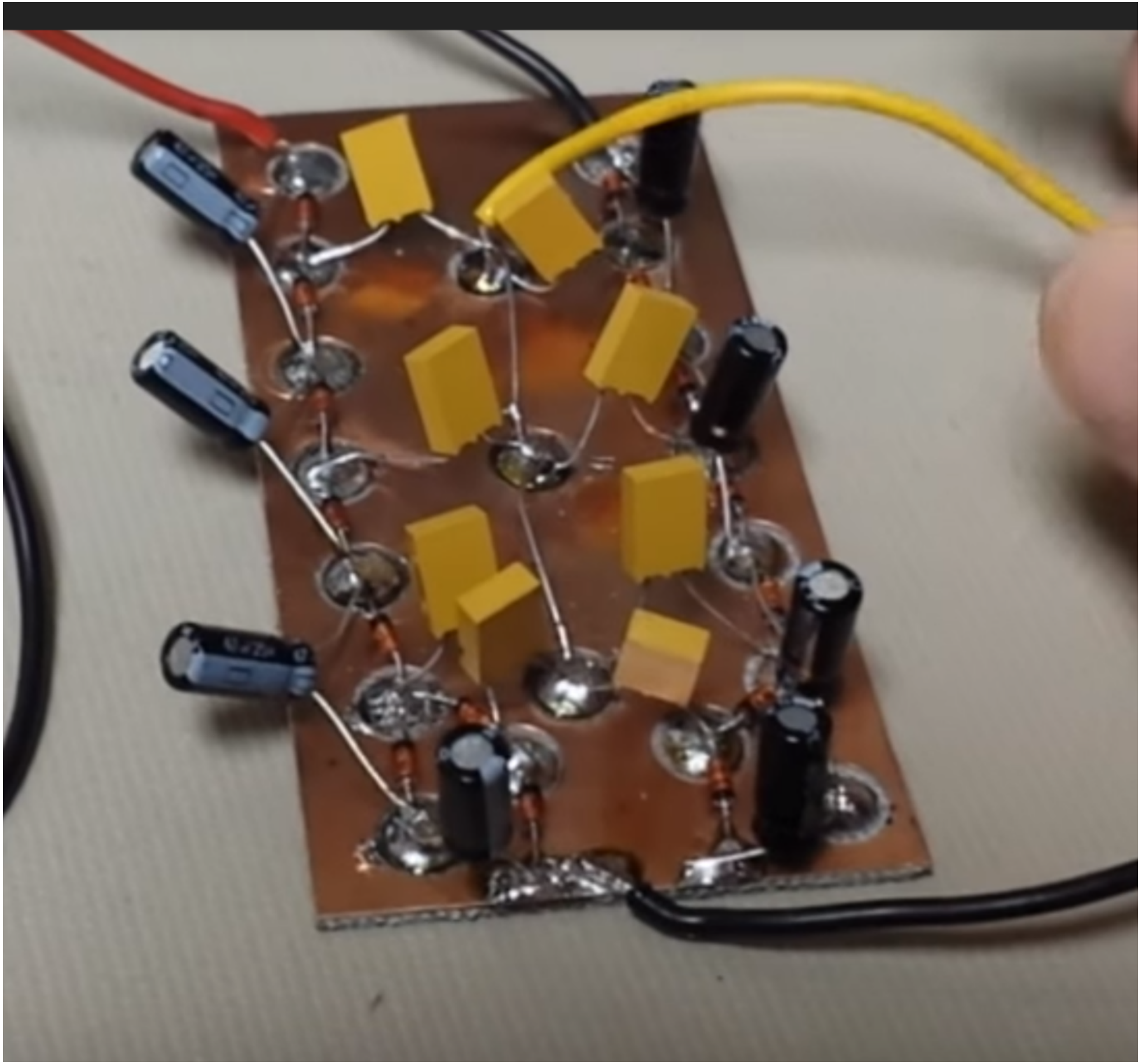


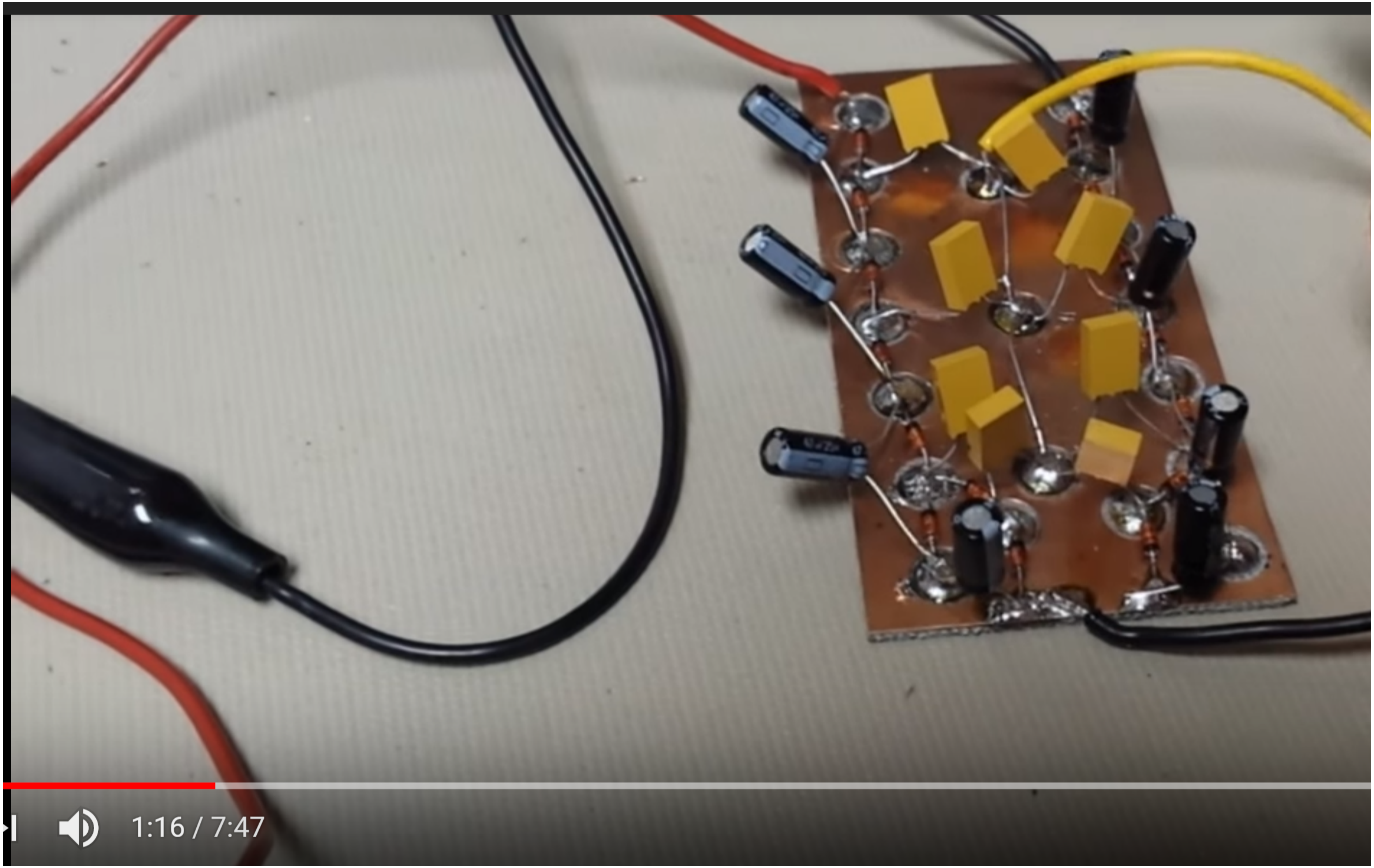


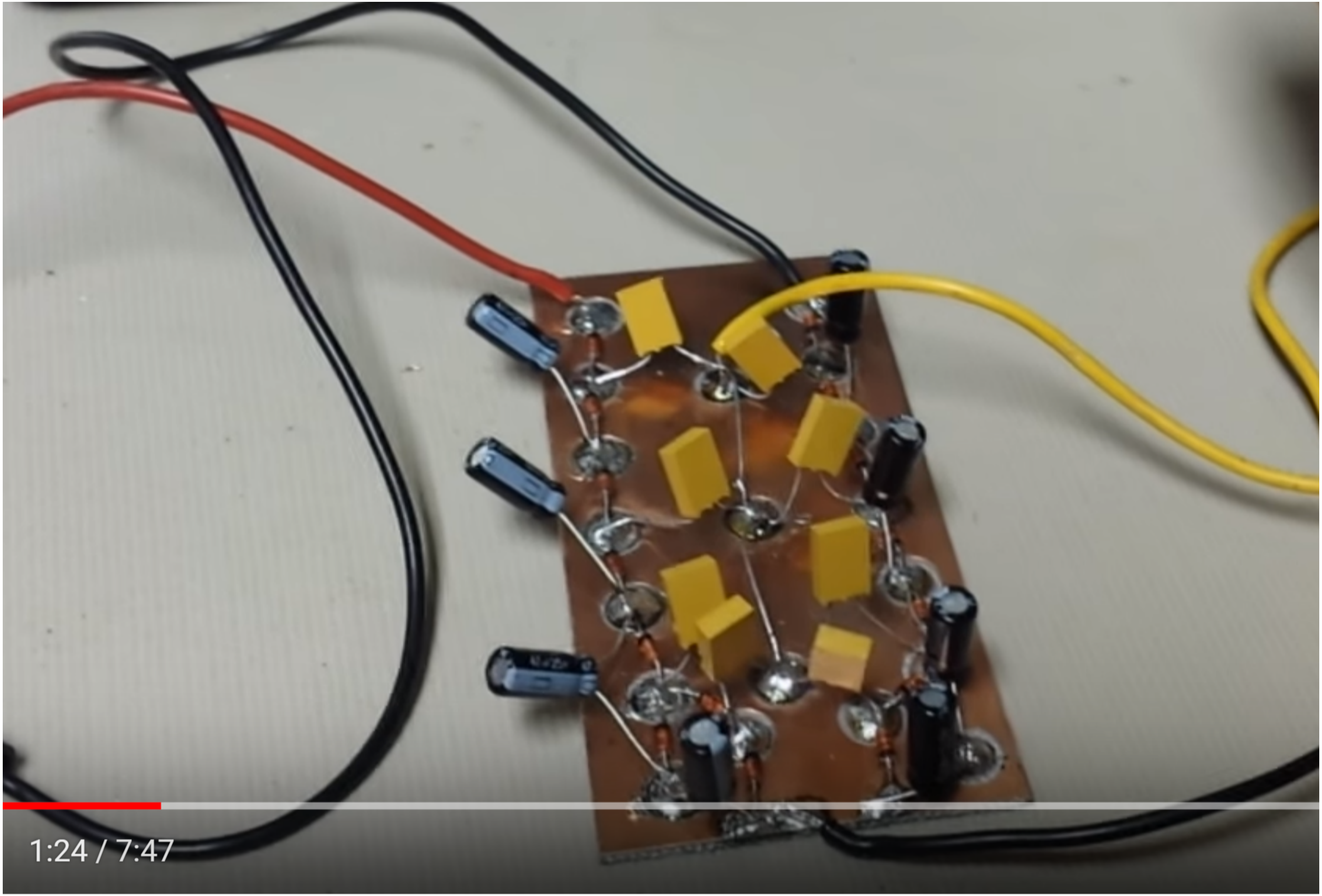









1:16 / 7:47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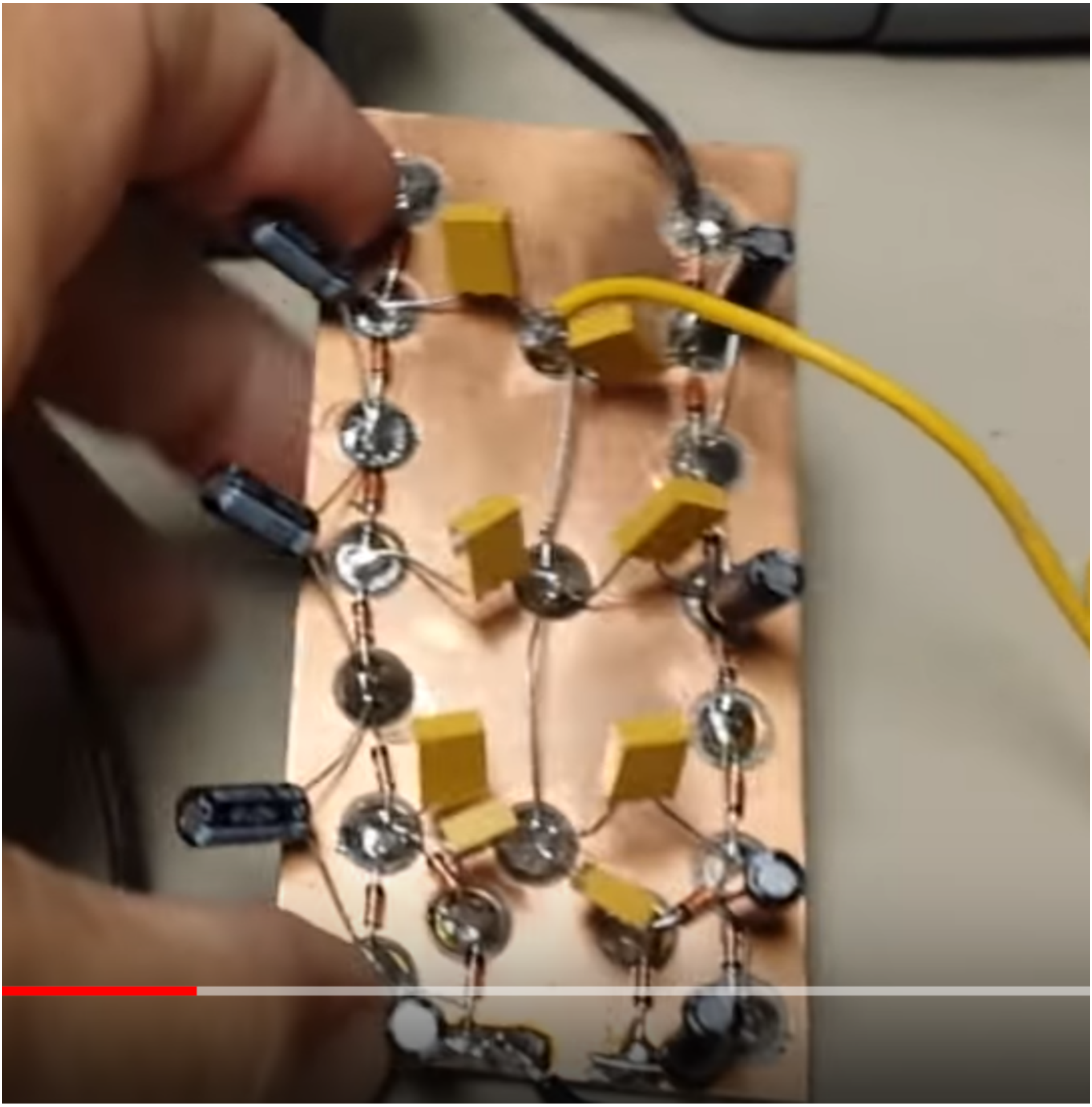

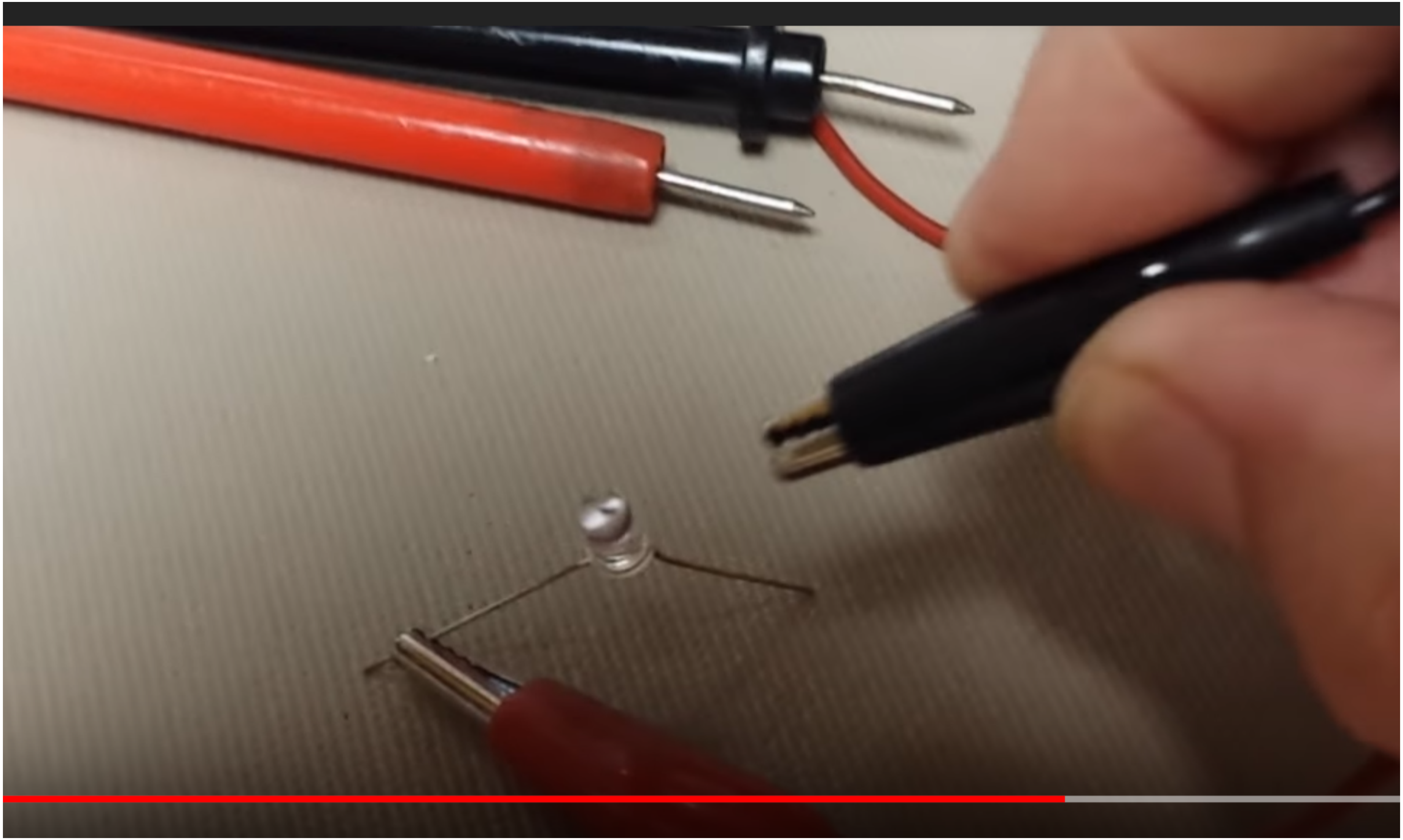

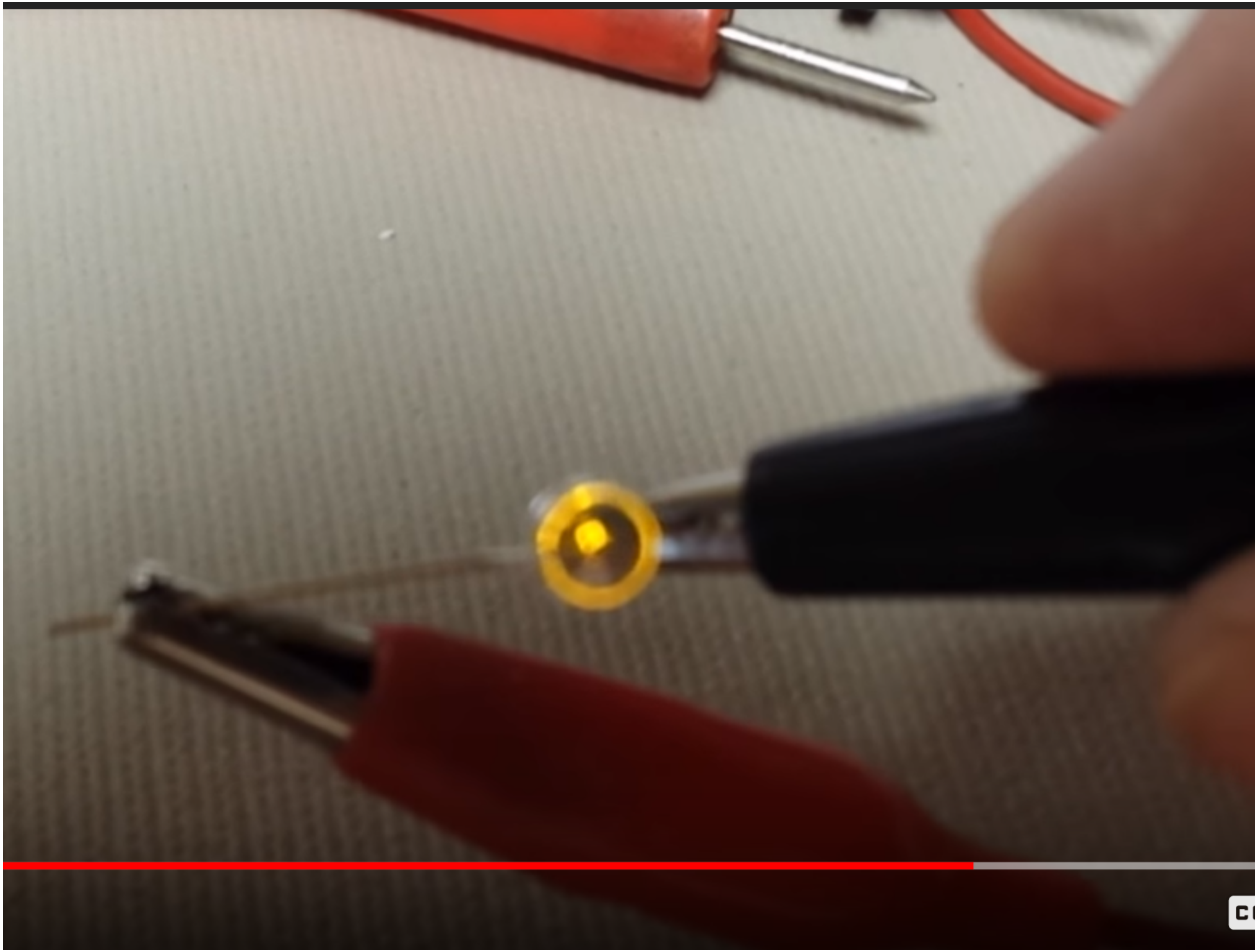

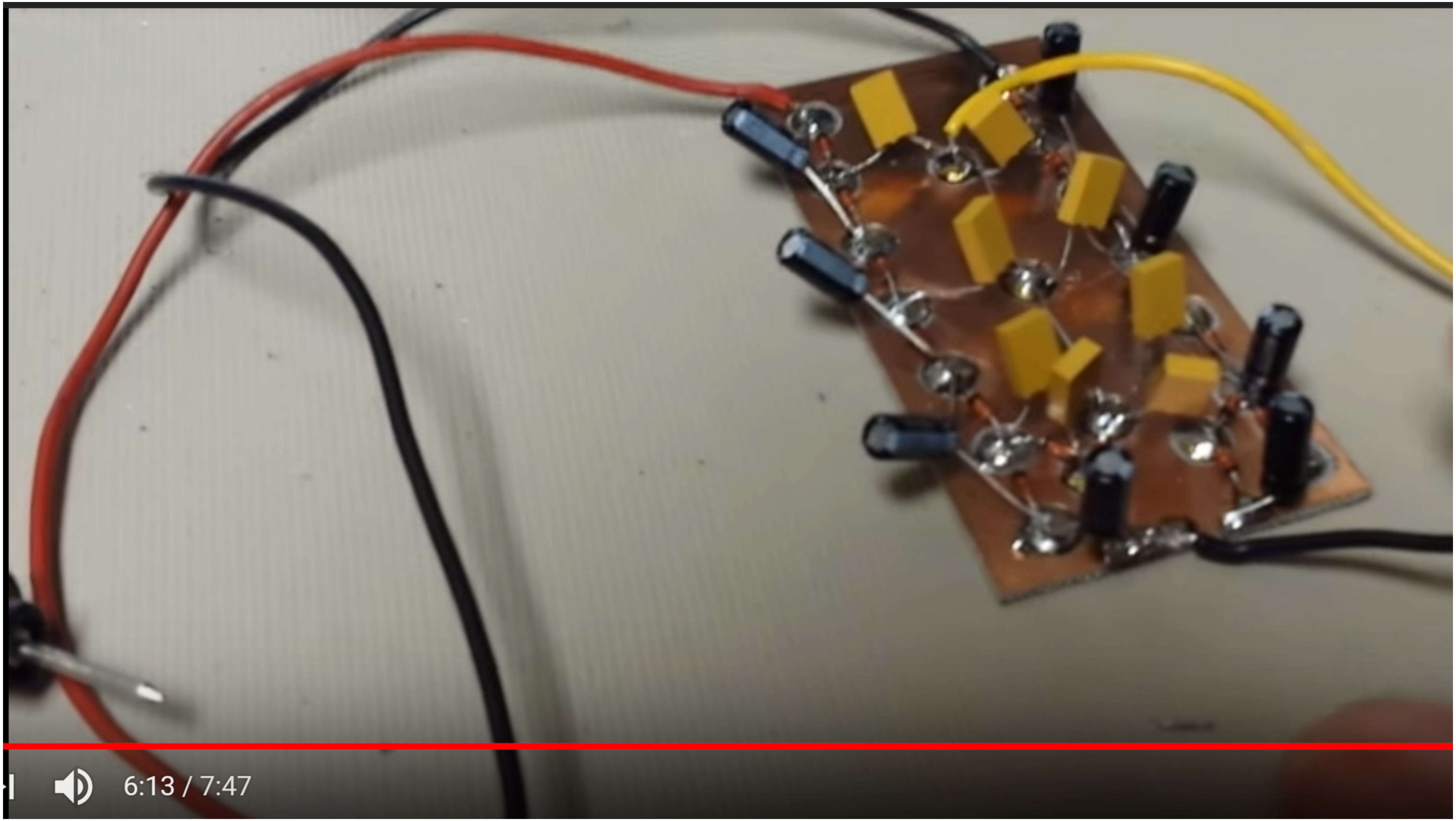
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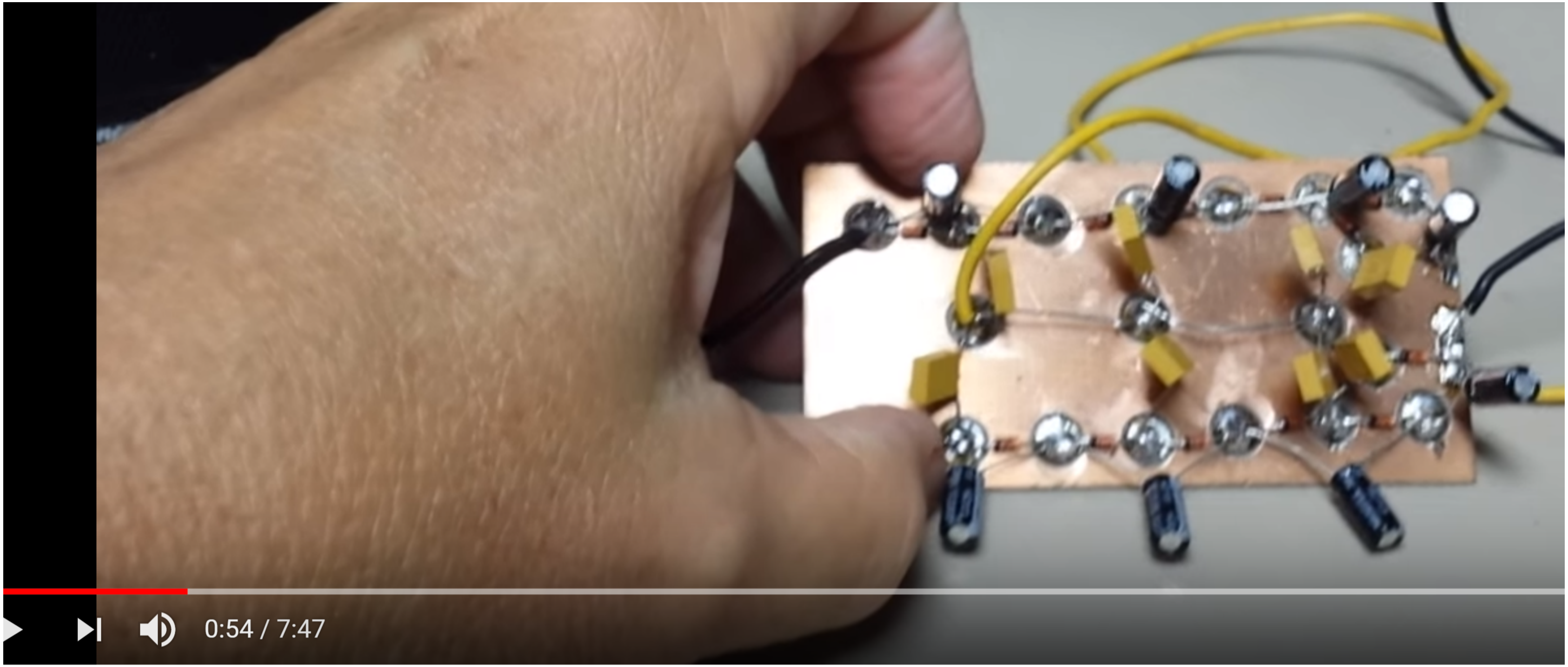
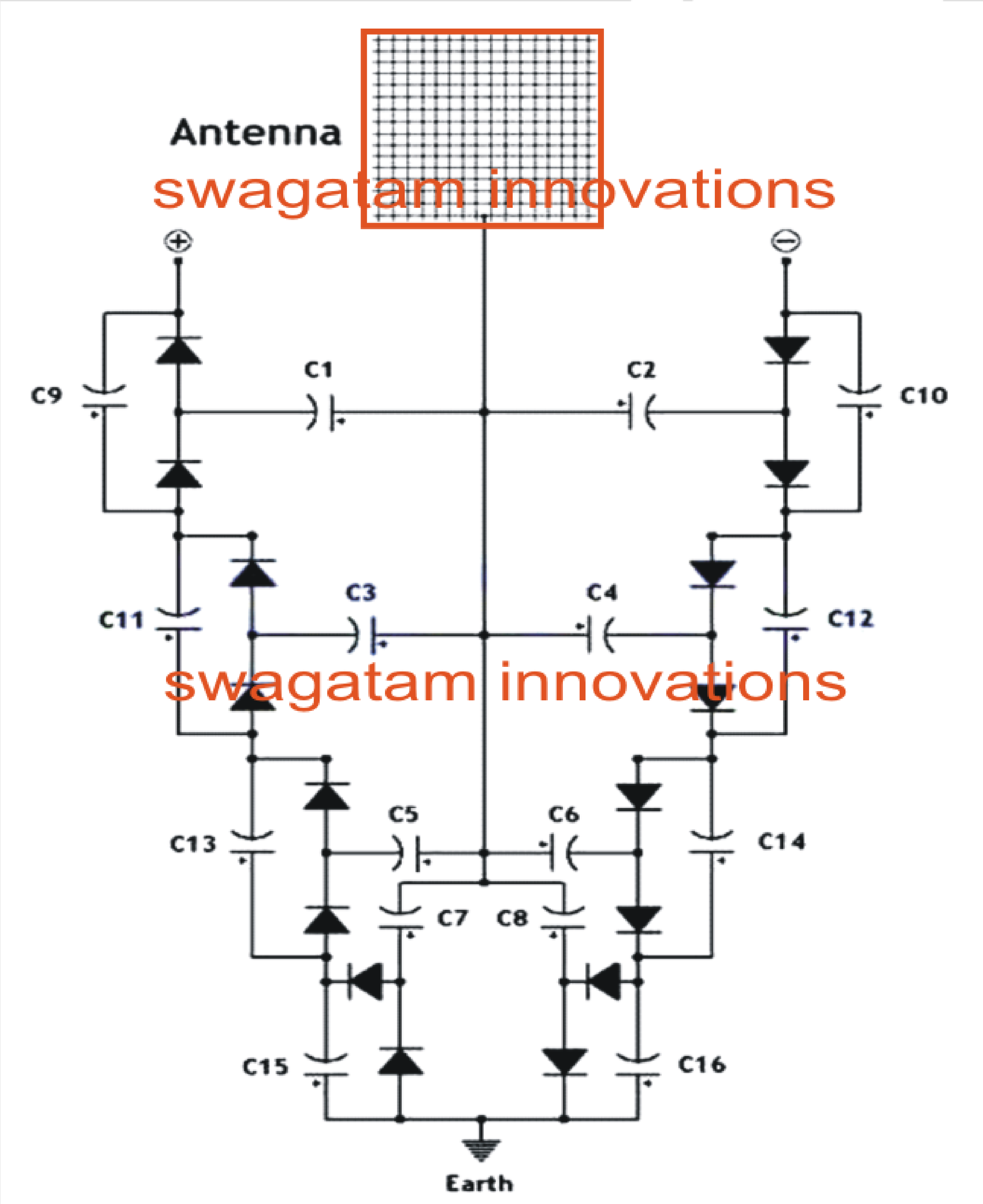


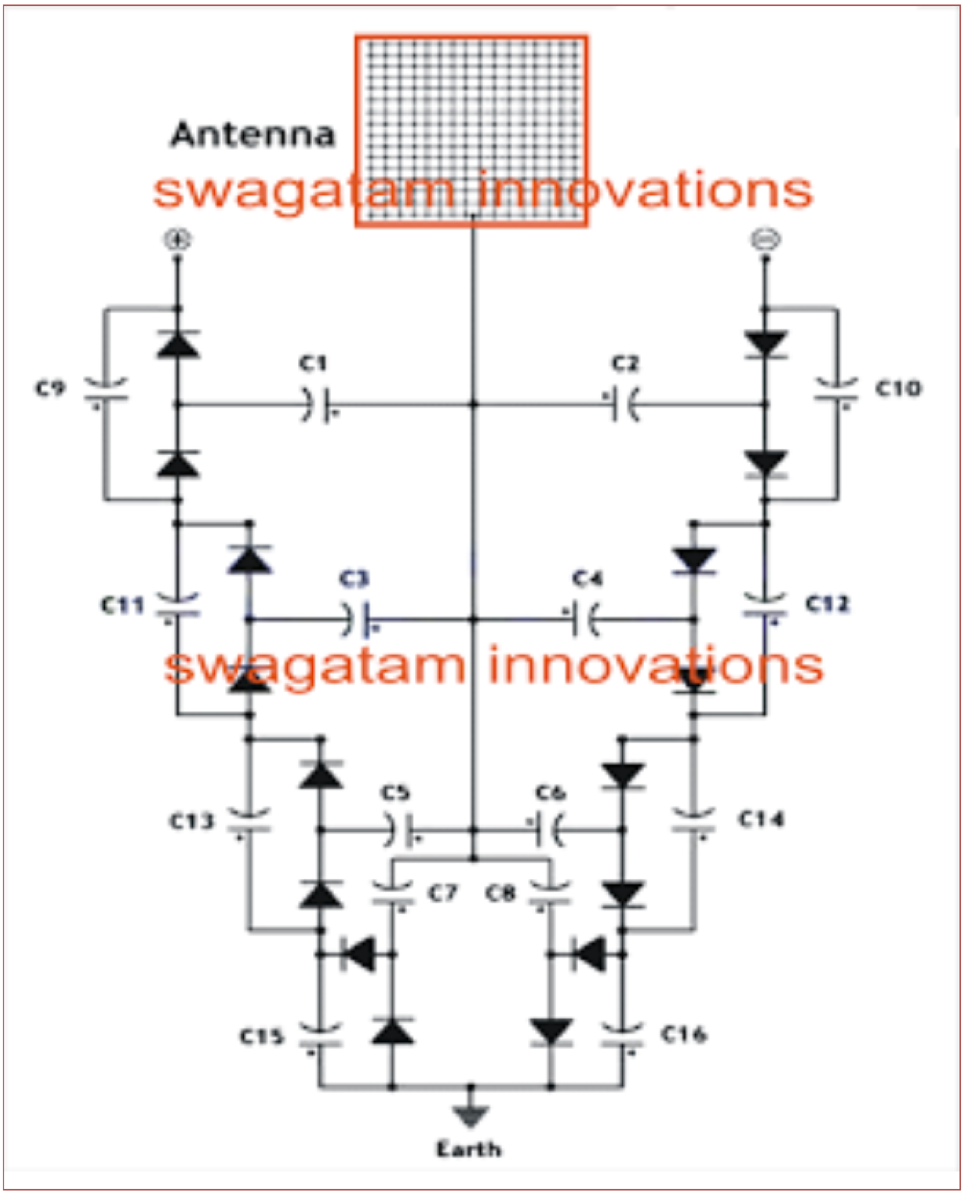
Free Electricial Energy From Invisible Radiation

Up next

Free Energy Vs


Antenna
C1
C2
C9
C10
C3
C4
C11
C12
C5
C6
C13
C14
C7
C8
C15
C16
Earth

Circuit Diagram

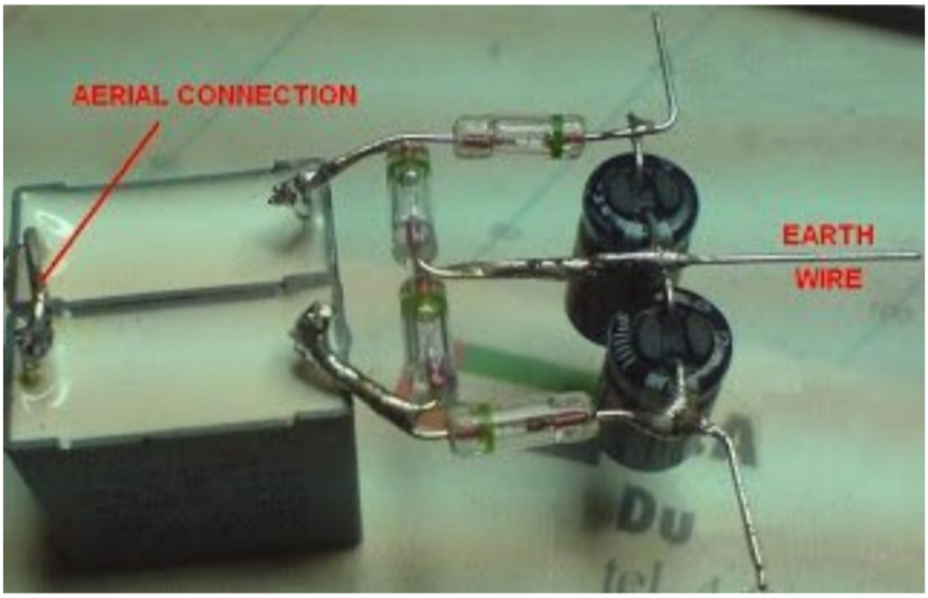


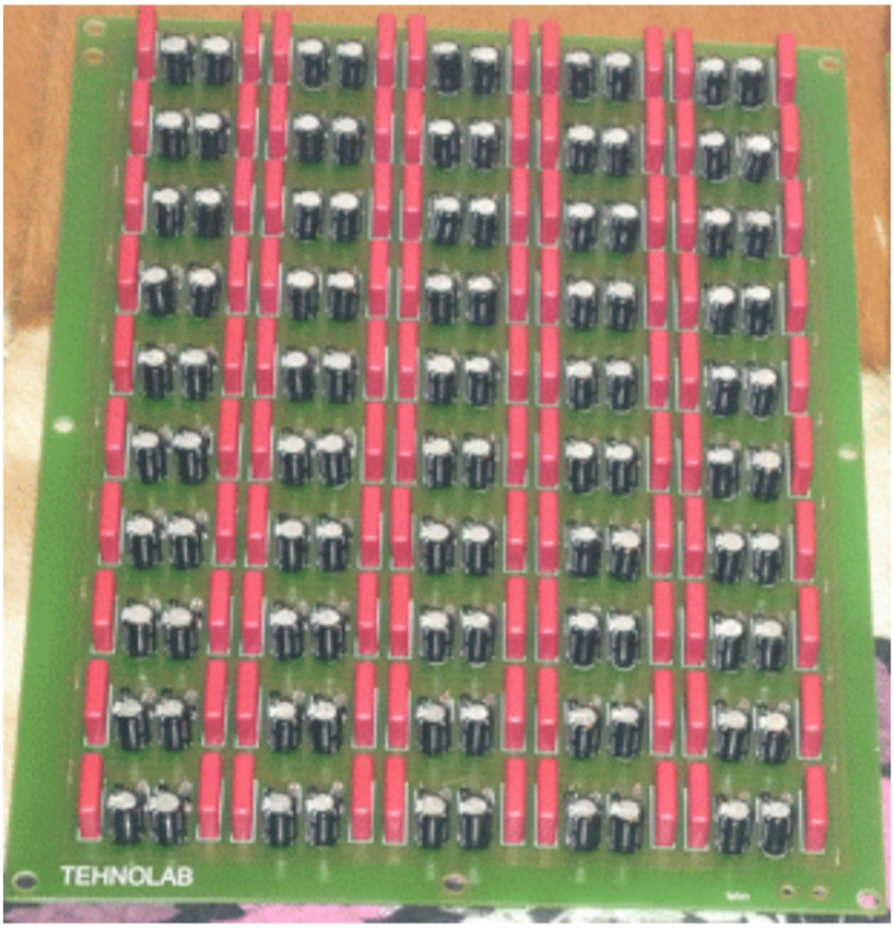
Parts List

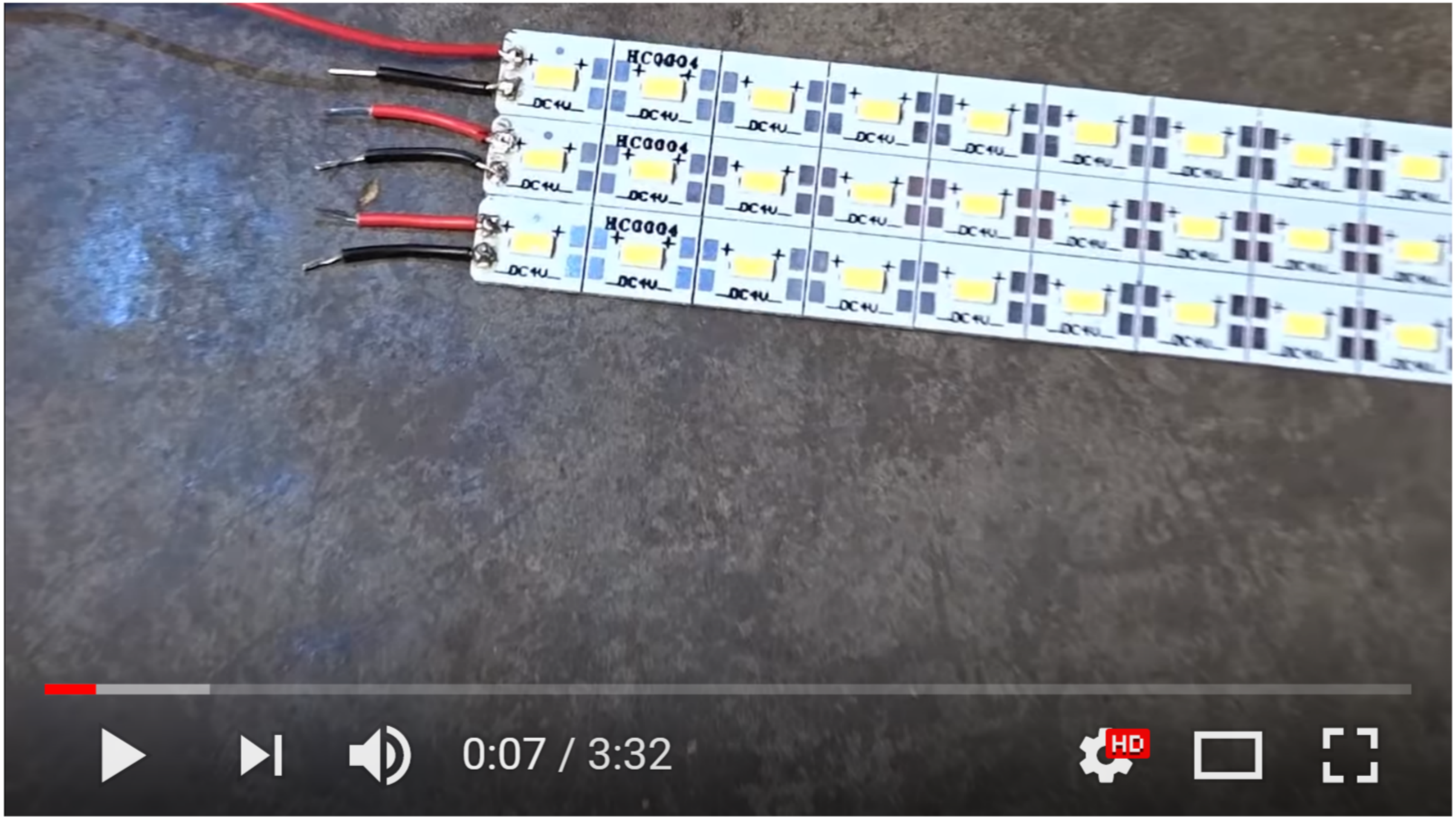
All Diodes are 1N4148

C1---C8 = 0.22uF/100V mylar

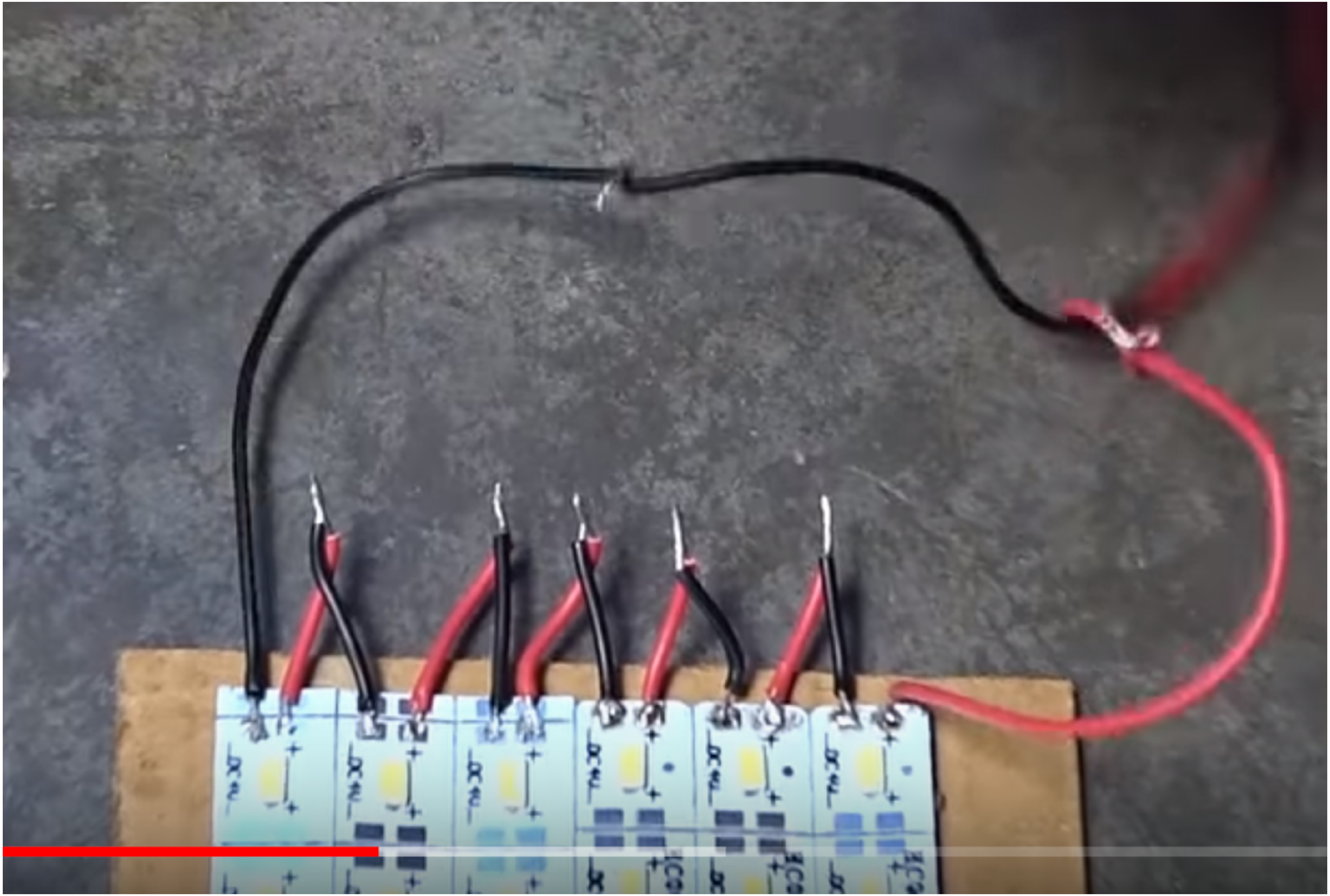
C9----C16 = 33uF/25V electrolytic

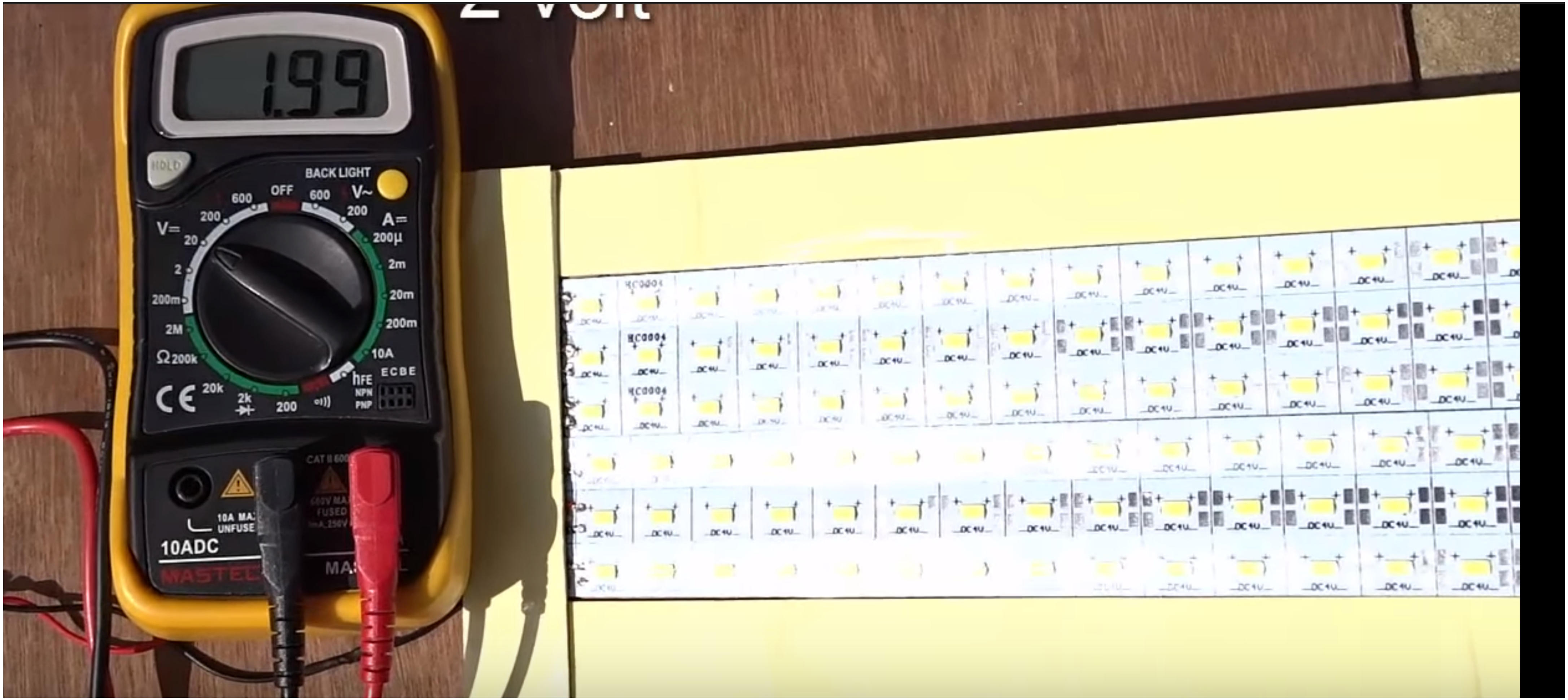

AERIAL CONNECTION
EARTH
WIRE


TEHNOLAB

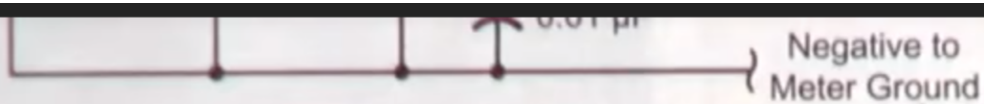


New idea - You can make Solar Cell from LED (Free Energy)




1.99
HOLD
BACK LIGHT
OFF
V=
A=
10A
ECBE
NPN
PNP
10ADC

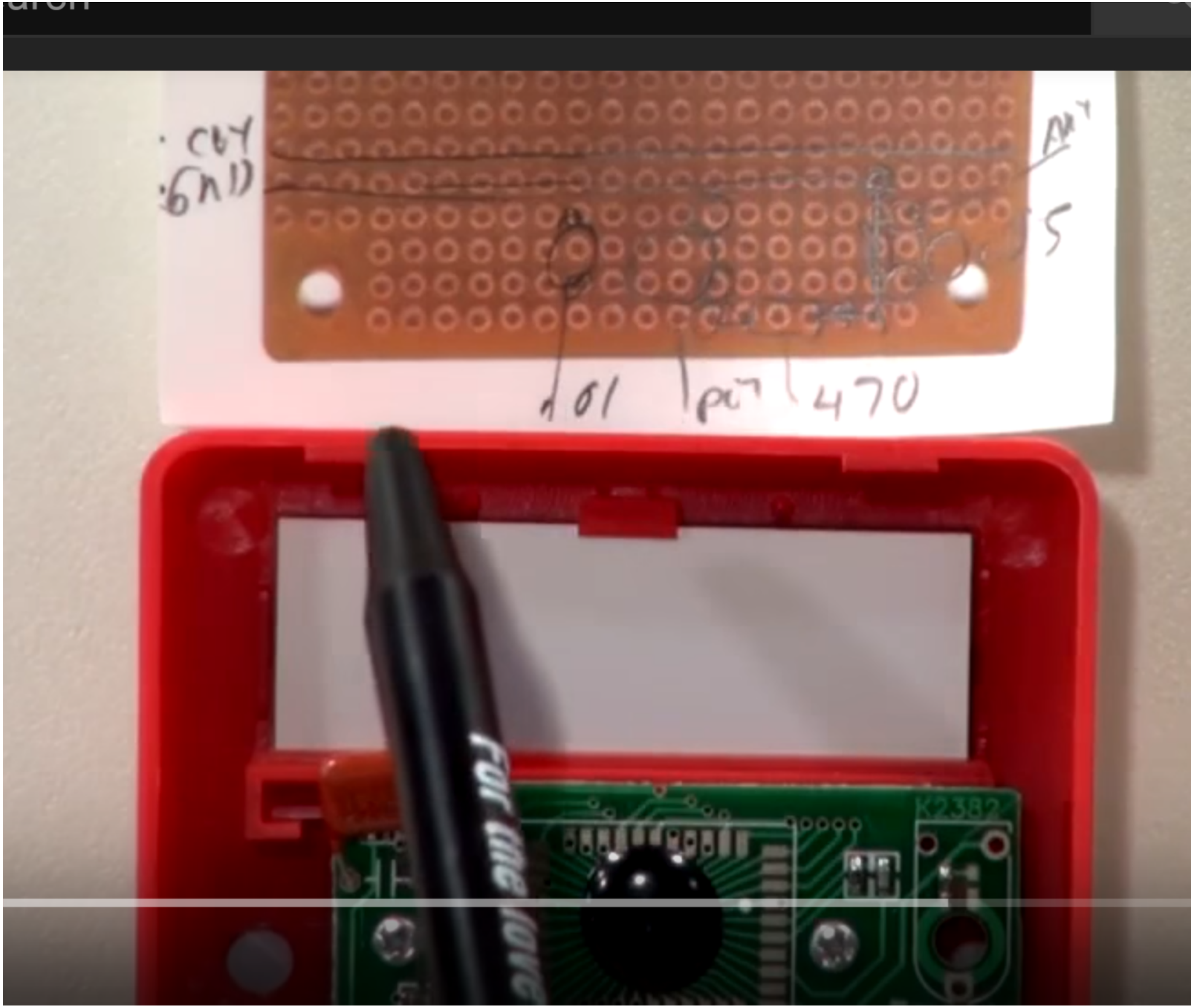
CEN-TECH
7 FUNCTION
DIGITAL
MULTIMETER
CEN-TECH
DIGITAL
MULTIMETER



field strength detector board.

Figure 4 — The detector board mounted inside the multimeter case. The bottom of the board is insulated with plastic tape. [Richard Russo, KB3VZL, photo]

Figure 5 — The origi graded companion. [KB3VZL, photo]



Up next

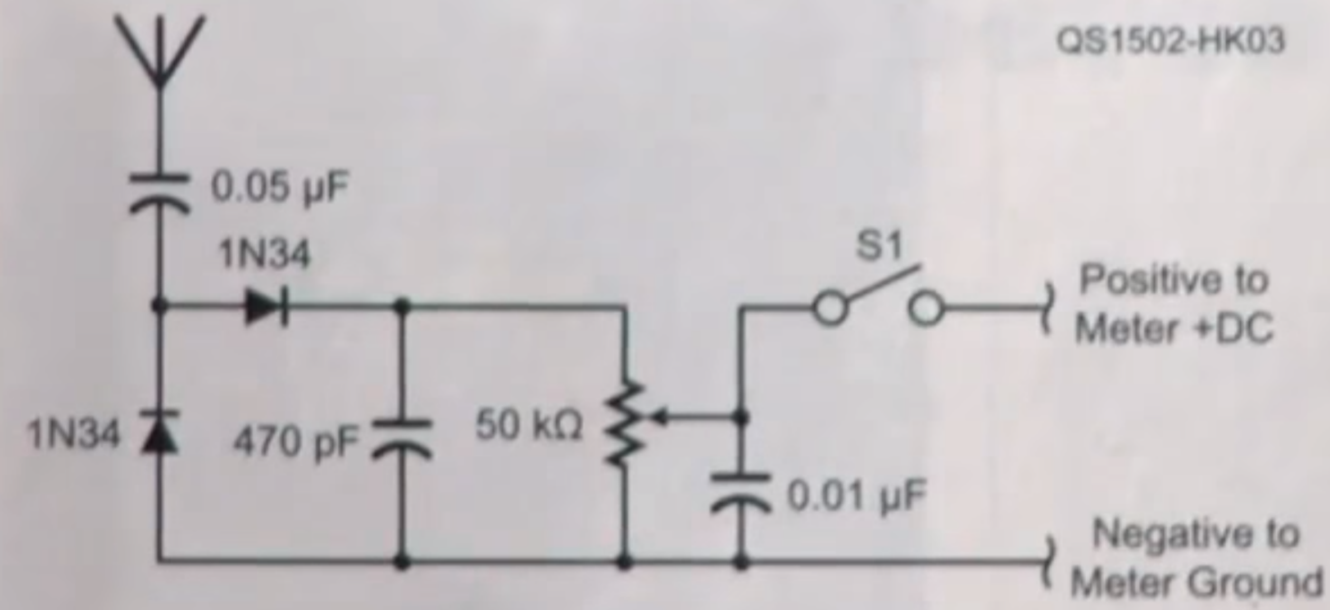
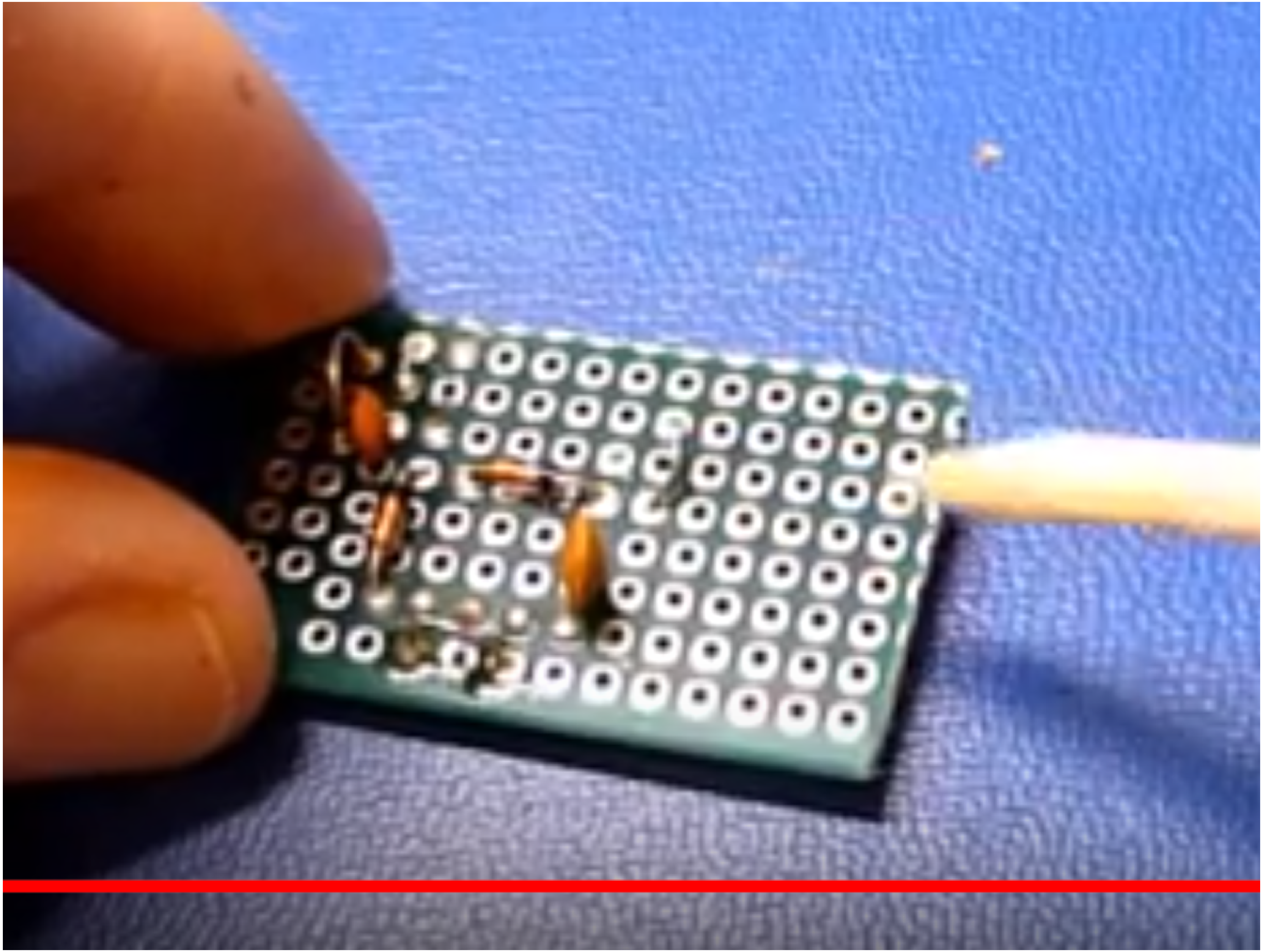
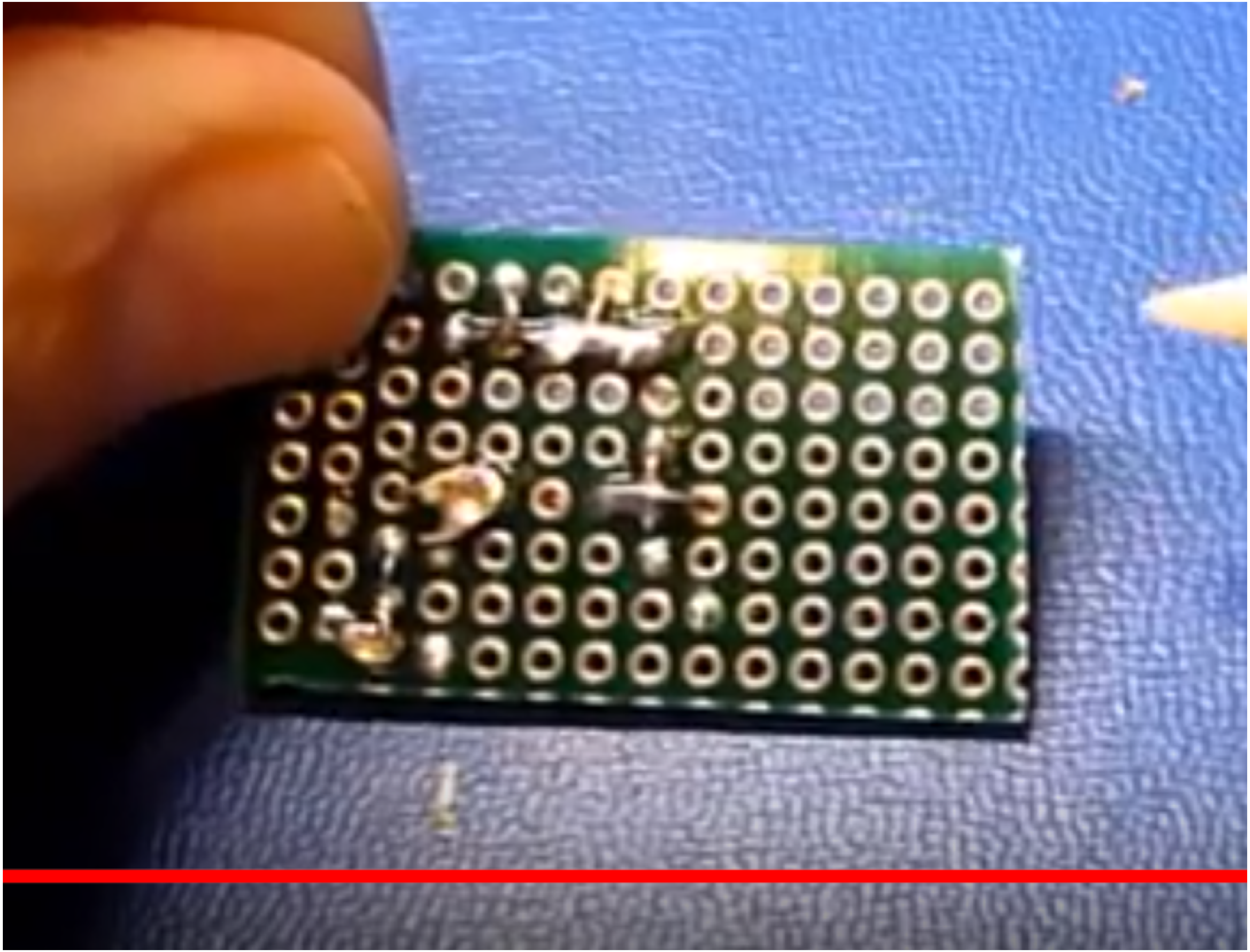
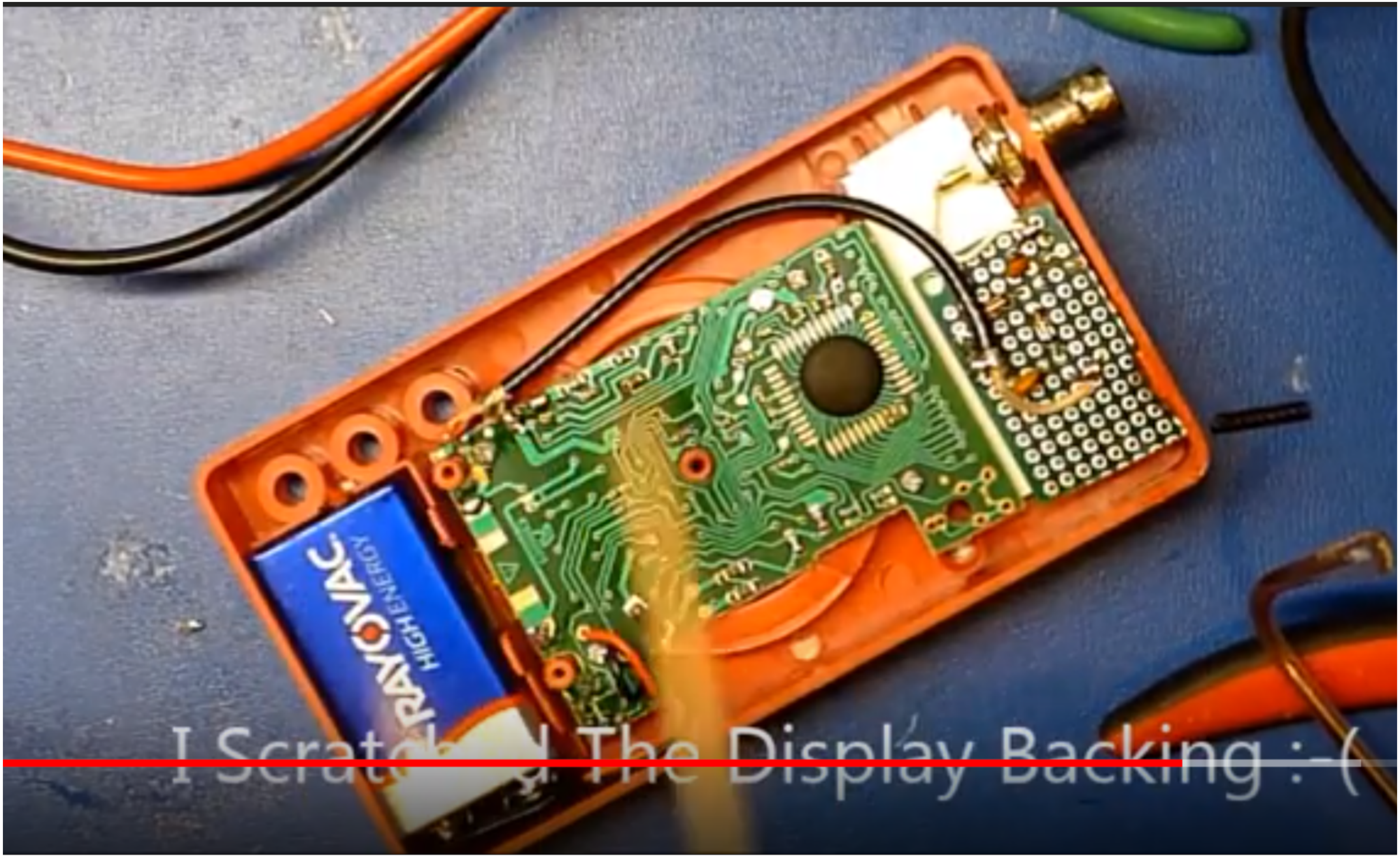


Figure 3 — The schematic for the field strength detector board.

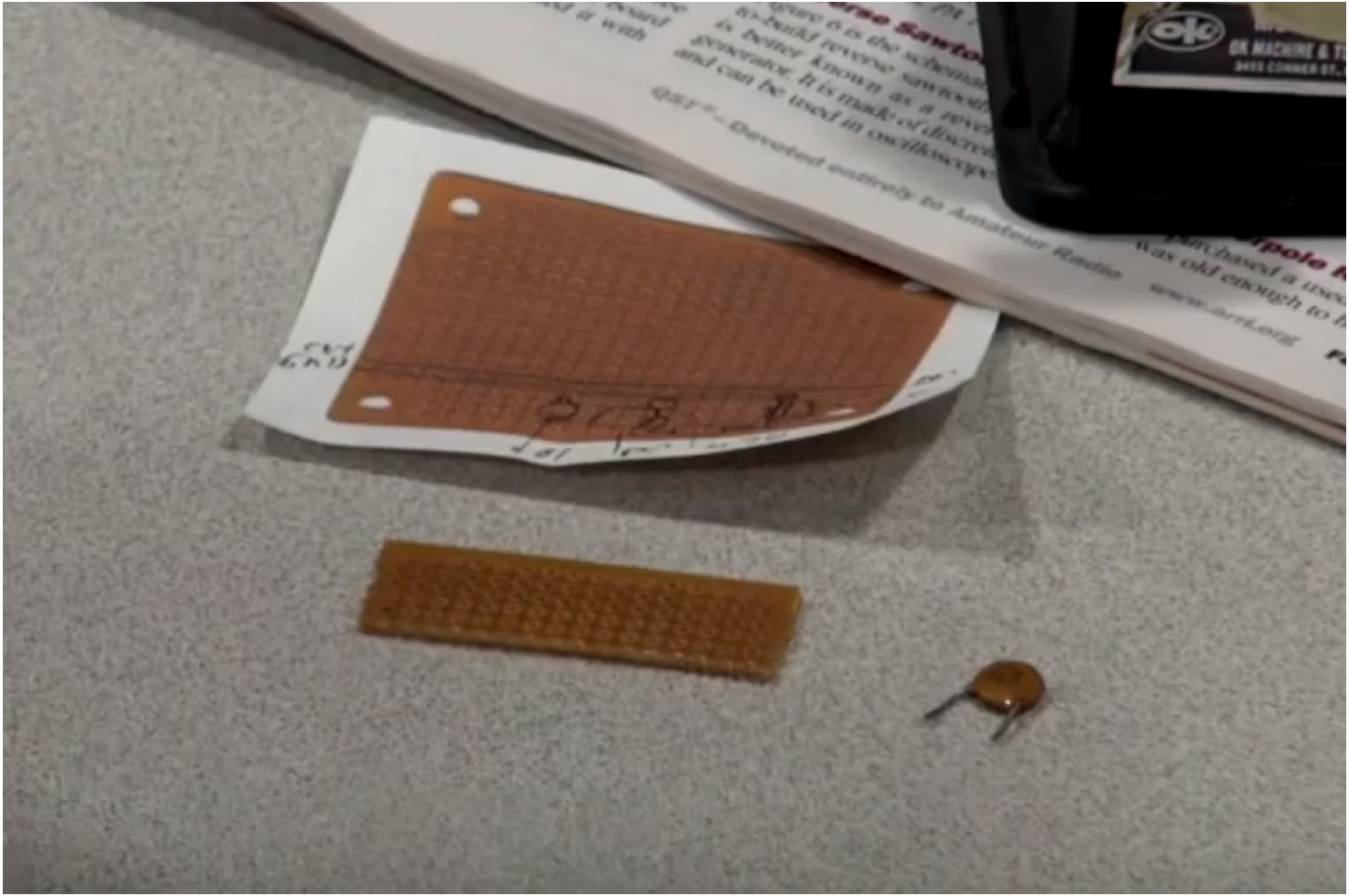


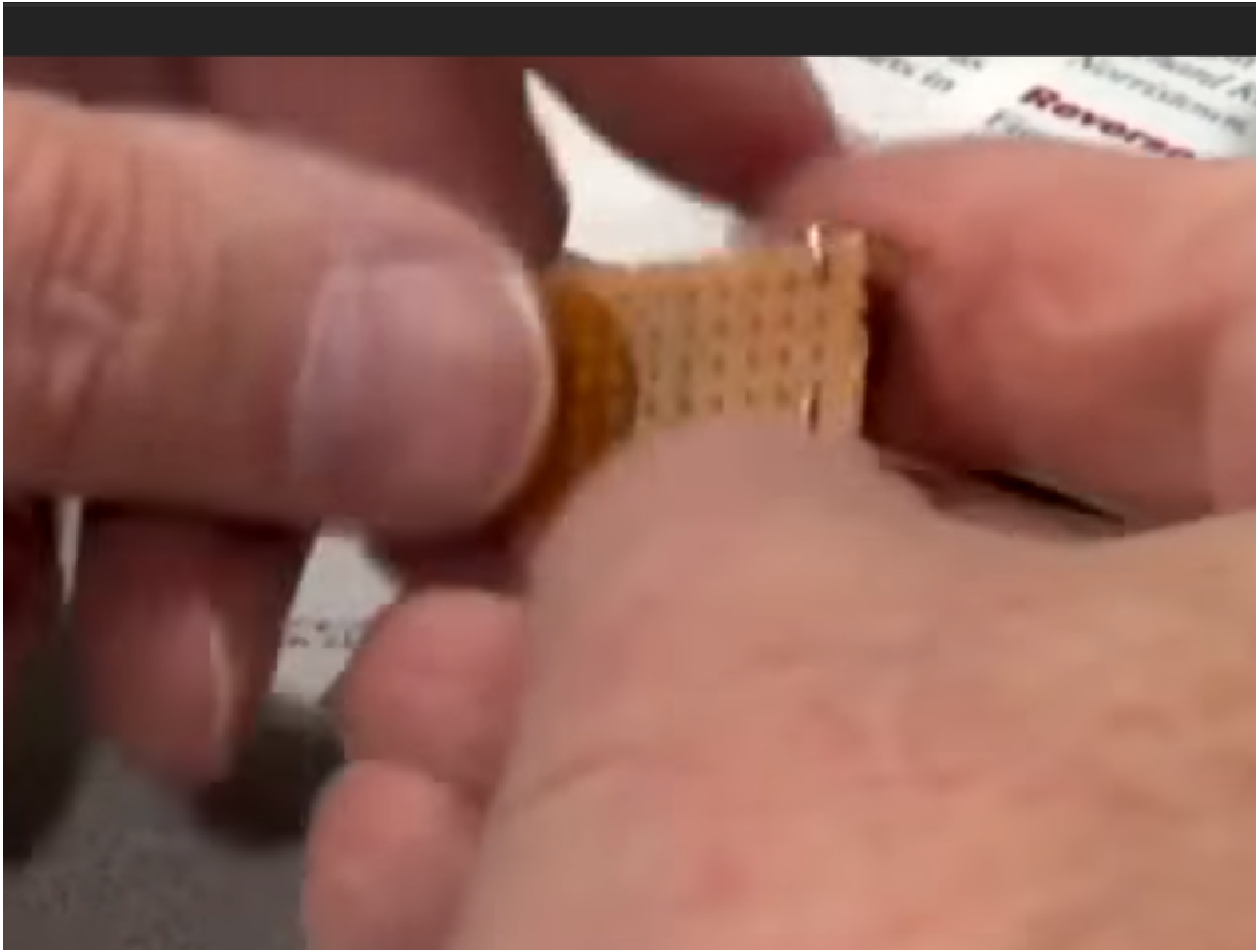



RAYOVAC
HIGH ENERGY
I Scratc d The Display Backing :-(

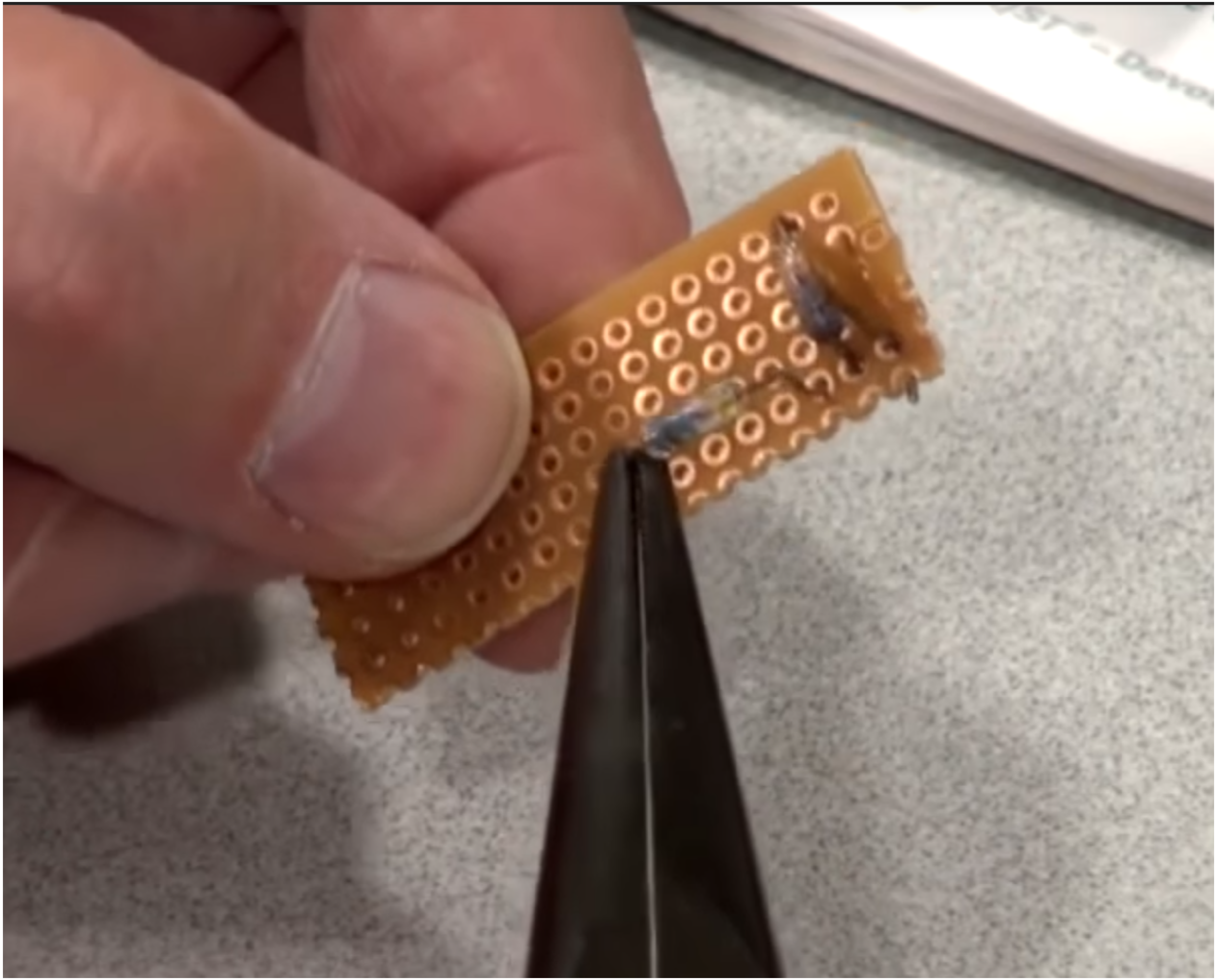
Up next

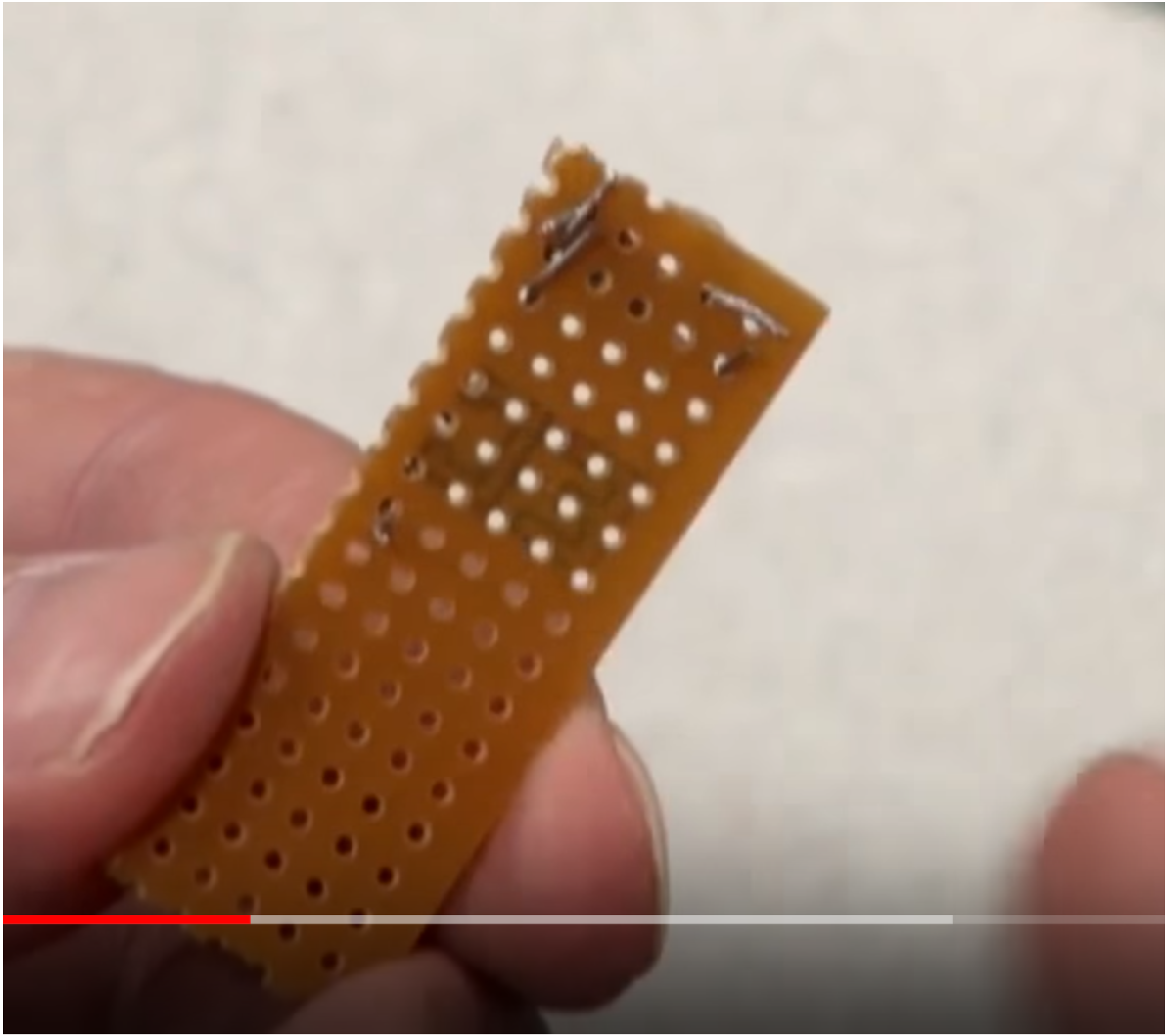
Let's Build A Field Strength Meter

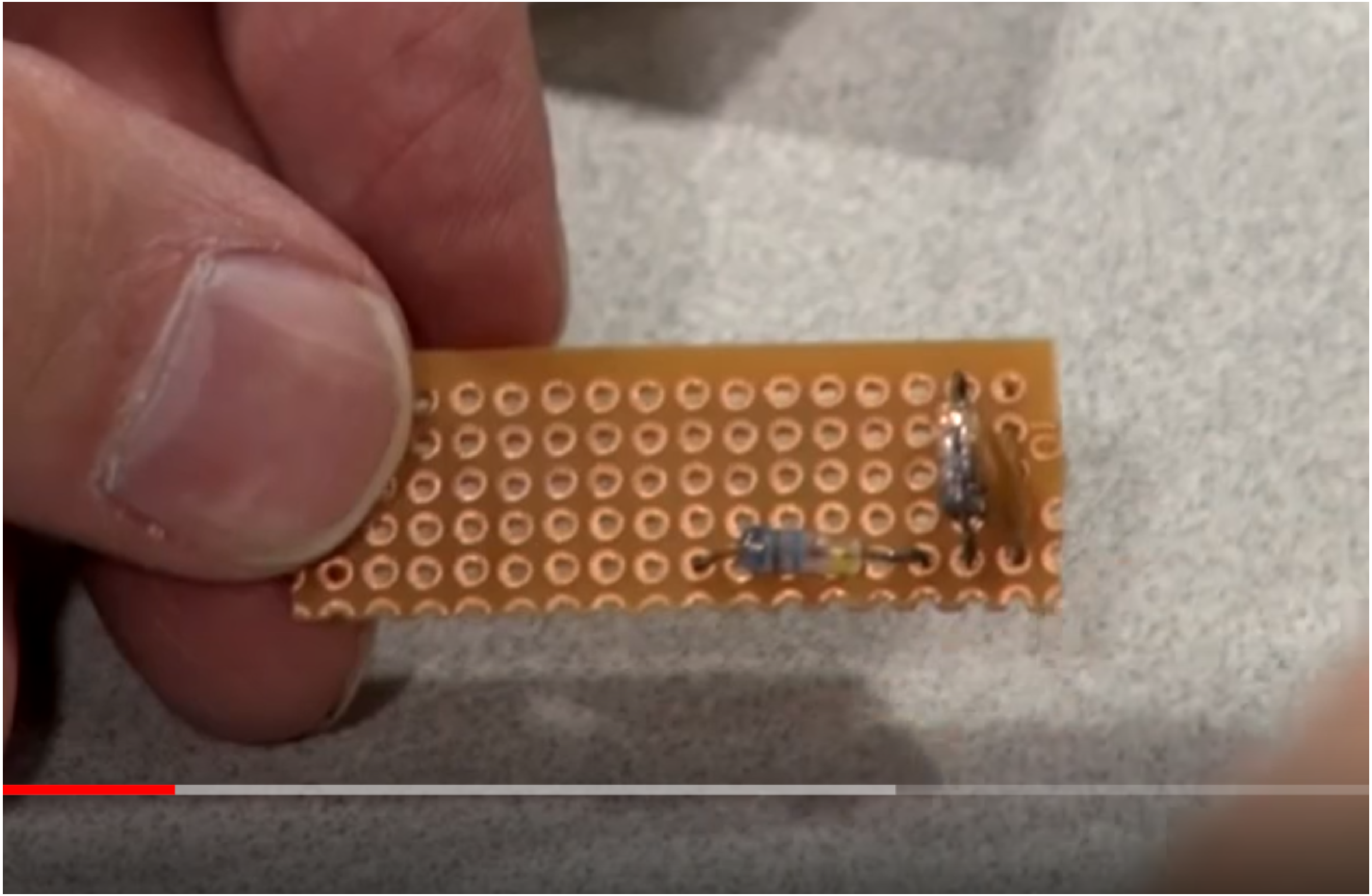

QST® – Devoted entirely to Amateur Radio
www.arrl.org

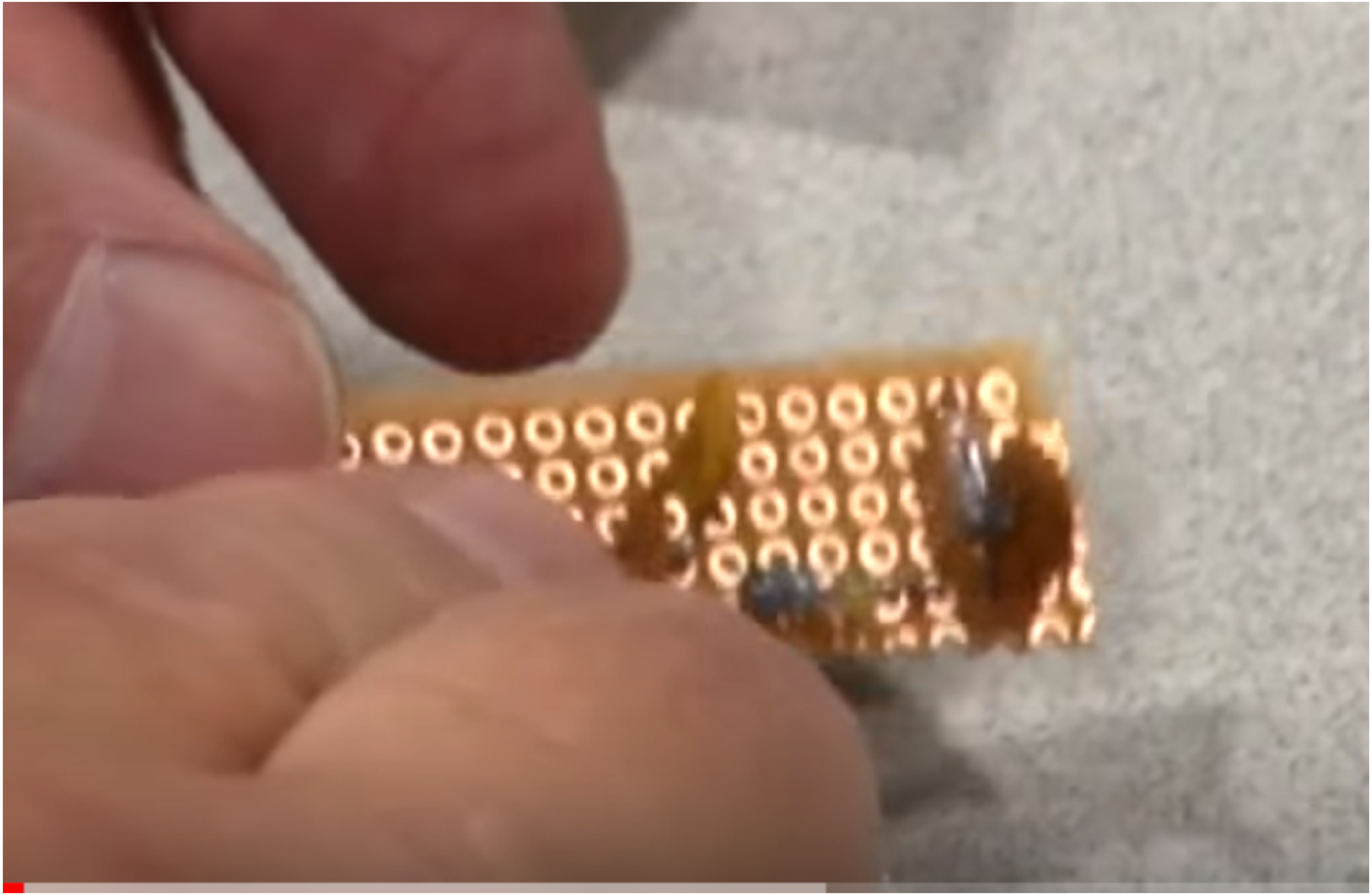


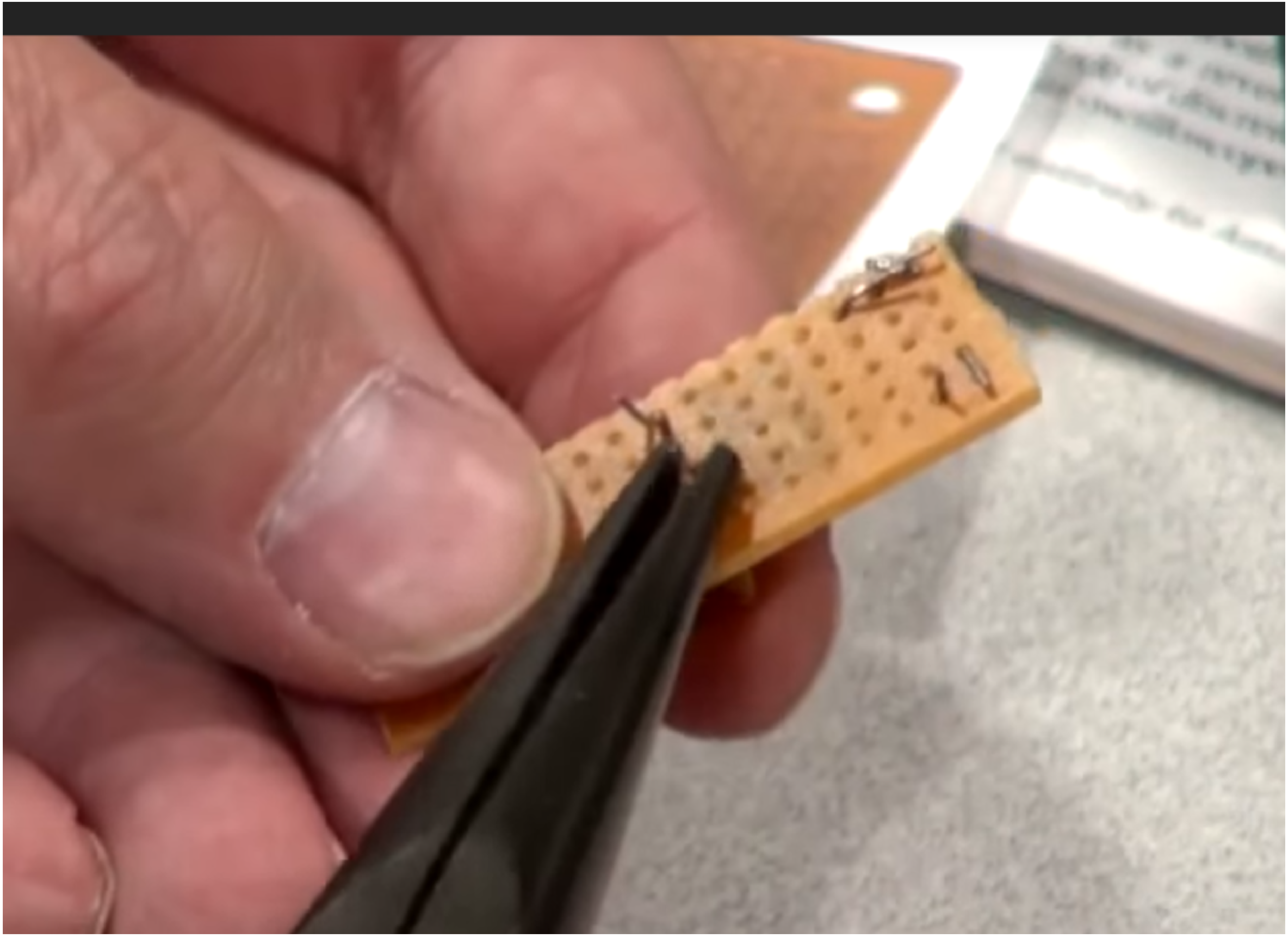

Devoted entirely to

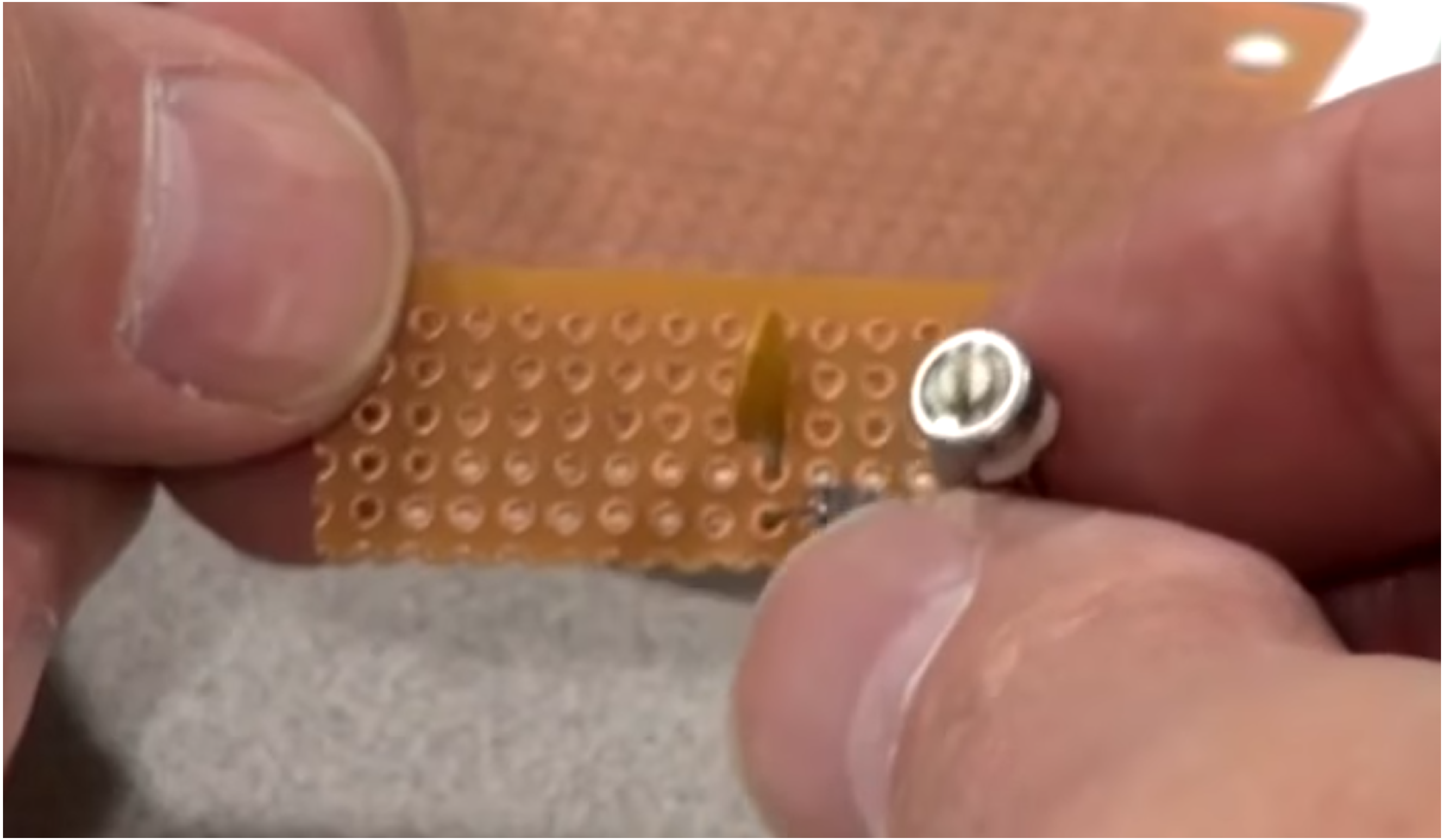


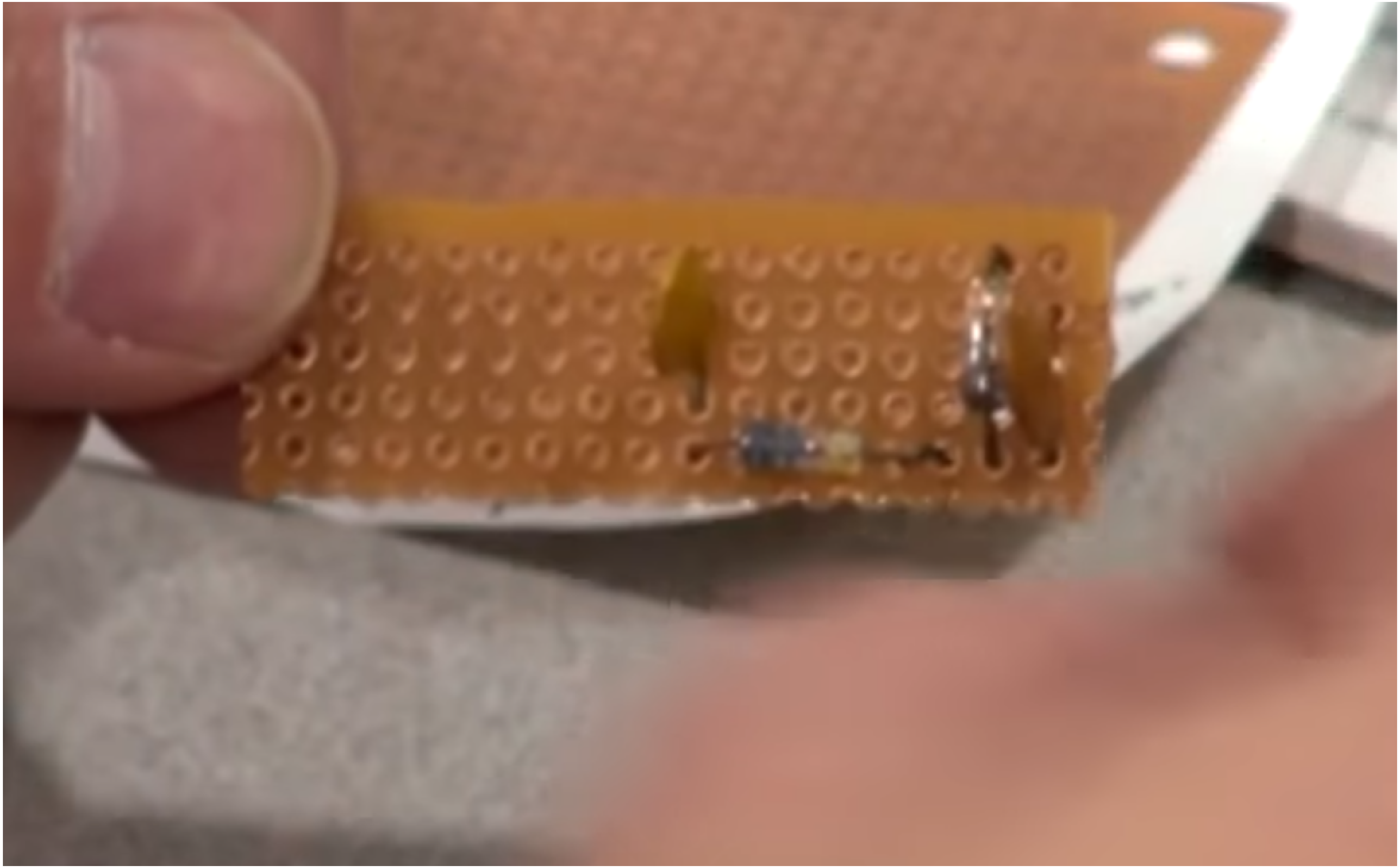


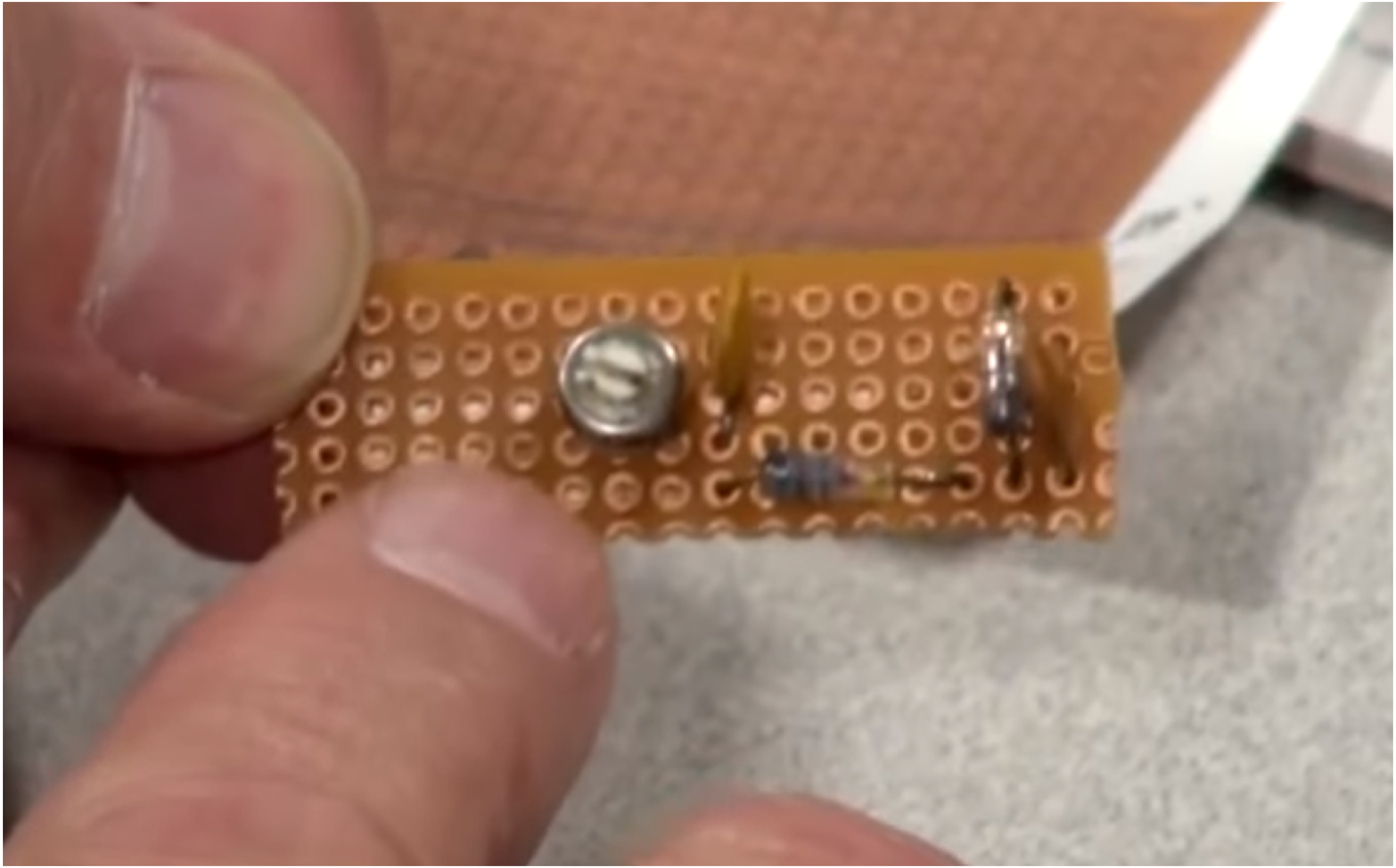


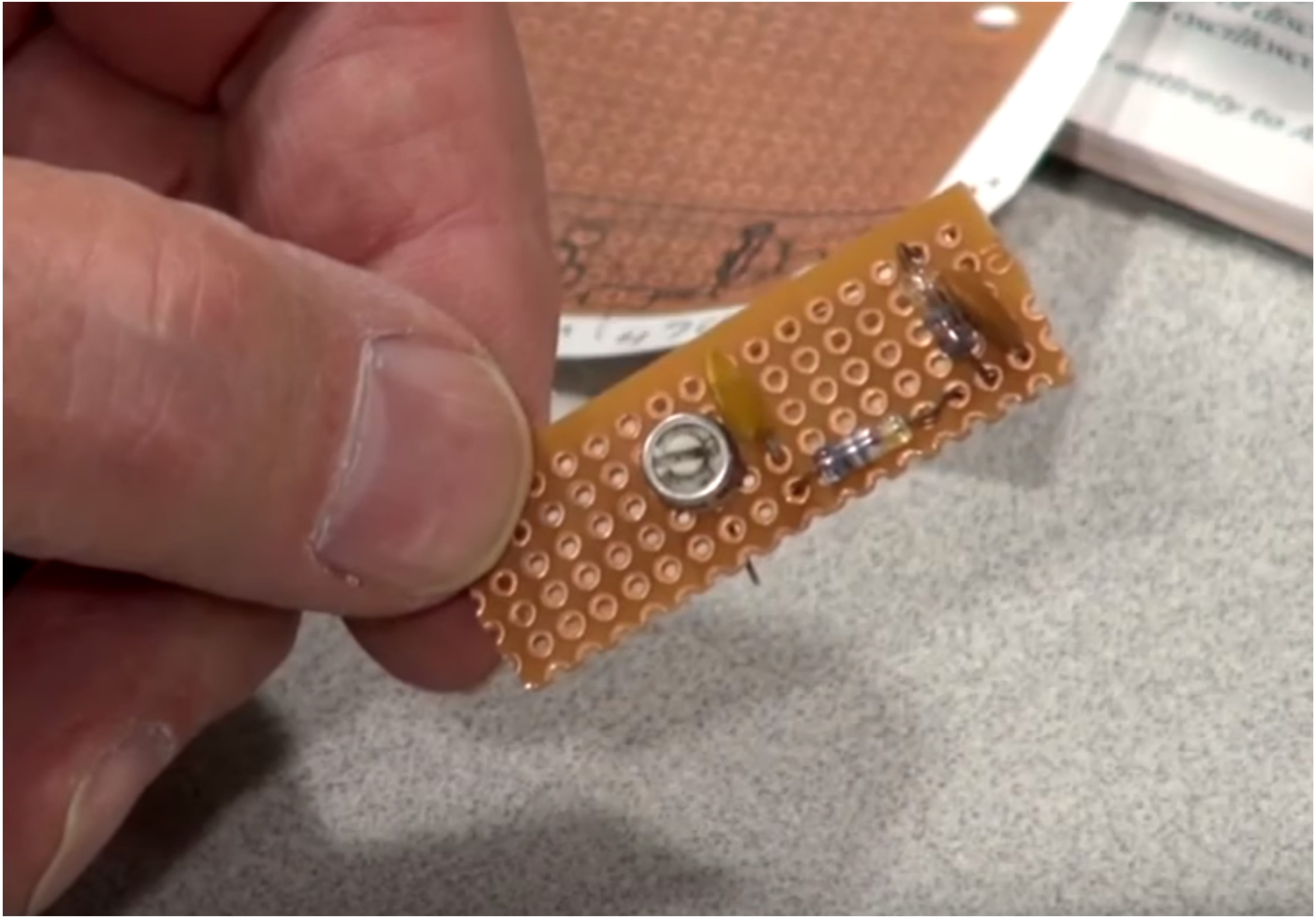


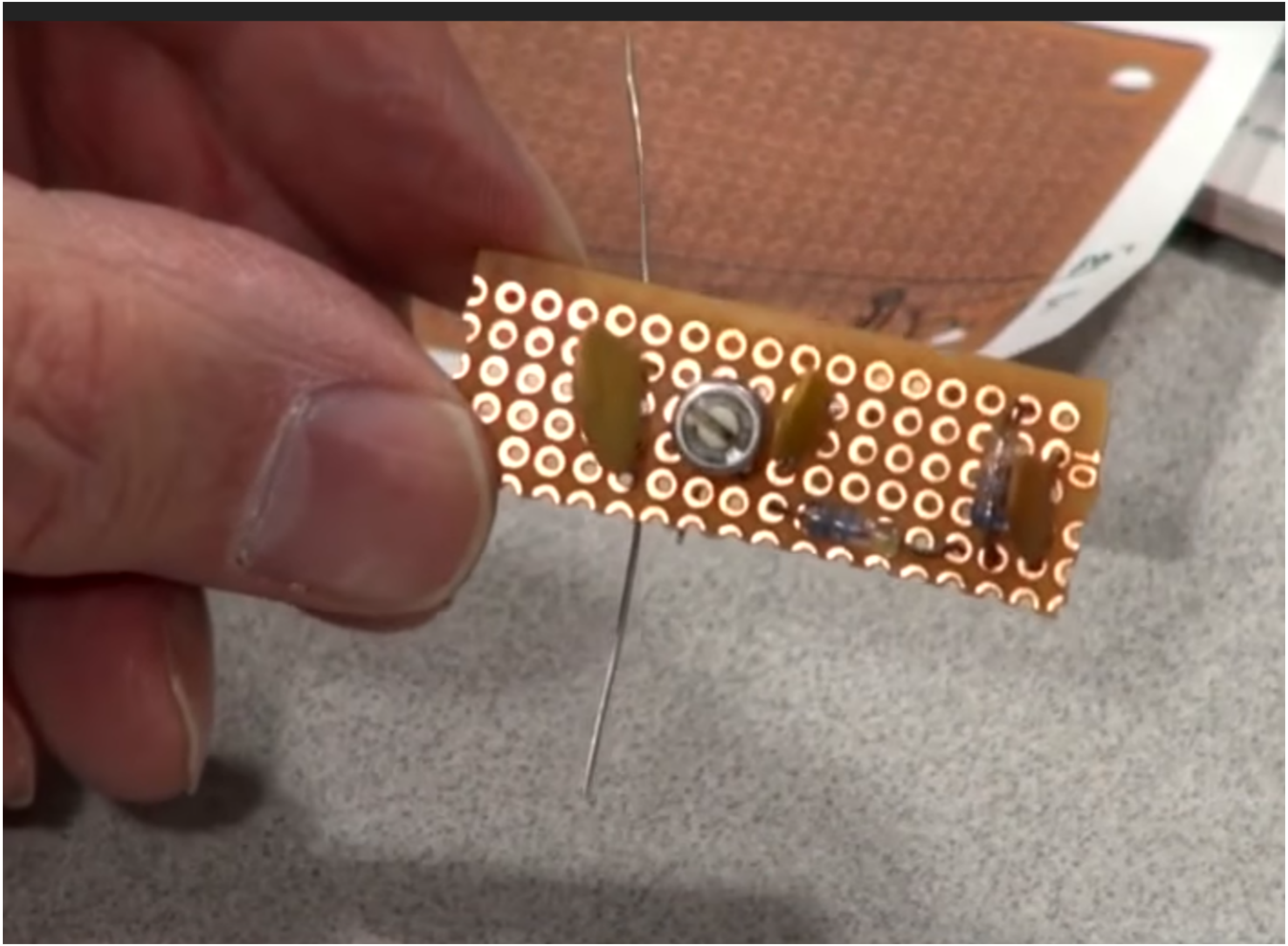


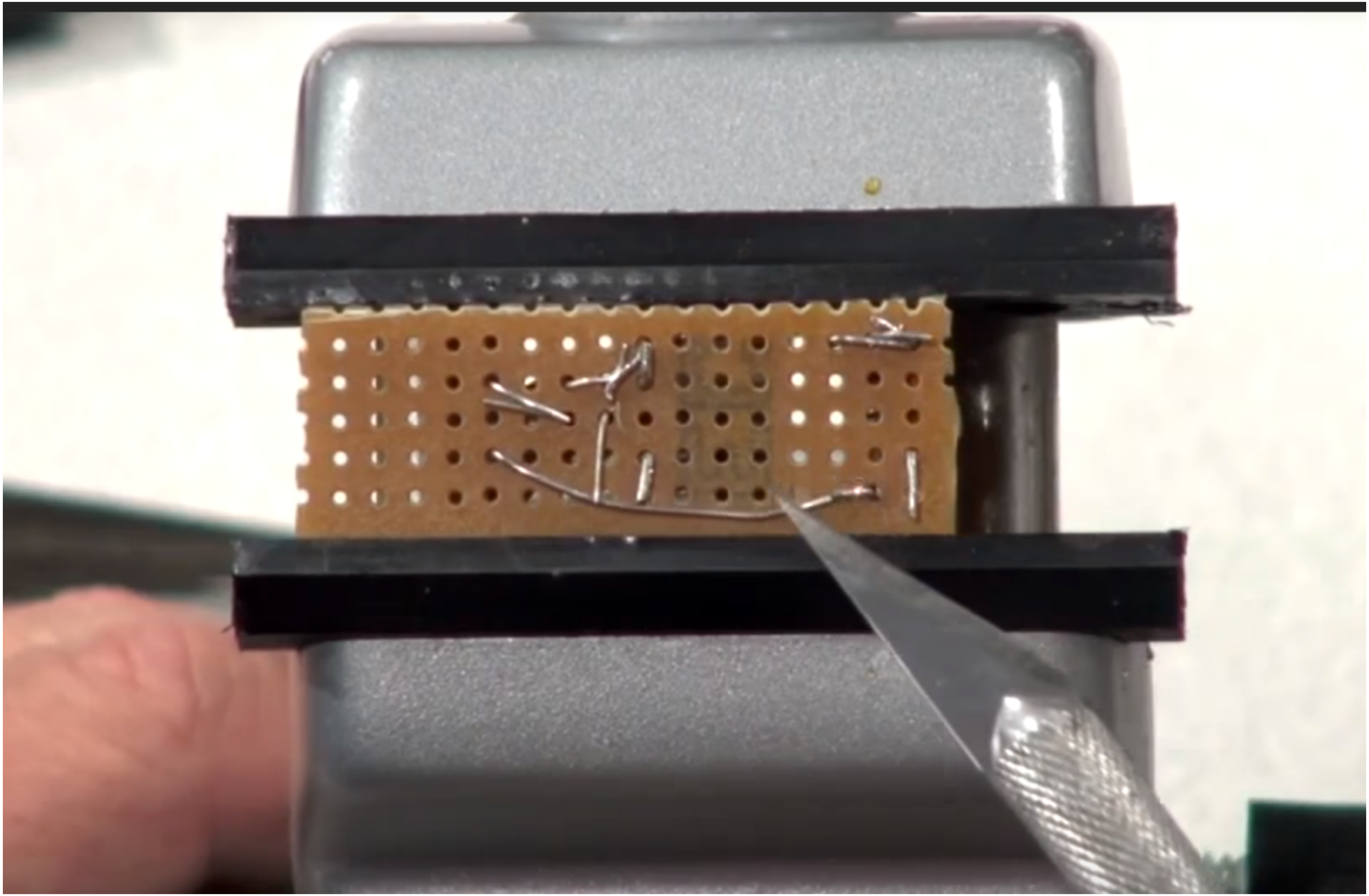


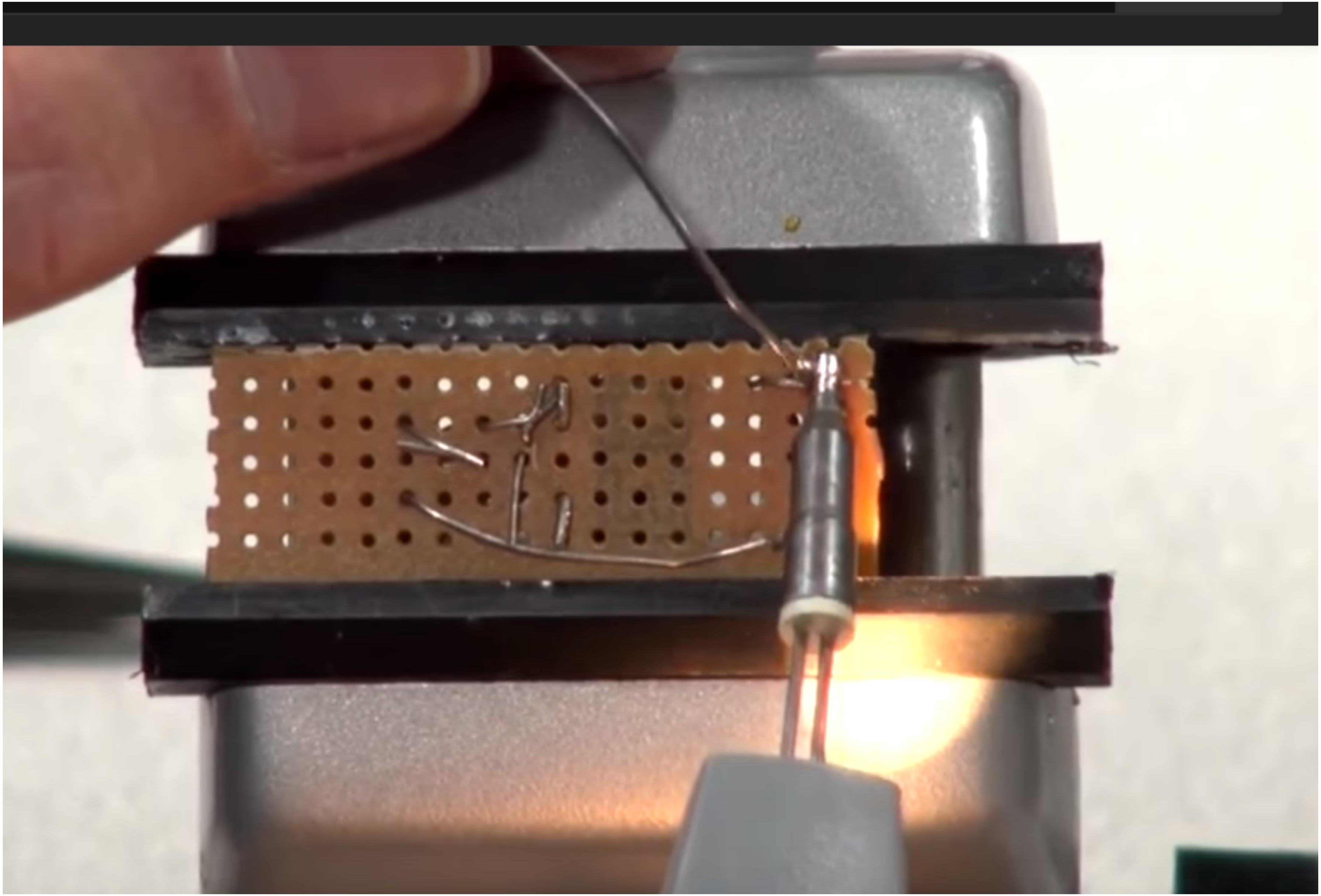


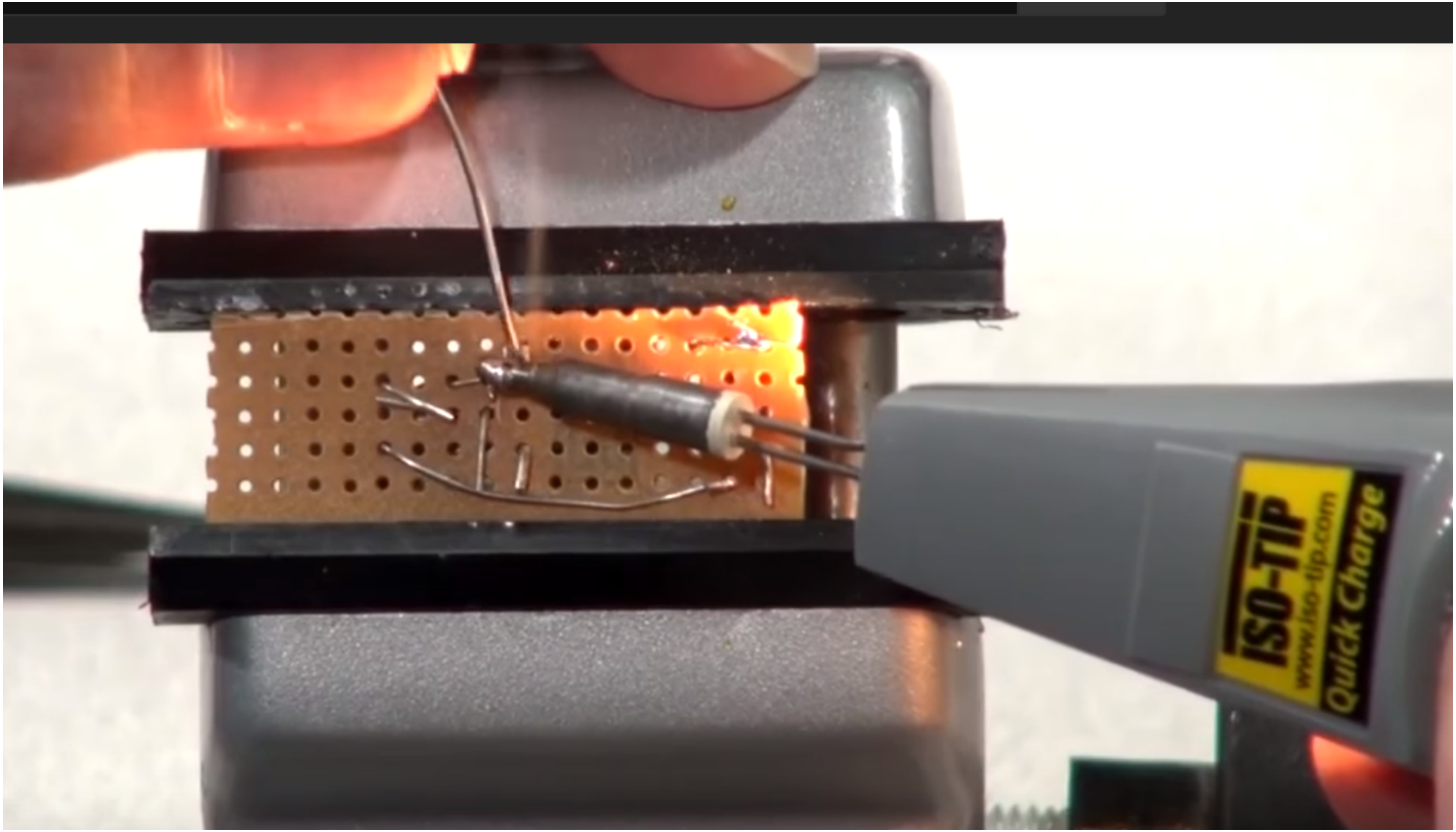


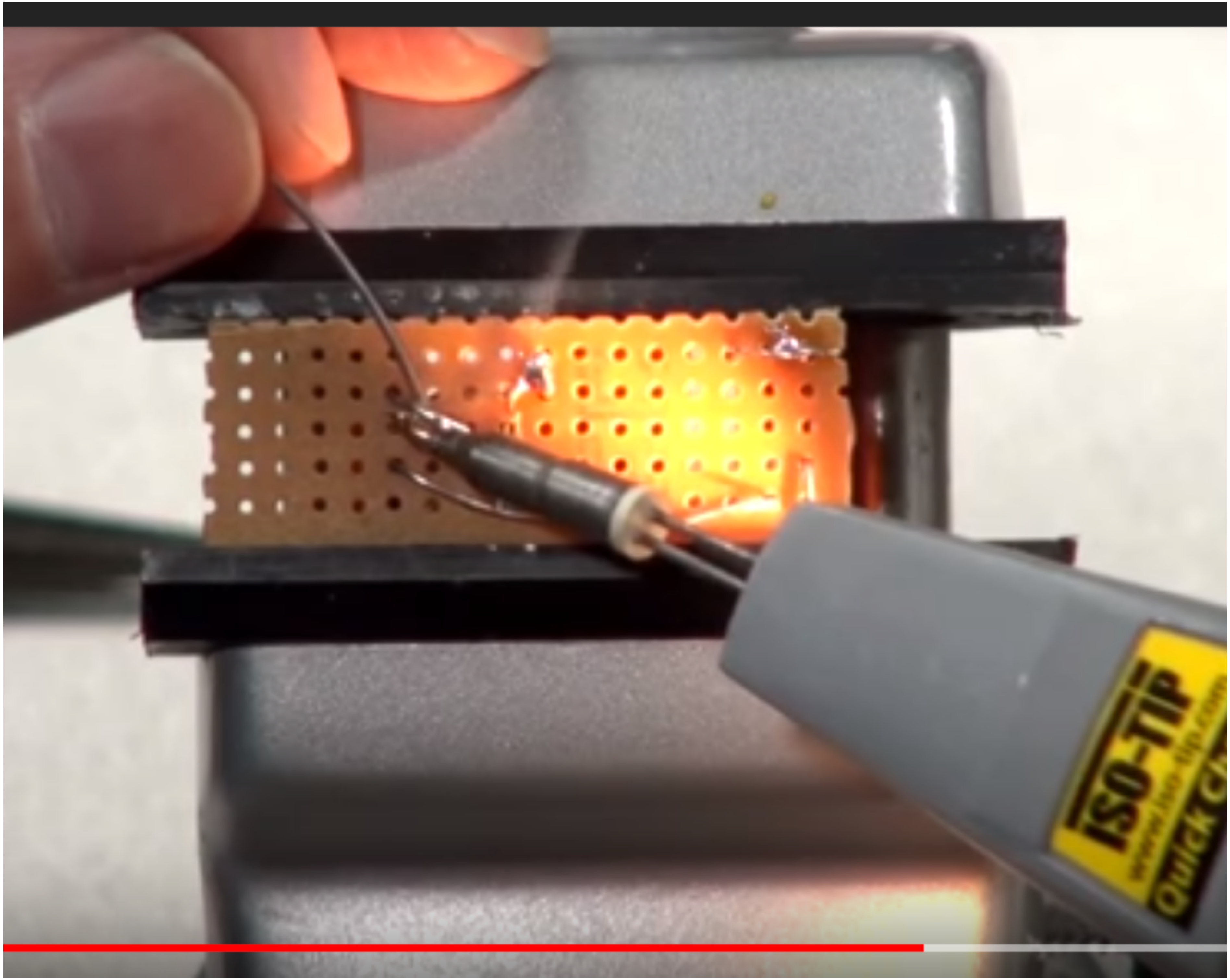


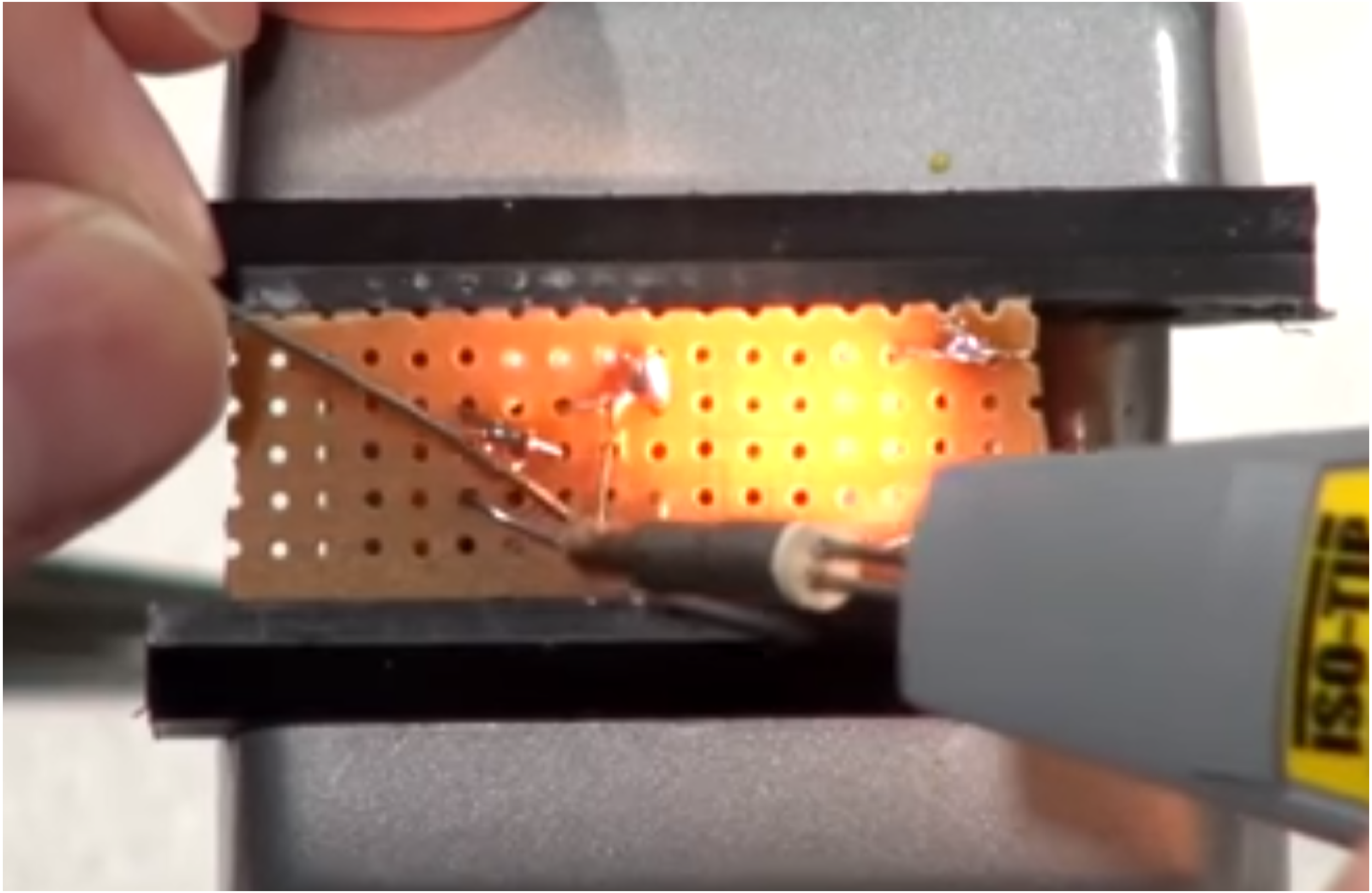







ISO-TIP
www.iso-tip.com
Quick Charge


ISO-TIP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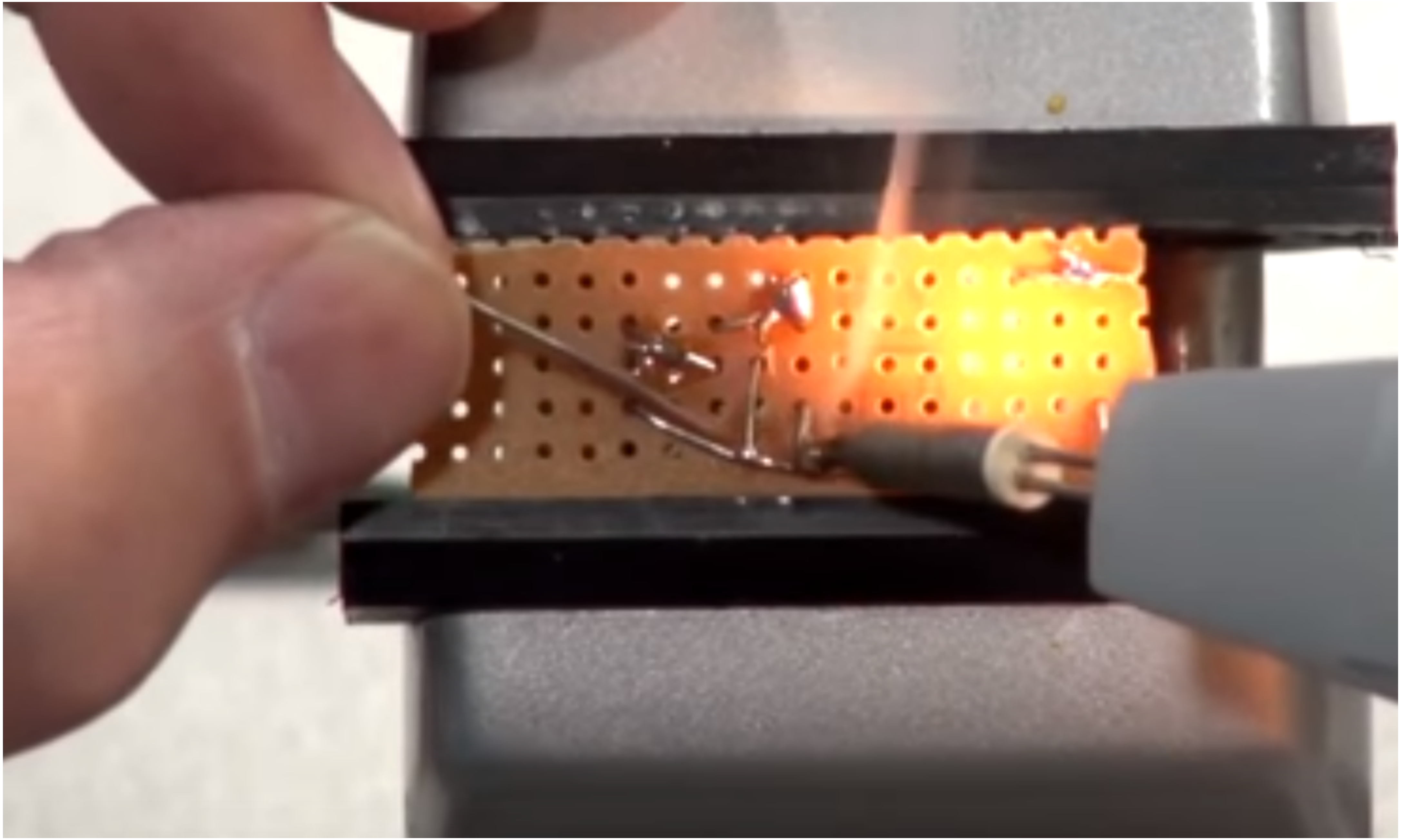
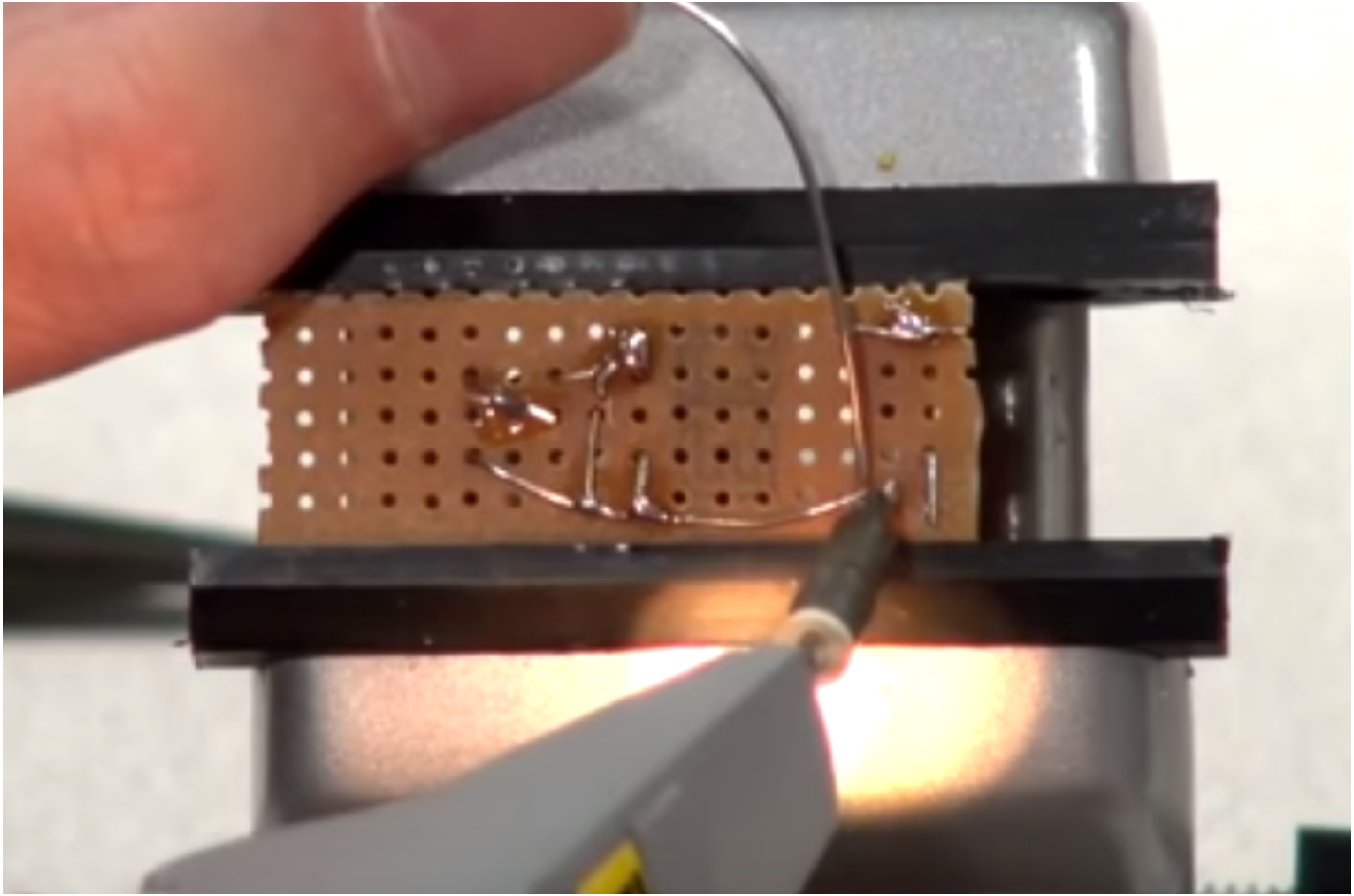
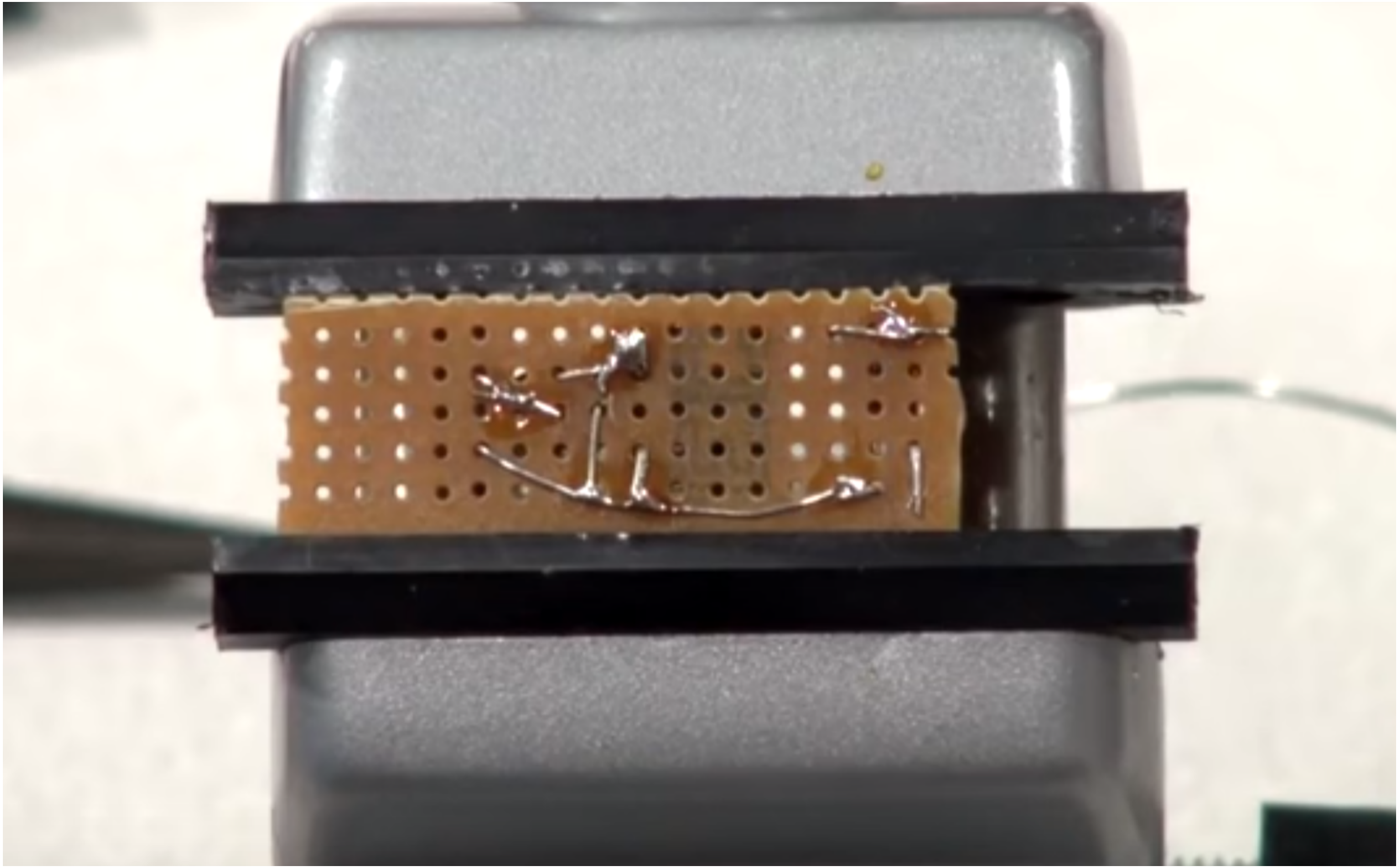
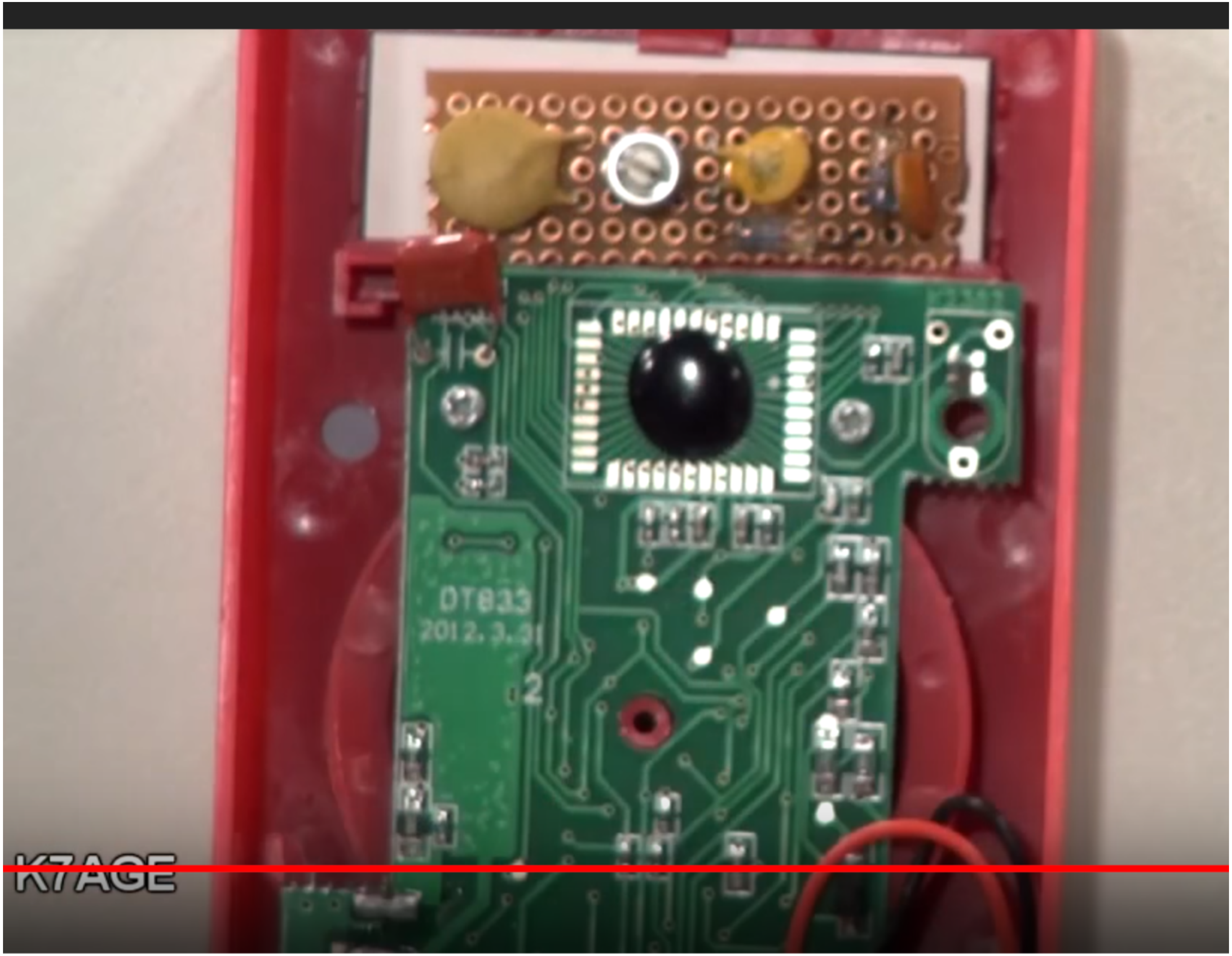
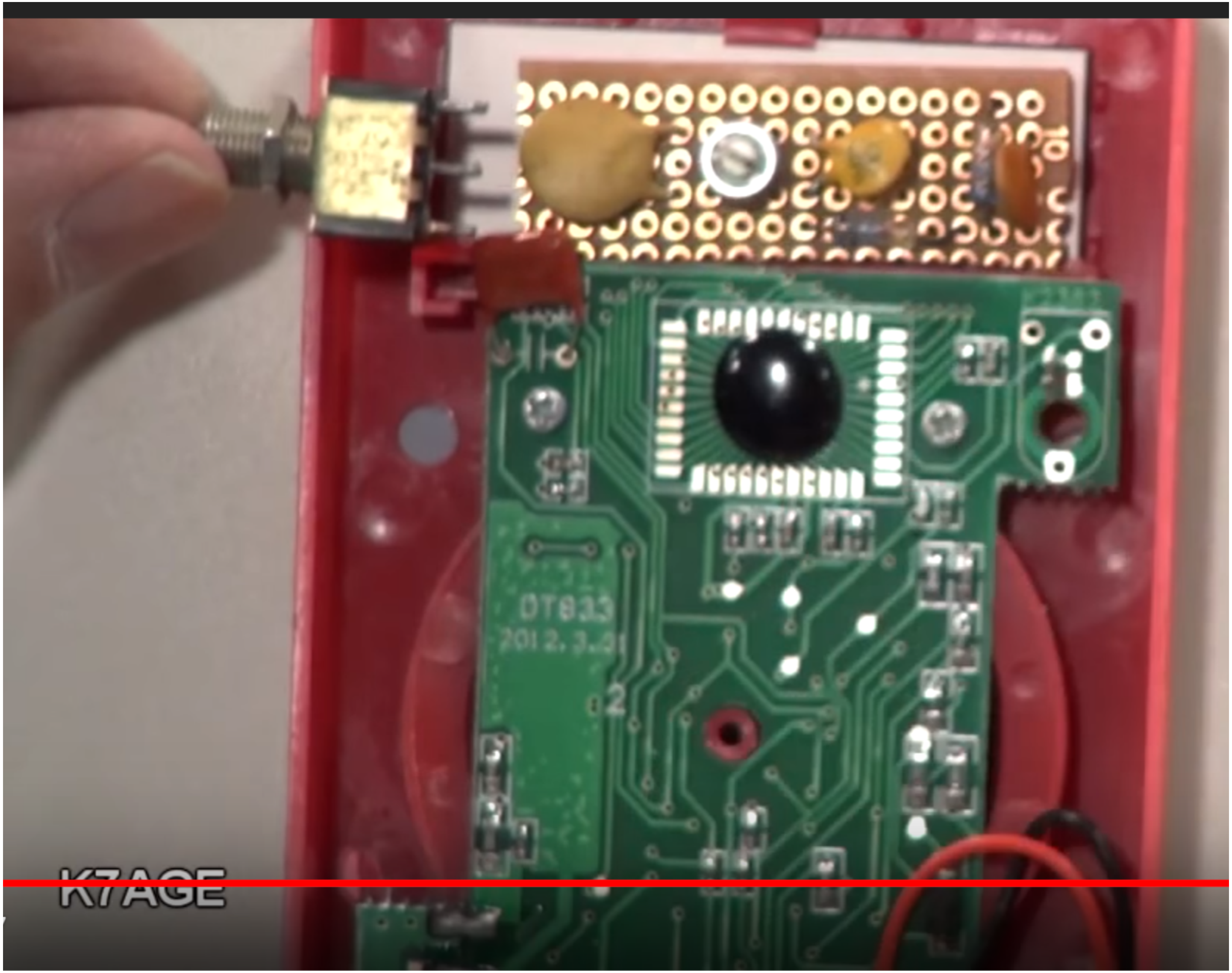
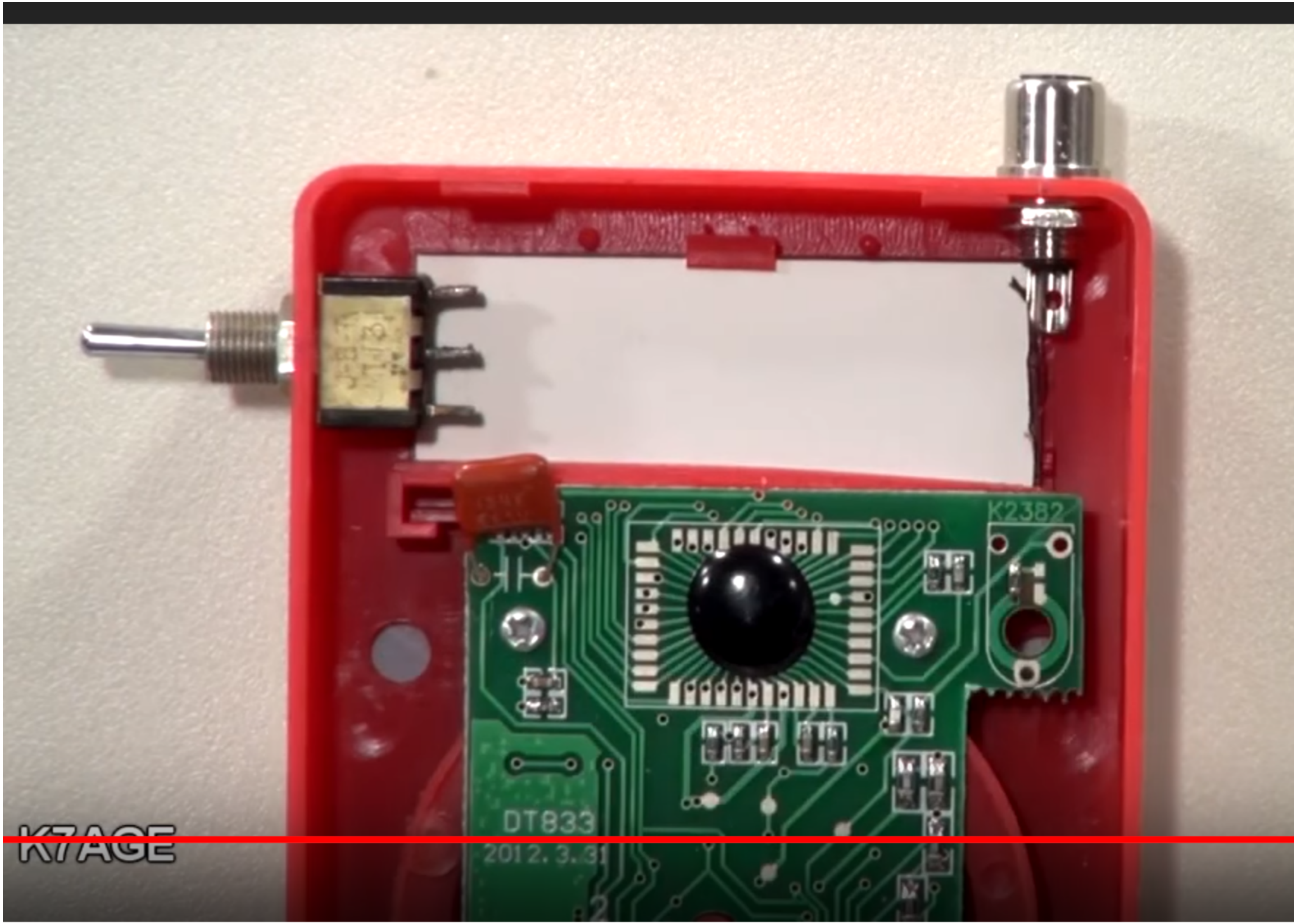




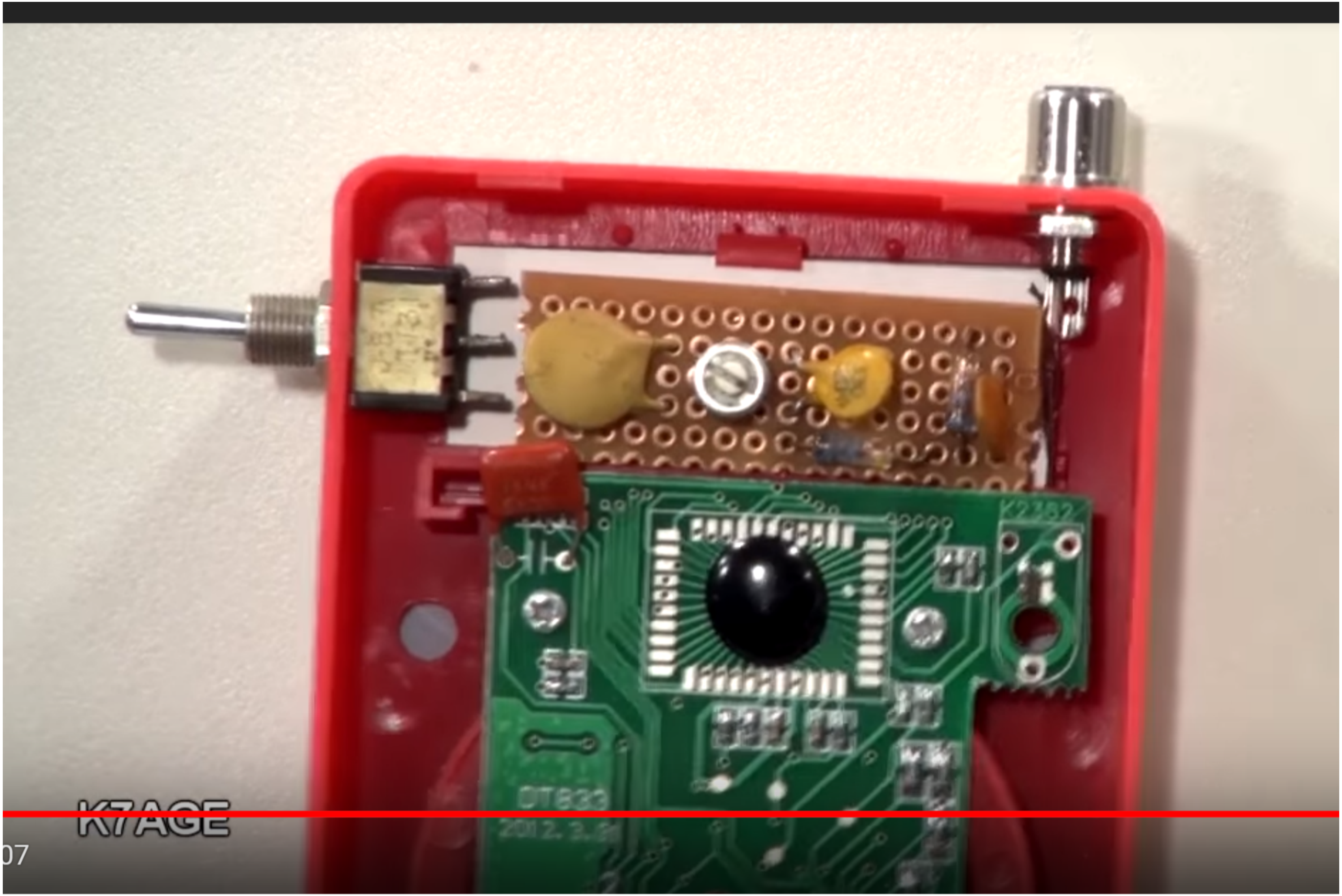


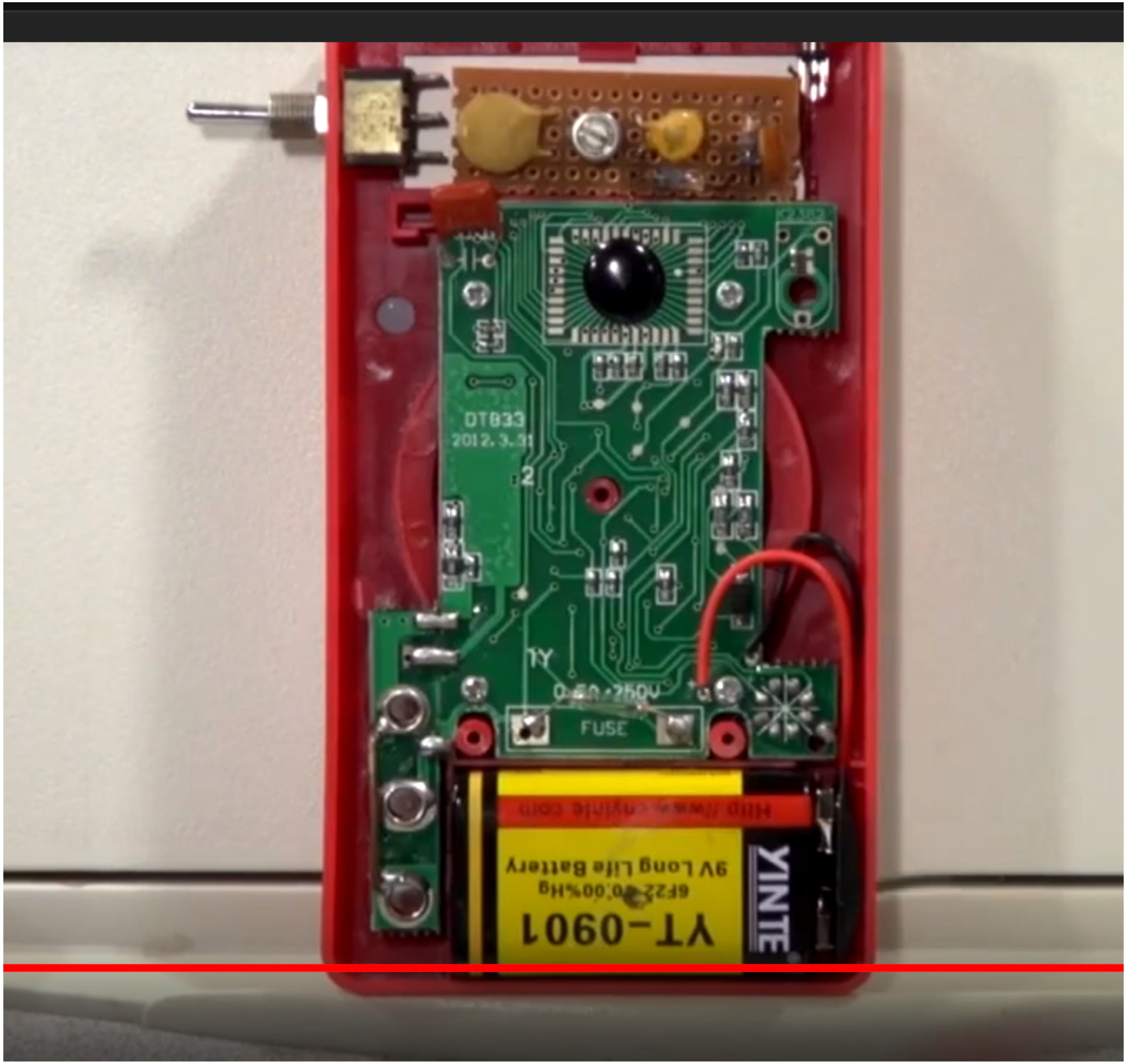

DT833
2012.3.31
K7AGE

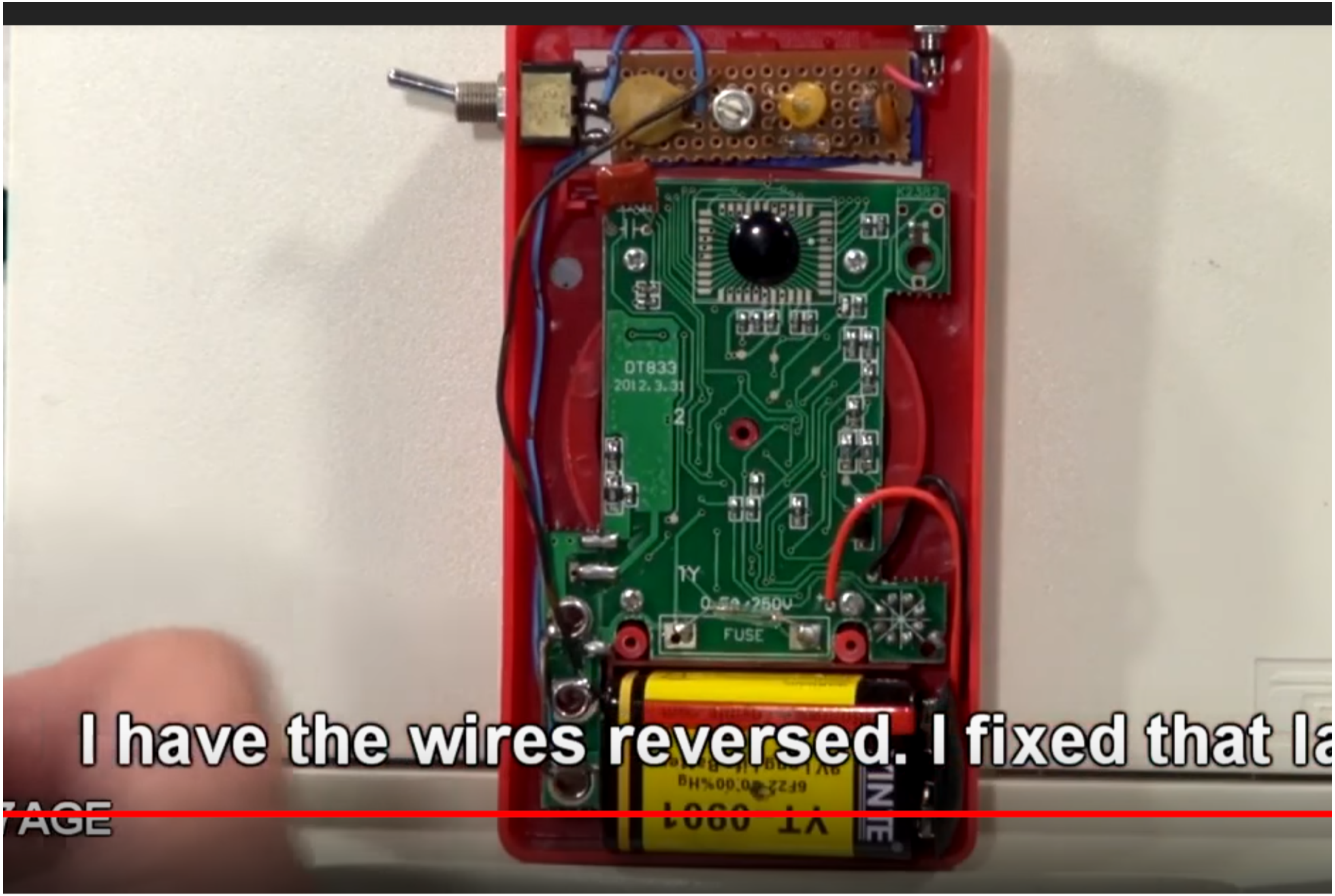

DT833
2012.3.01
K7AGE

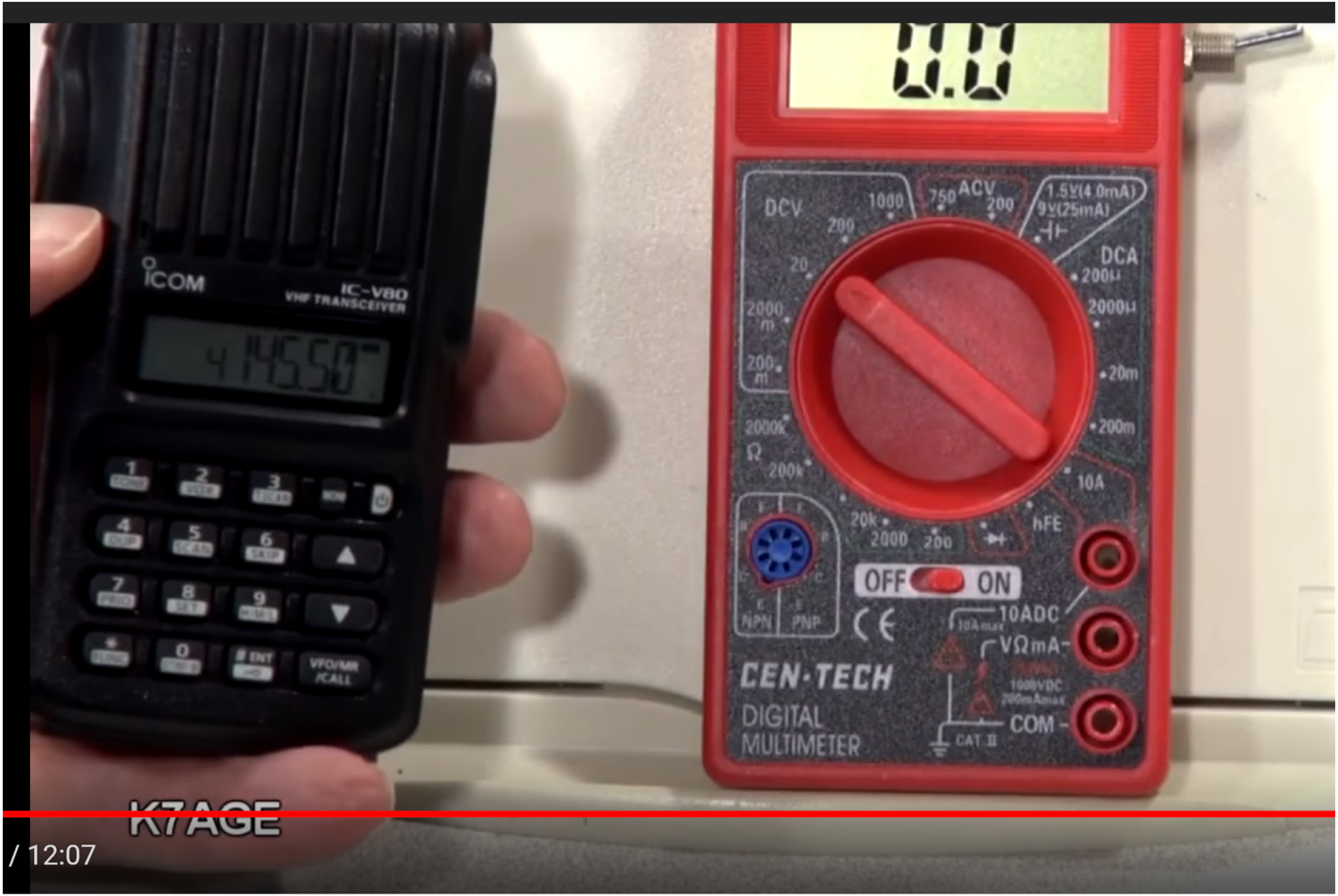


Up next


K7AGE
DT833


DT833
2012.3.31
FUSE
YT-0901
9V Long Life Battery
YINTE


DT833
2012.3.31
FUSE
I have the wires reversed. I fixed that la


ICOM
IC-V80
VHF TRANSCEIVER
CEN-TECH
DIGITAL
MULTIMETER
DCV
ACV
DCA
OFF
ON
10ADC
COM
K7AGE
/ 12:07

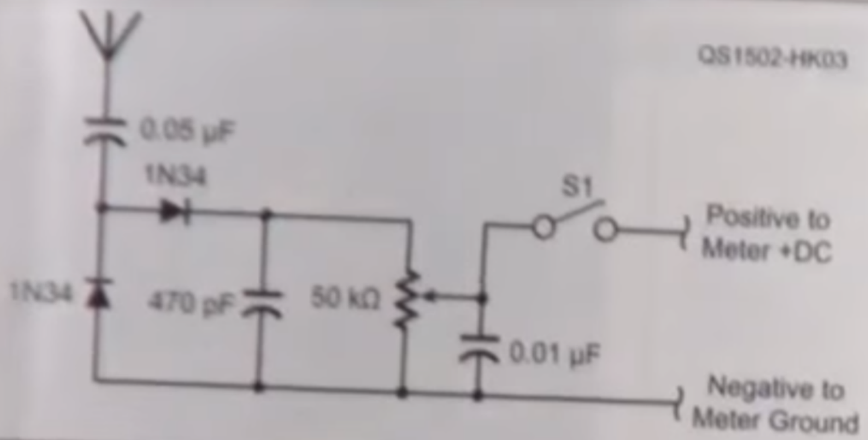


Figure 3 — The schematic for the field strength detector board.

Figure 5 — The original multimeter and its up-

Figure 4 — The detector board mounted inside the multimeter case. The bottom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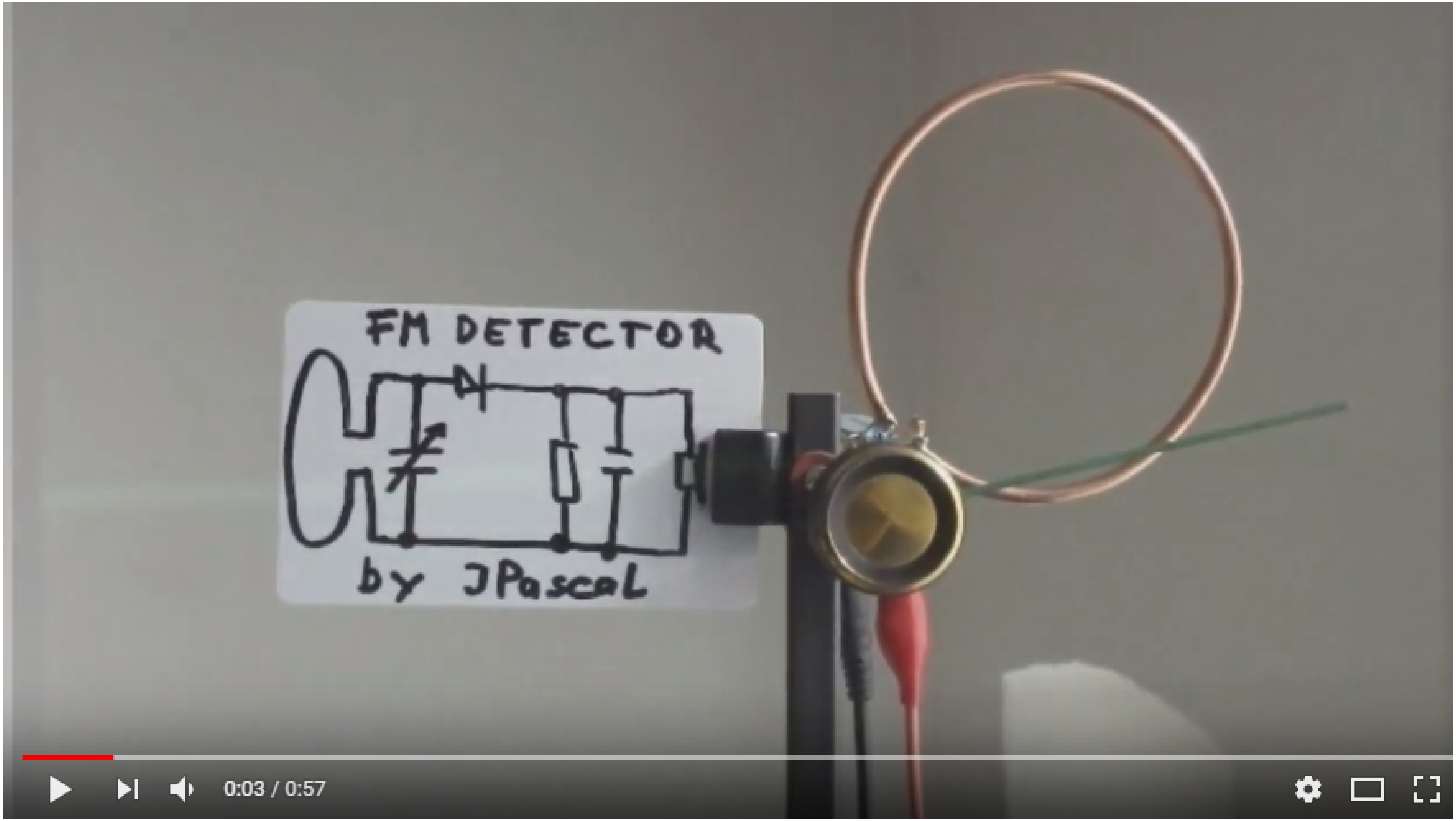
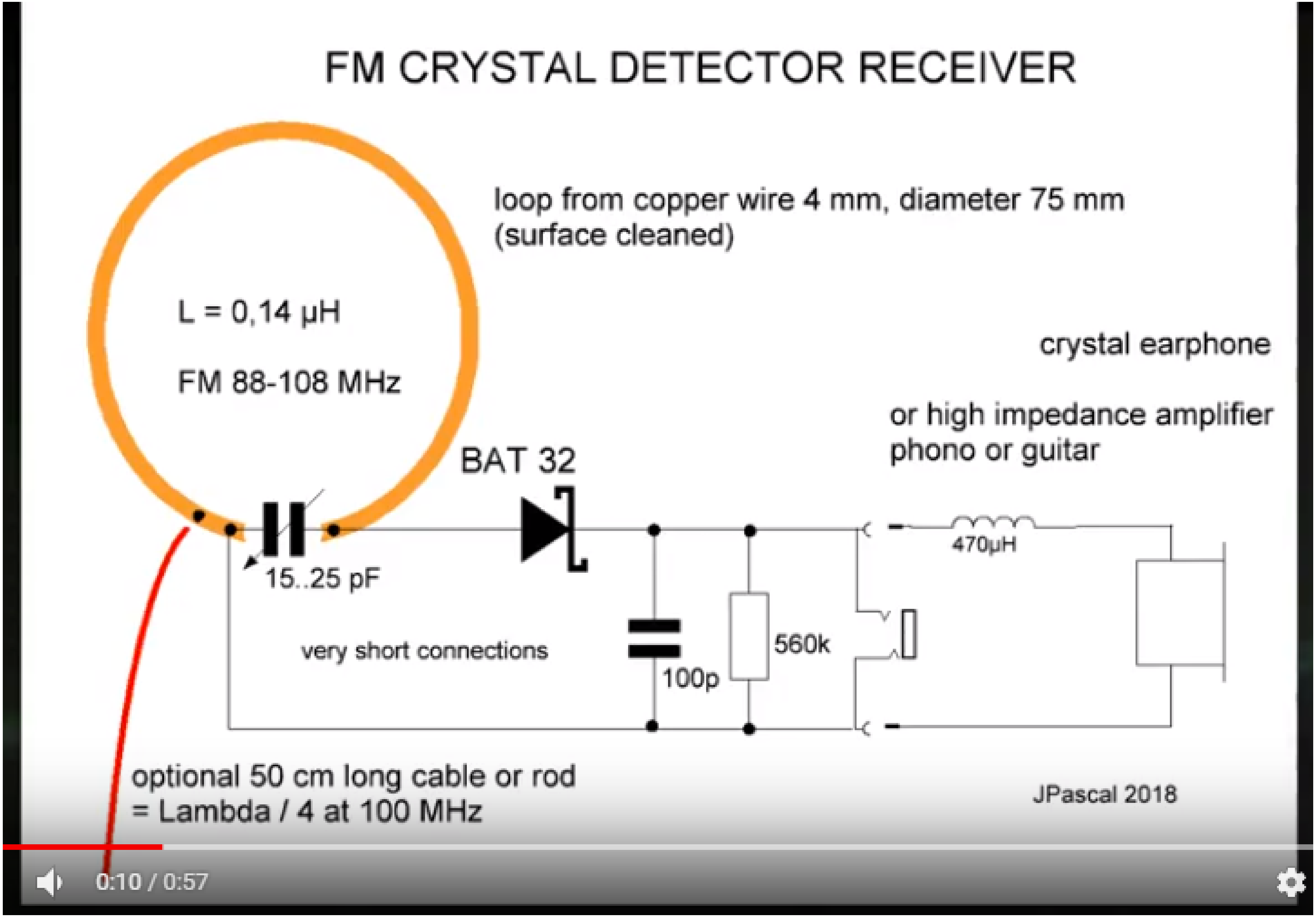
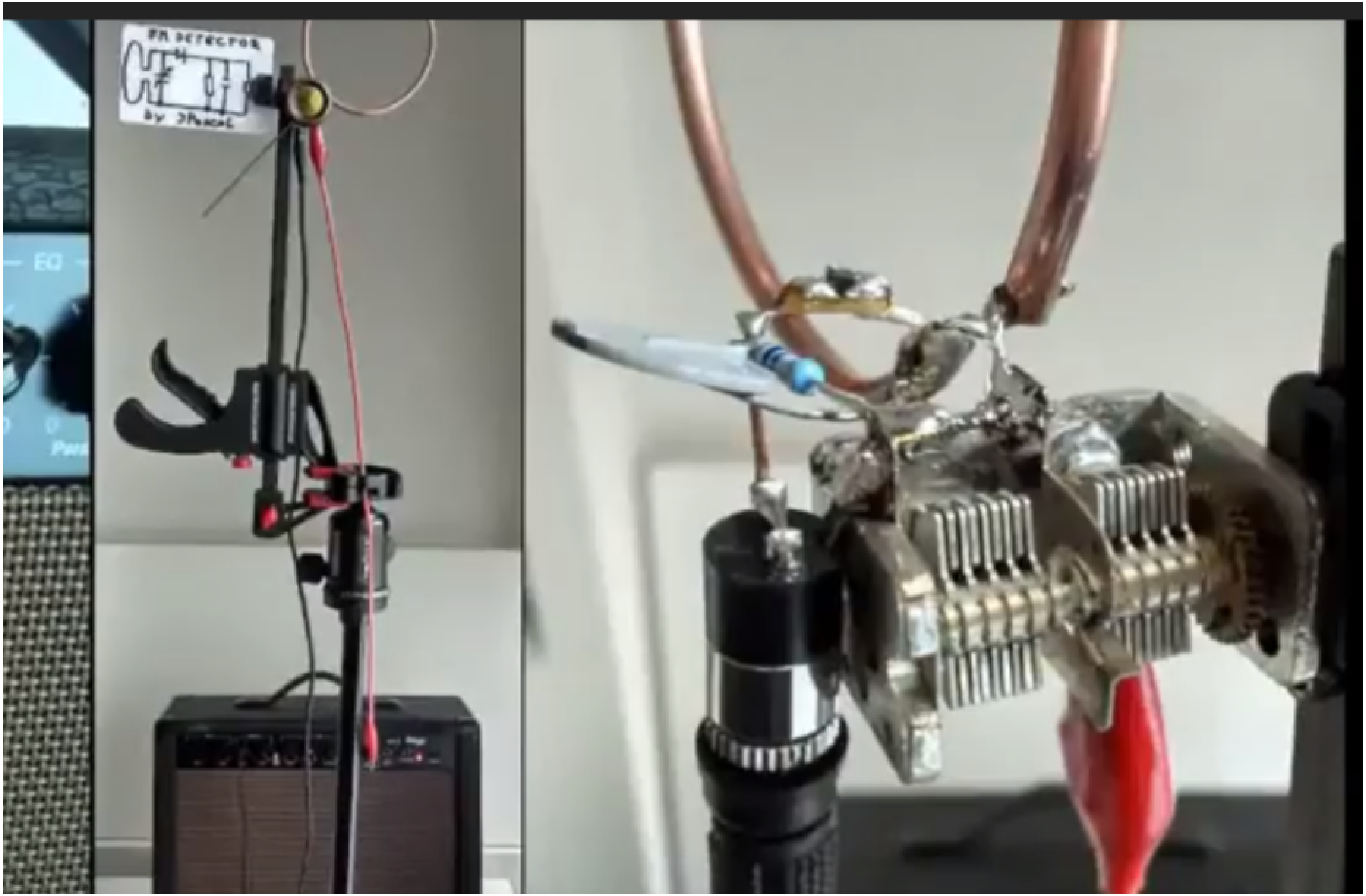
© www.petervis.com

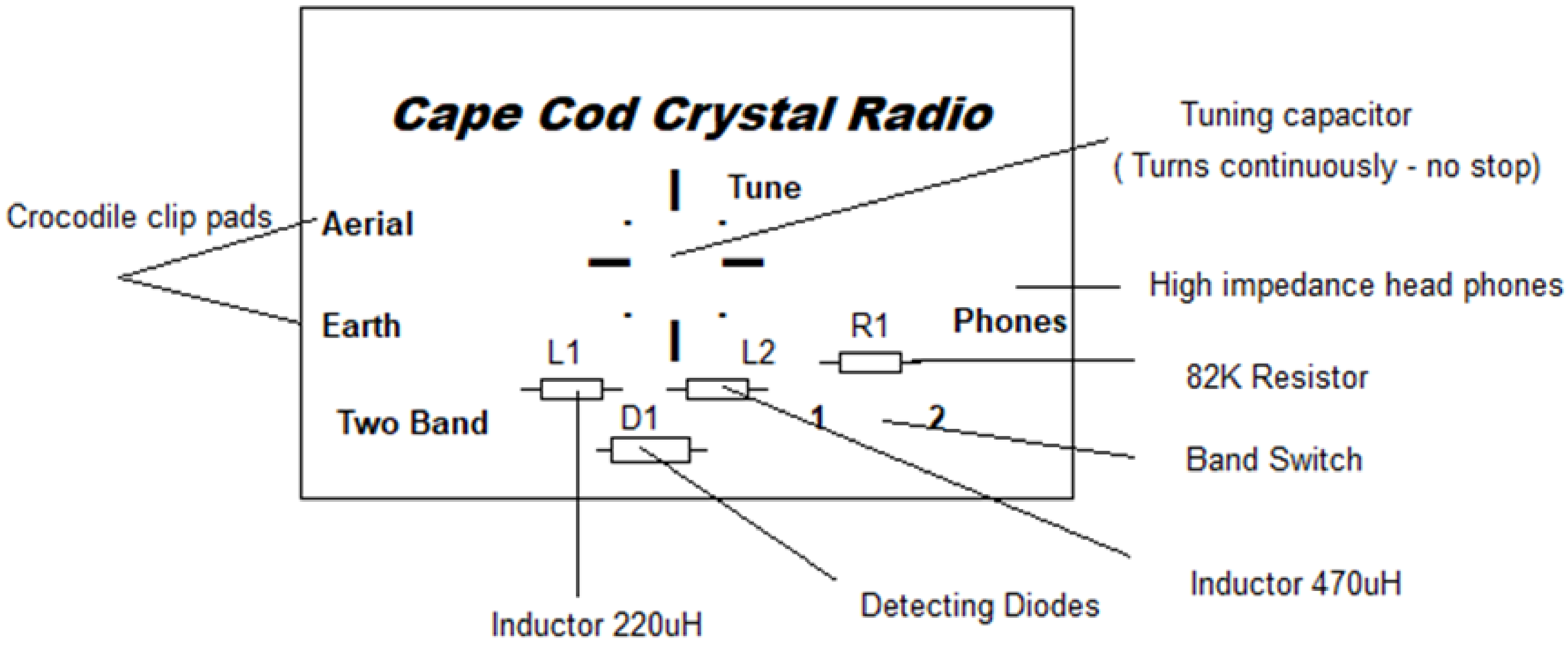


FM Crystal Detector Live Recordings


FM CRYSTAL DETECTOR RECEIVER
loop from copper wire 4 mm, diameter 75 mm
(surface cleaned)
L = 0,14 µH
FM 88-108 MHz
crystal earphone
or high impedance amplifier
phono or guitar
BAT 32
470µH
15..25 pF
very short connections
100p
560k
optional 50 cm long cable or rod
= Lambda / 4 at 100 MHz
JPascal 2018
0:10 / 0:57


FM DETECTOR
EQ


Cape Cod Crystal Radio
Tune
Aerial
Earth
Phones
R1
L1
L2
Two Band
D1



1. Solder D1 the germanium diode. RED band to the right.

2. Solder L1 220uH inductor (Red Red Brown Silver)

3. Solder L2 470uH Inductor (Red Violet Brown Silver)

3. Solder R1 82K ohm resistor (Grey Red Black Red) Above Switch

4. Solder band change switch, make sure it is parallel with the board

5. Solder the 3.5mm earphone socket, ensure it is parallel to the board before you solder and the locating pins align with board holes.

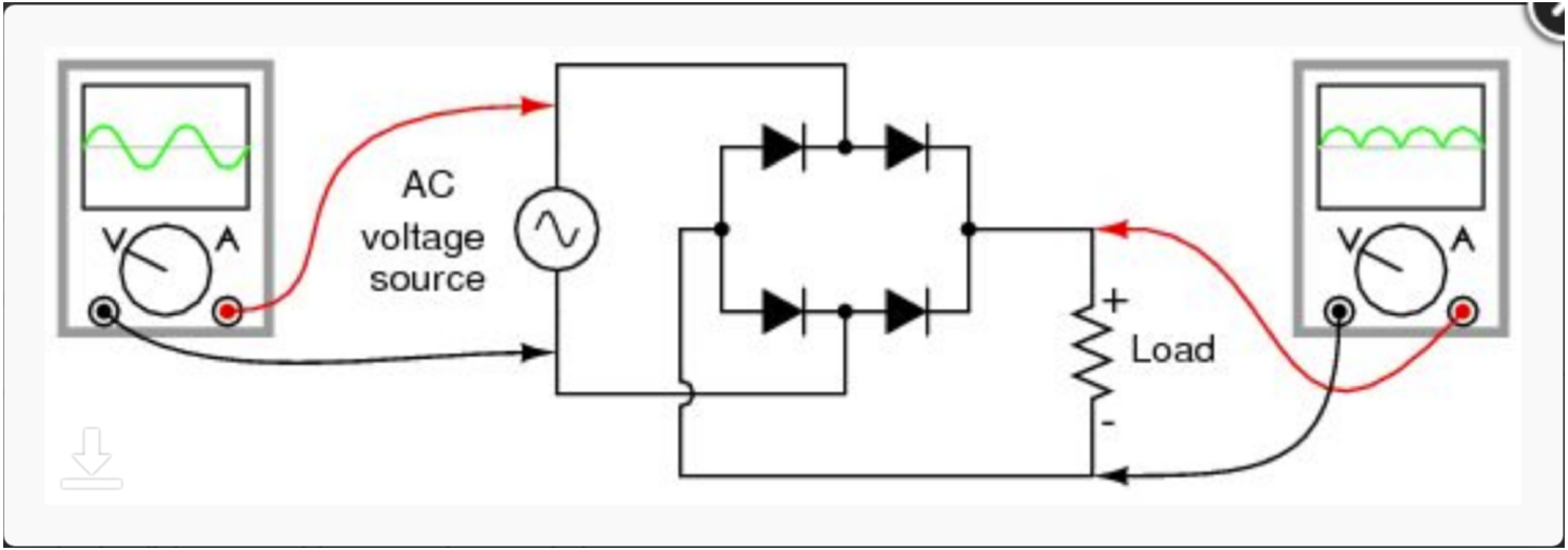
6. Solder the variable capacitor 120pF. Any way it is not polarity sensitive.

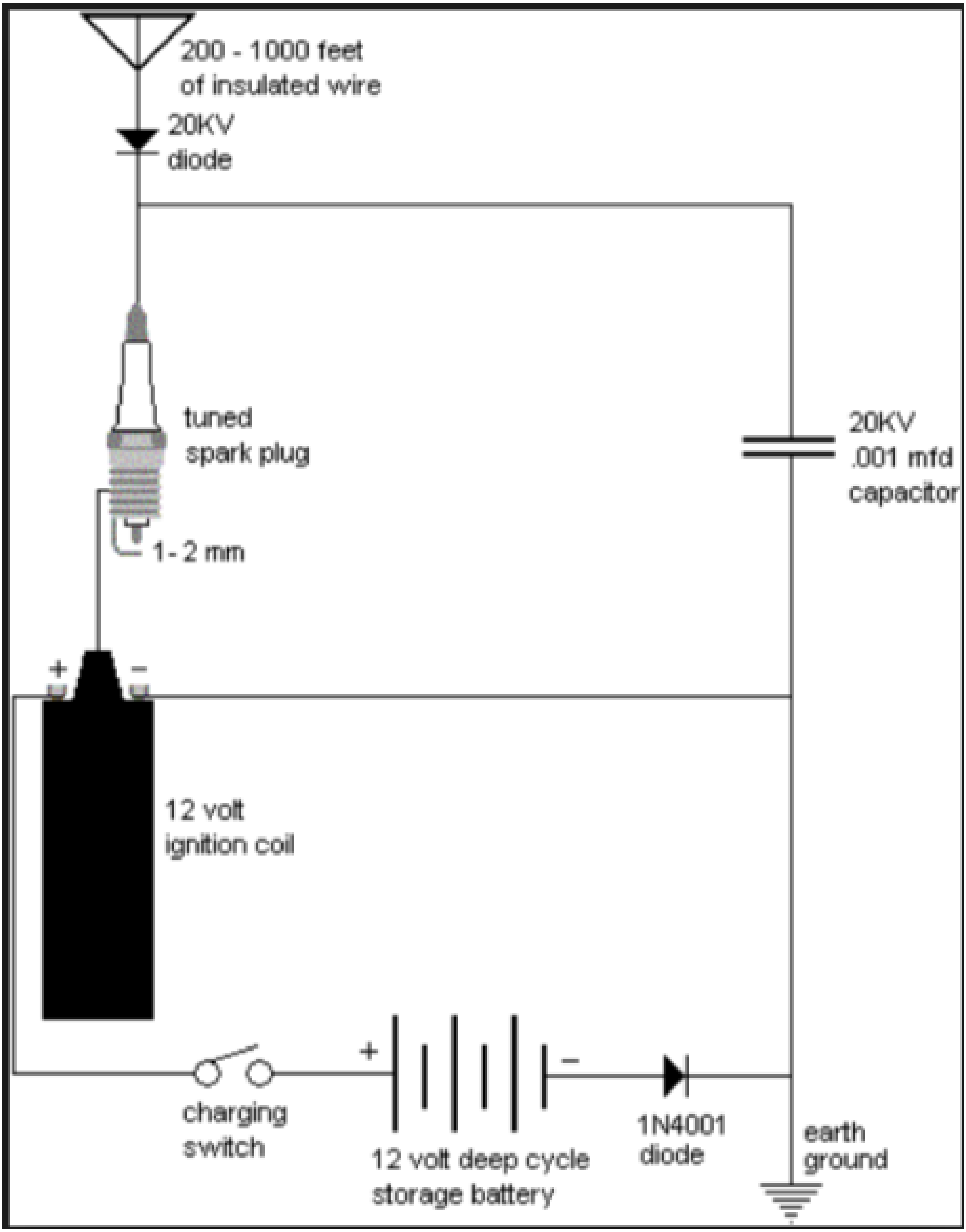
7. Two silver pins are provided for aerial and earth connections,just clip the crocodile clips to these pins or, leave these pins off and connect to the pads on the board. For portable use and younger children best to leave these pins off the board.

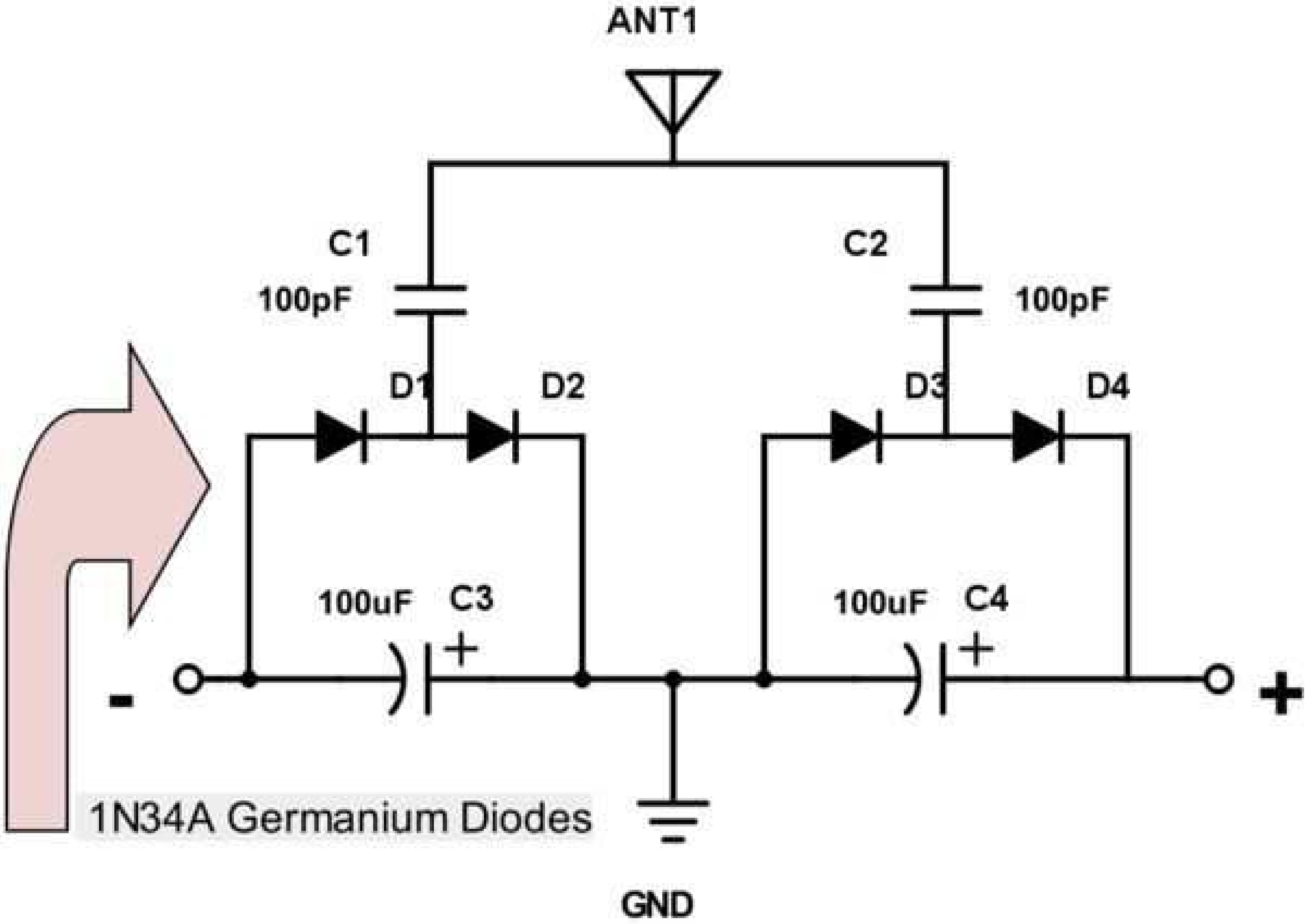
Connect the crocodile clips for the earth and aerial wires. Strip approximately 25mm of the insulation, thread through hole and crimp both the insulated part and the bare wire with pliers.

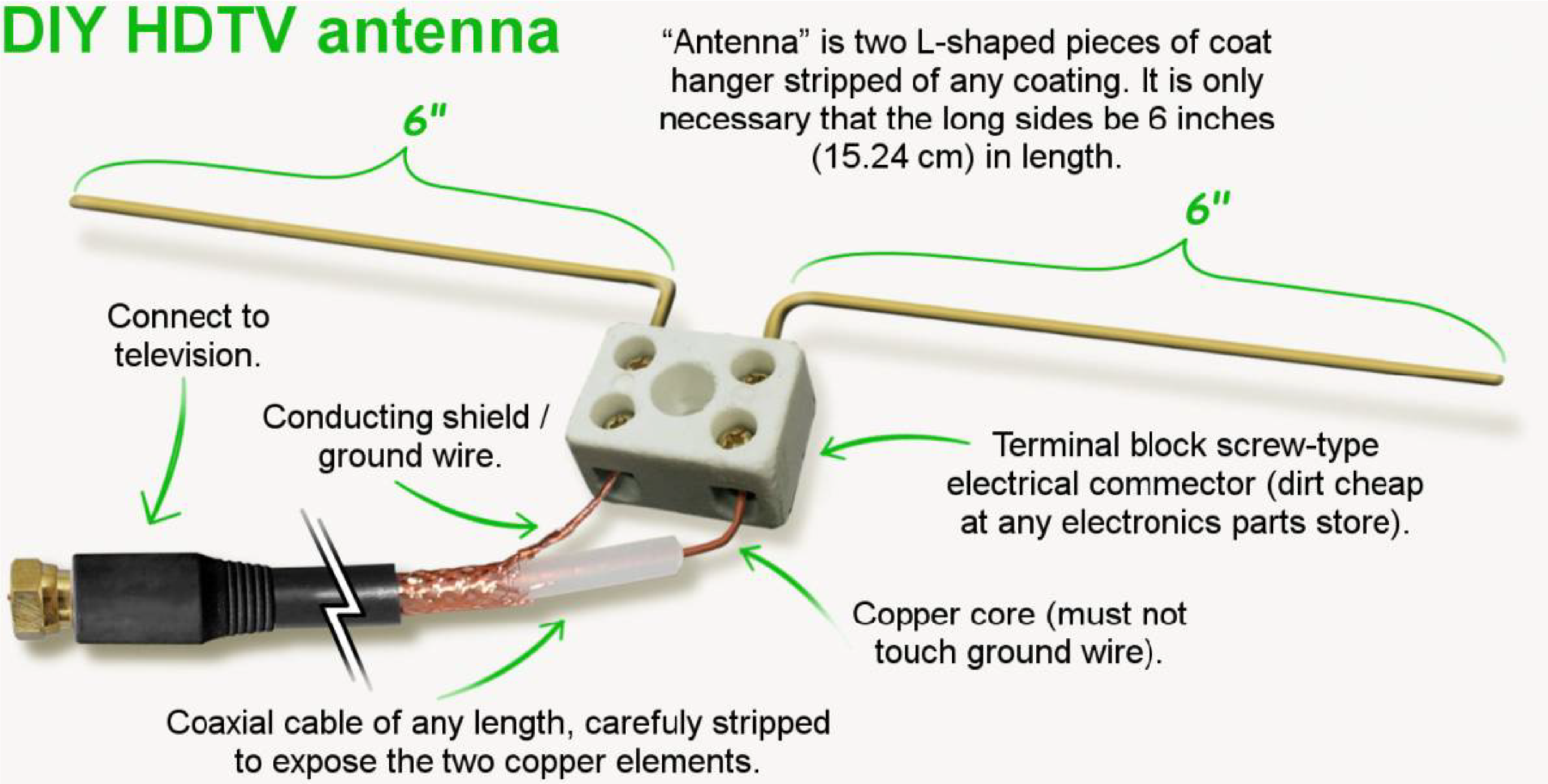
L1 is an inductor, a 220uH coil in series series with L2 a 470uH inductor. The switch shorts out the L2 in ther band 1 position. D1 is a specially selected germanium diode to give optimum performance in this particular circuit. R1 is a 82K resistor across the high impedance output. The variable capacitor is a 9 - 120pF capacitor

Getting Started . Plug the headphones into the socket. Holding your thumb behind the socket when plugging in will avoid any stress on the solder joints.To get the strongest signals in your area you will need to experiment if


V
A
AC
voltage
source
+
Load
-
V
A


200 - 1000 feet
of insulated wire
20KV
diode
tuned
spark plug
1-2 mm
20KV
.001 mfd
capacitor
+
−
12 volt
ignition coil
+
−
charging
switch
12 volt deep cycle
storage battery
1N4001
diode
earth
ground


ANT1
C1
100pF
C2
100pF
D1
D2
D3
D4
100uF
C3
100uF
C4
-
+
1N34A Germanium Diodes
GND


DIY HDTV antenna
"Antenna" is two L-shaped pieces of coat hanger stripped of any coating. It is only necessary that the long sides be 6 inches (15.24 cm) in length.
6"
6"
Connect to television.
Conducting shield / ground wire.
Terminal block screw-type electrical commector (dirt cheap at any electronics parts store).
Copper core (must not touch ground wire).
Coaxial cable of any length, carefuly stripped to expose the two copper elements.

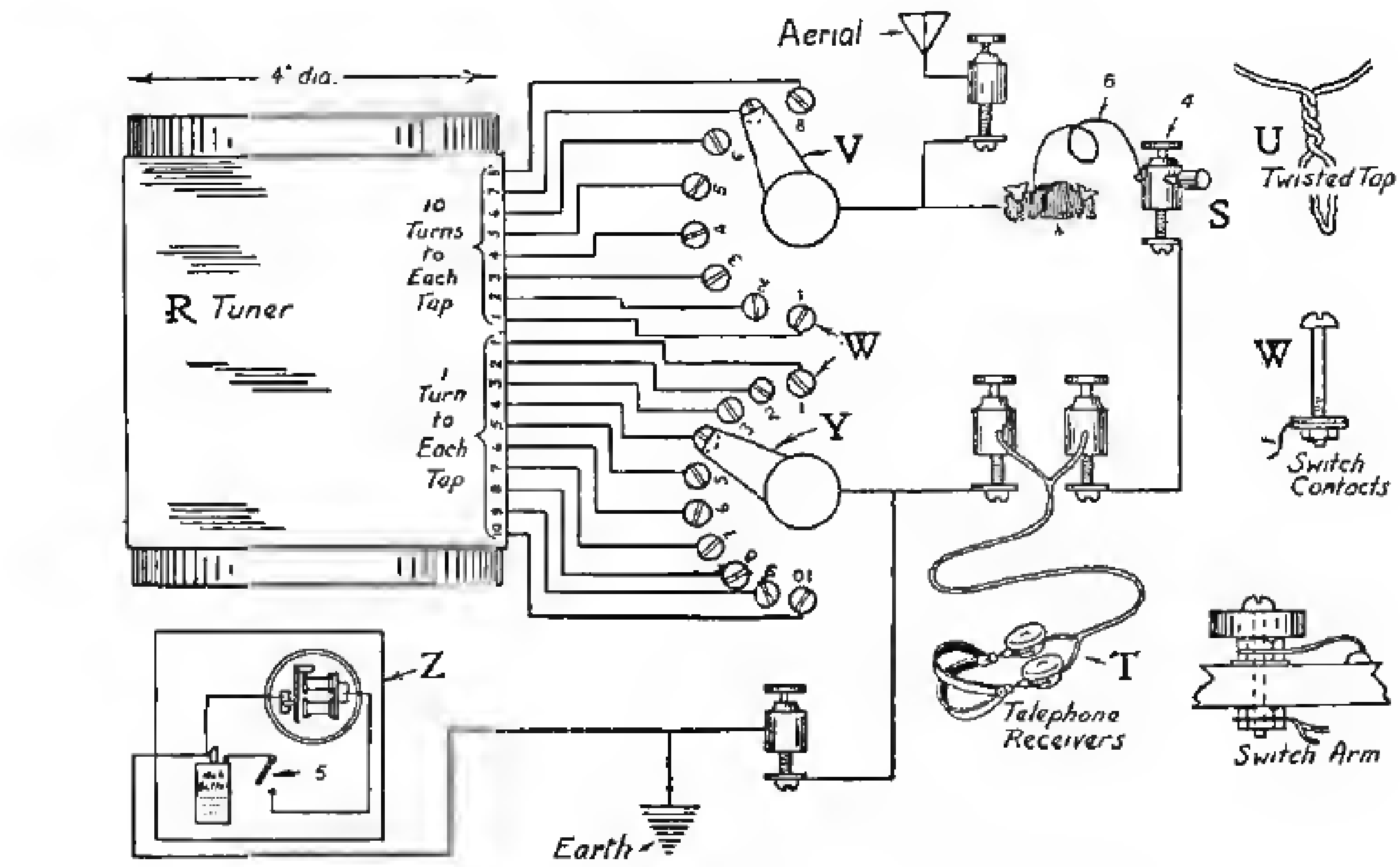


Fig. 3.—The Receiving Set in Complete Detail.

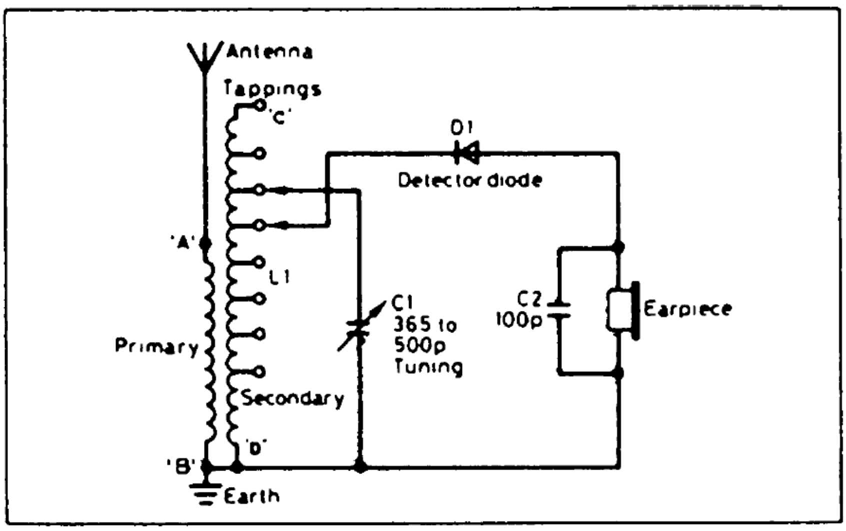


Figure 1 Circuit diagram of the crystal set

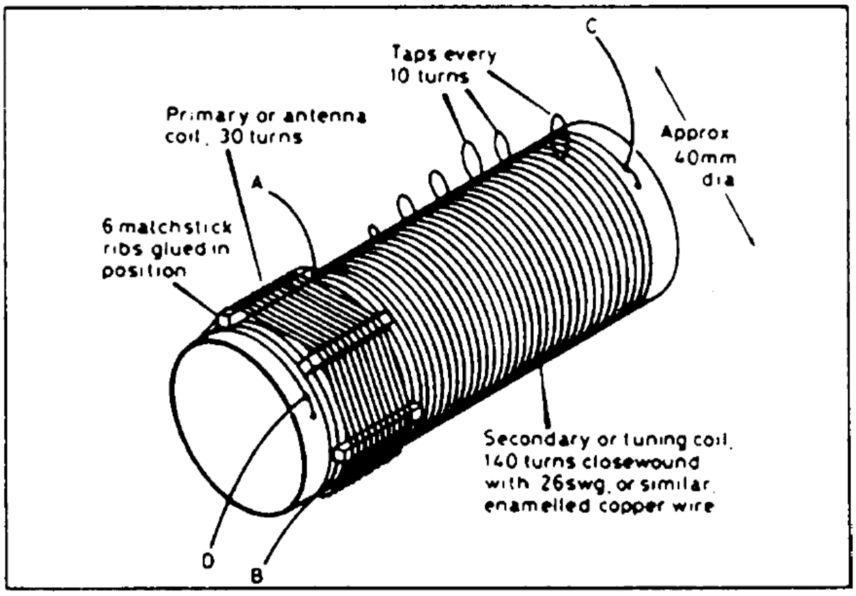


Figure 2 The coil is mounted on a cardboard tube as shown. Exact size is not too important. Try different taps for best results

- This part is the most difficult of all. Seasoned coil winders may have their

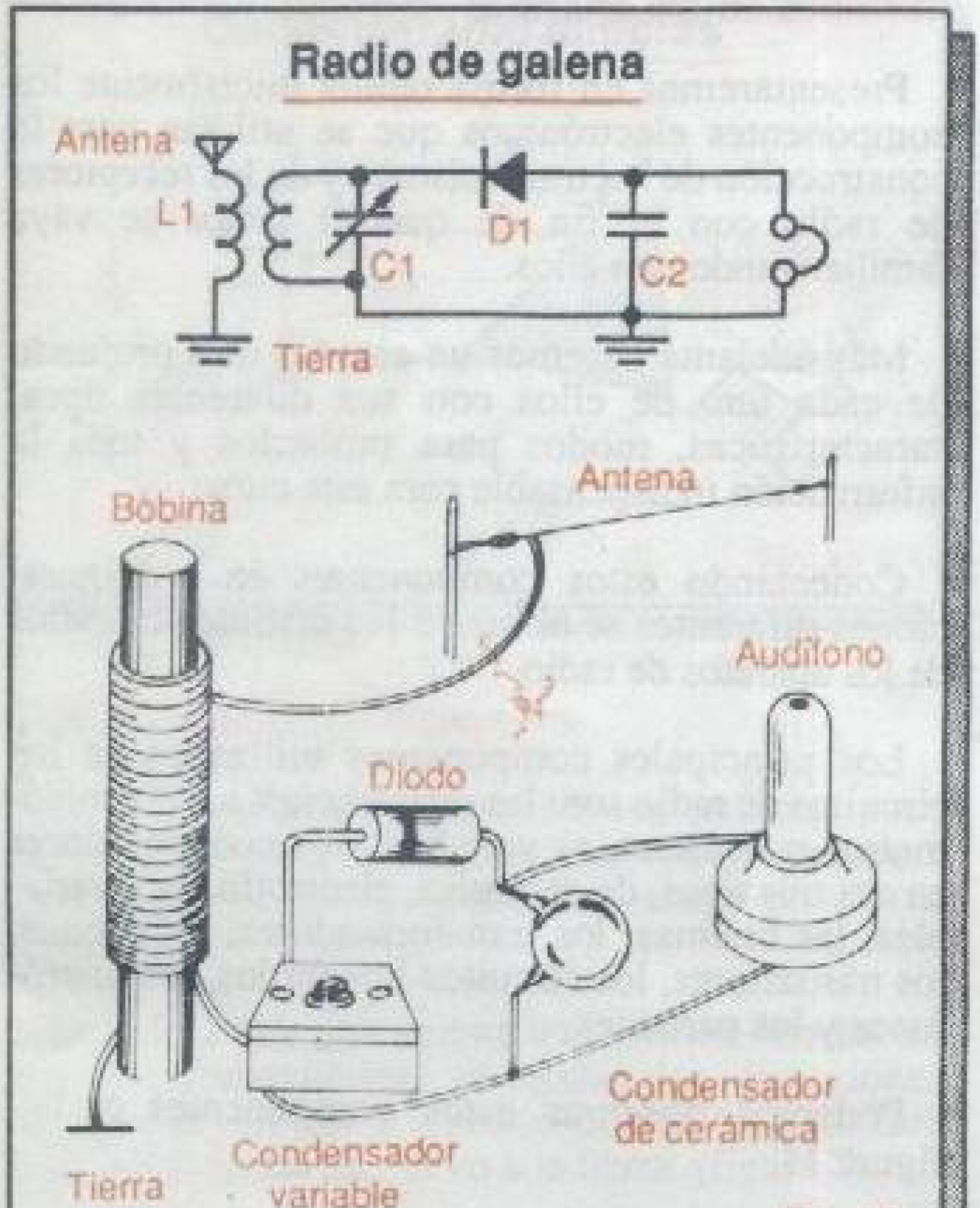


Fig 12

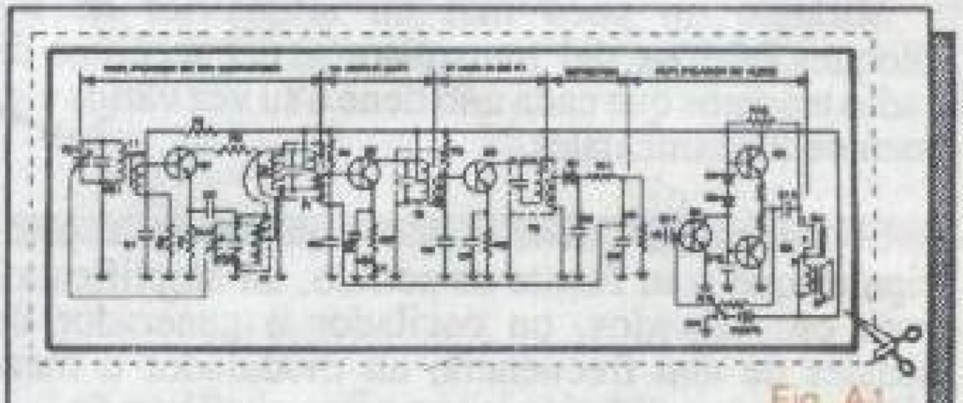


Fig. A1

Paso 2. Pegar la lámina sobre el tablero

Tome su tablero de madera y pegue el esquema sobre él. Unte el pegante en poca cantidad solamente en los bordes y un poco en el centro en forma de cruz. (figura A2).

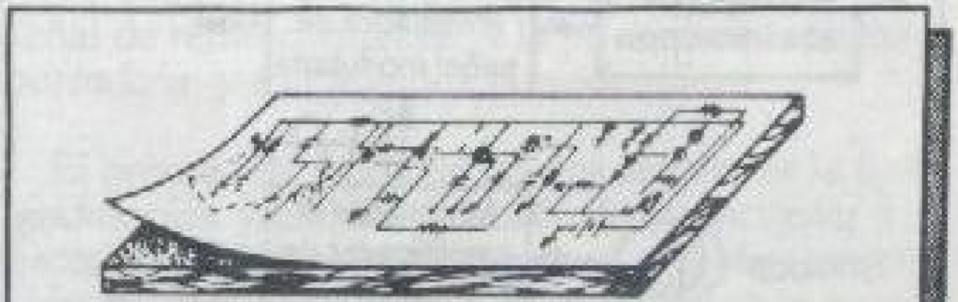
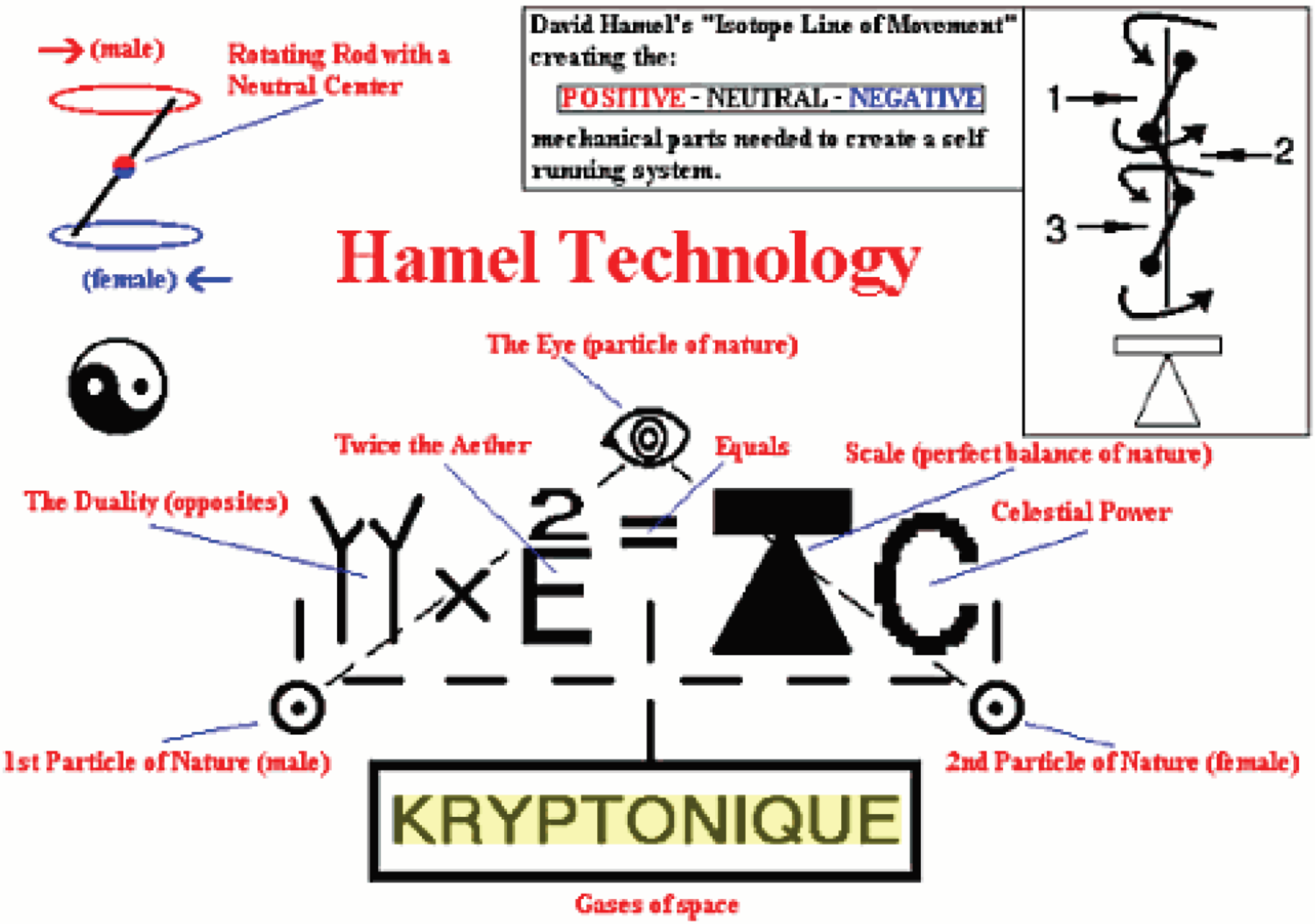
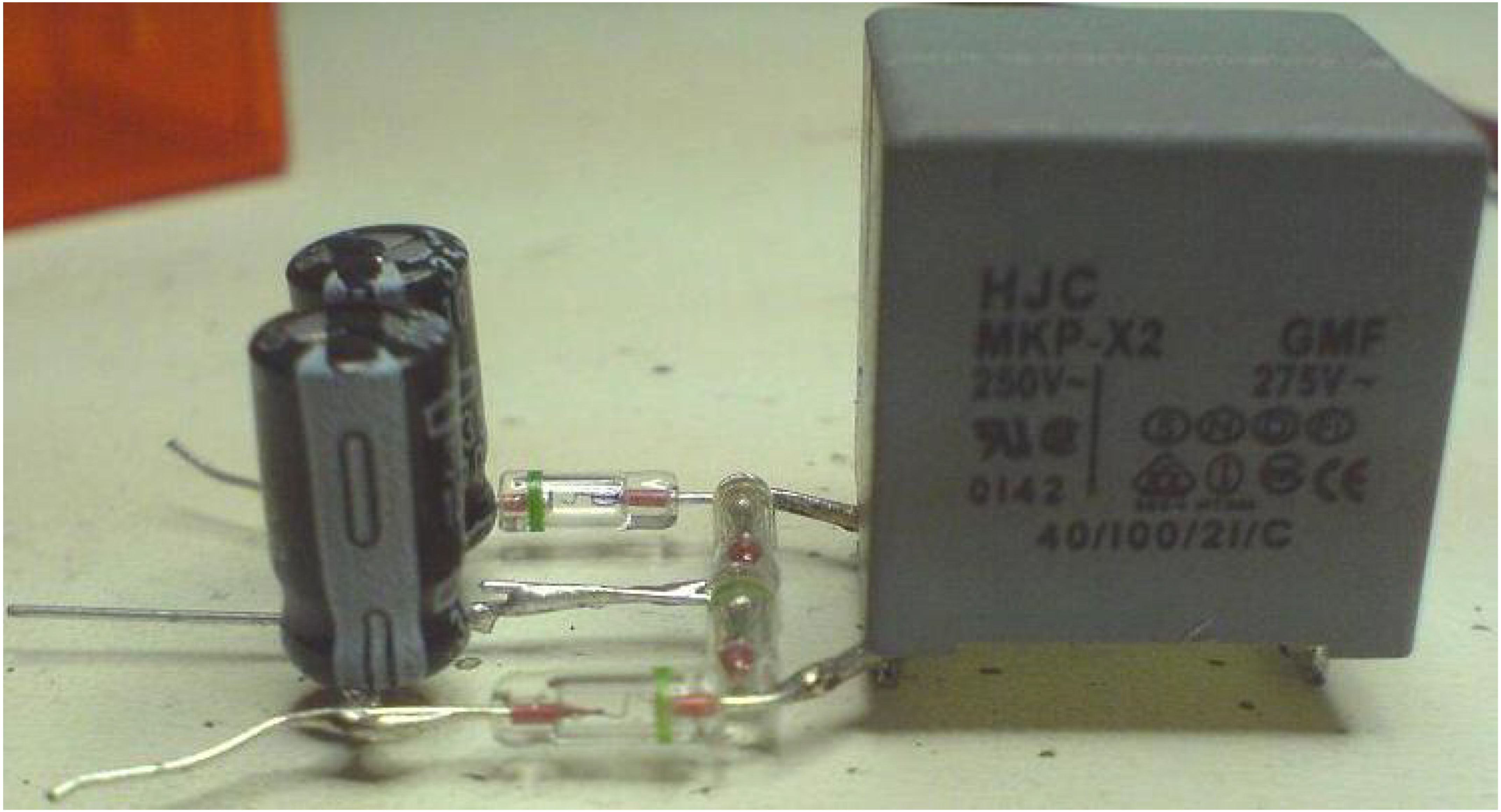


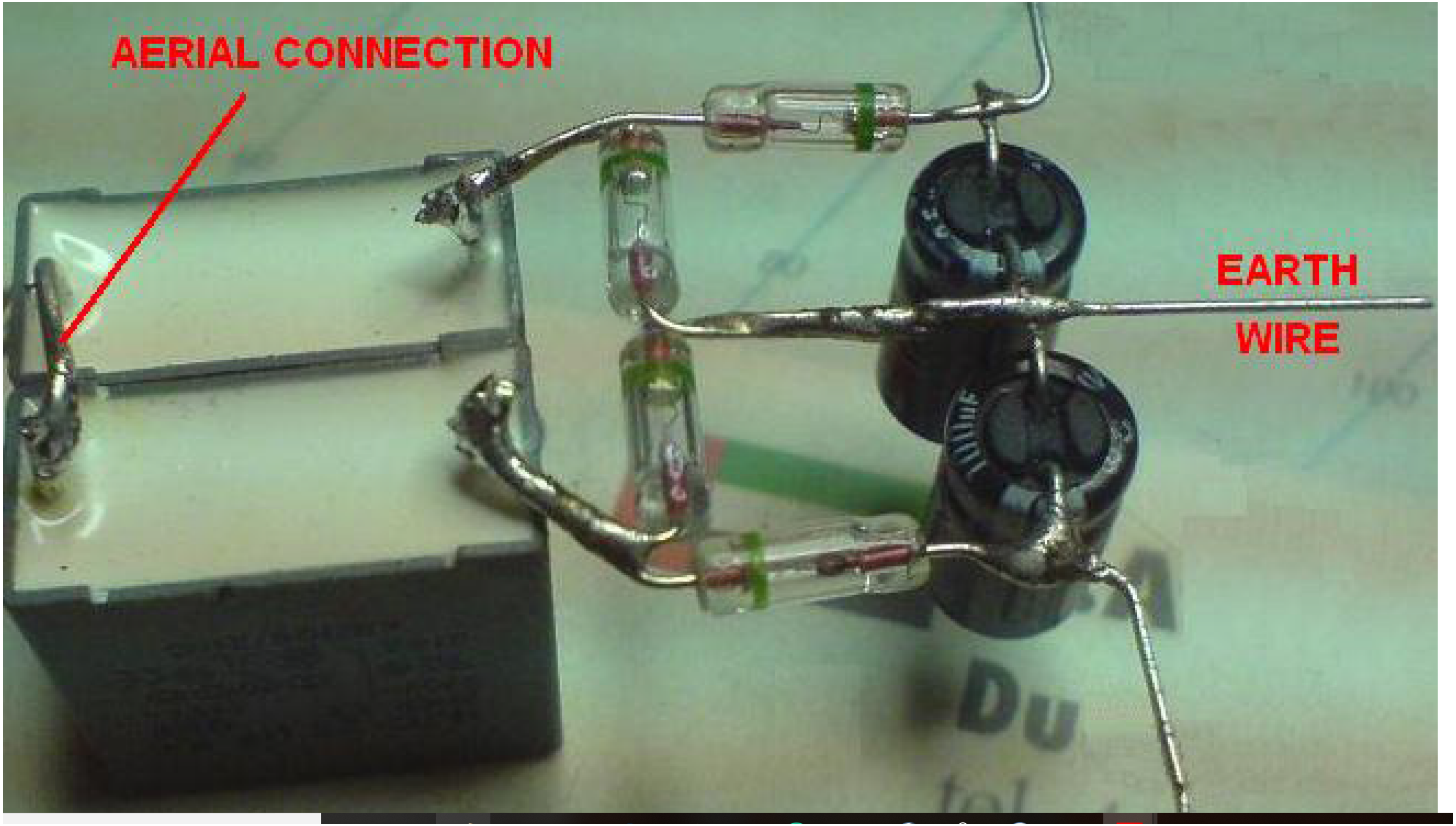
Fig. A2

THE LOST HAMEL DRAWINGS:



Particle Structure. [The MOST IMPORTANT Hamel Diagram of All.]


HJC
MKP-X2
GMF
250V~
275V~
0142
40/100/21/C


AERIAL CONNECTION
EARTH
WIRE

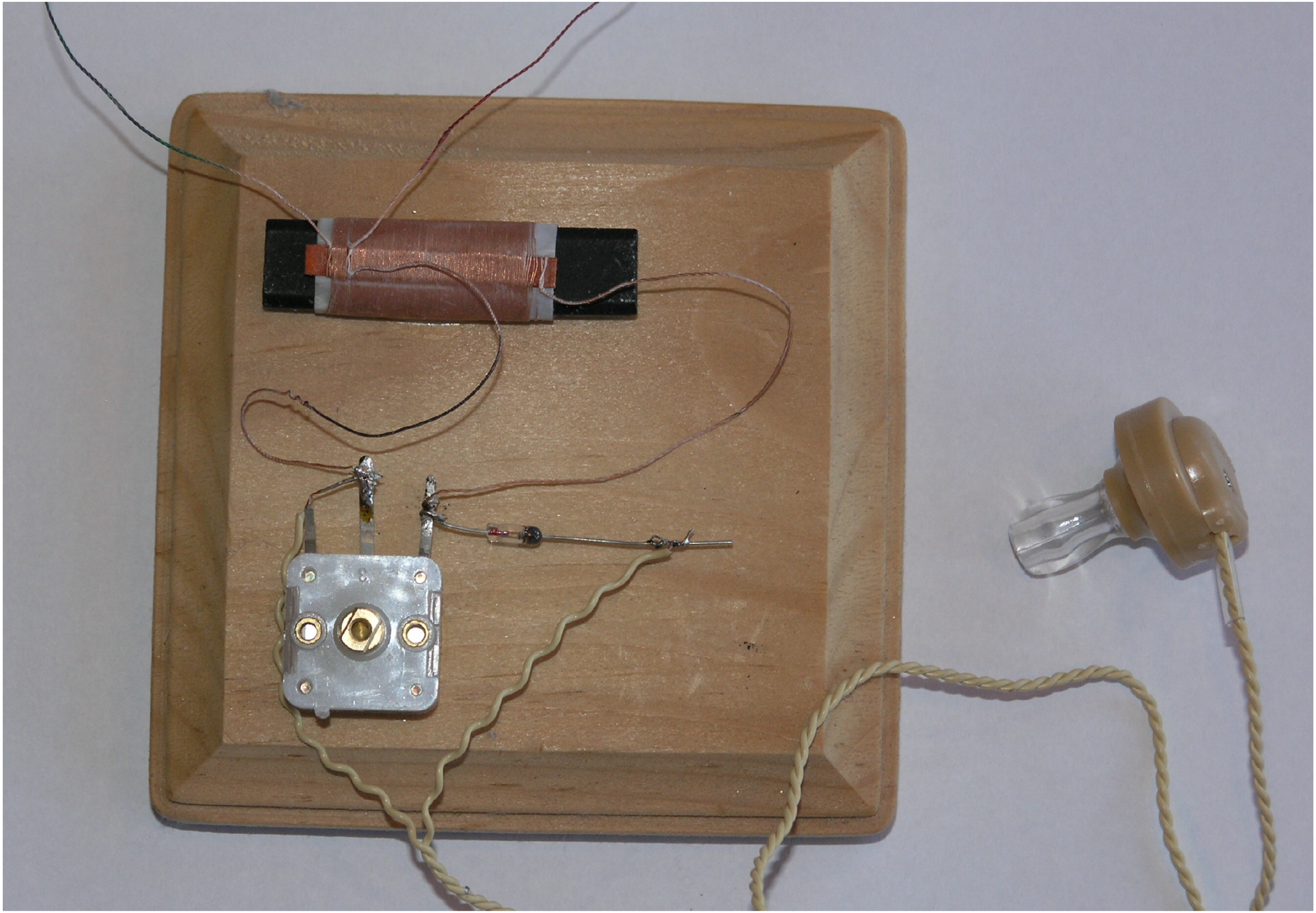


Figure 1 Three constructions for magnetic field probes

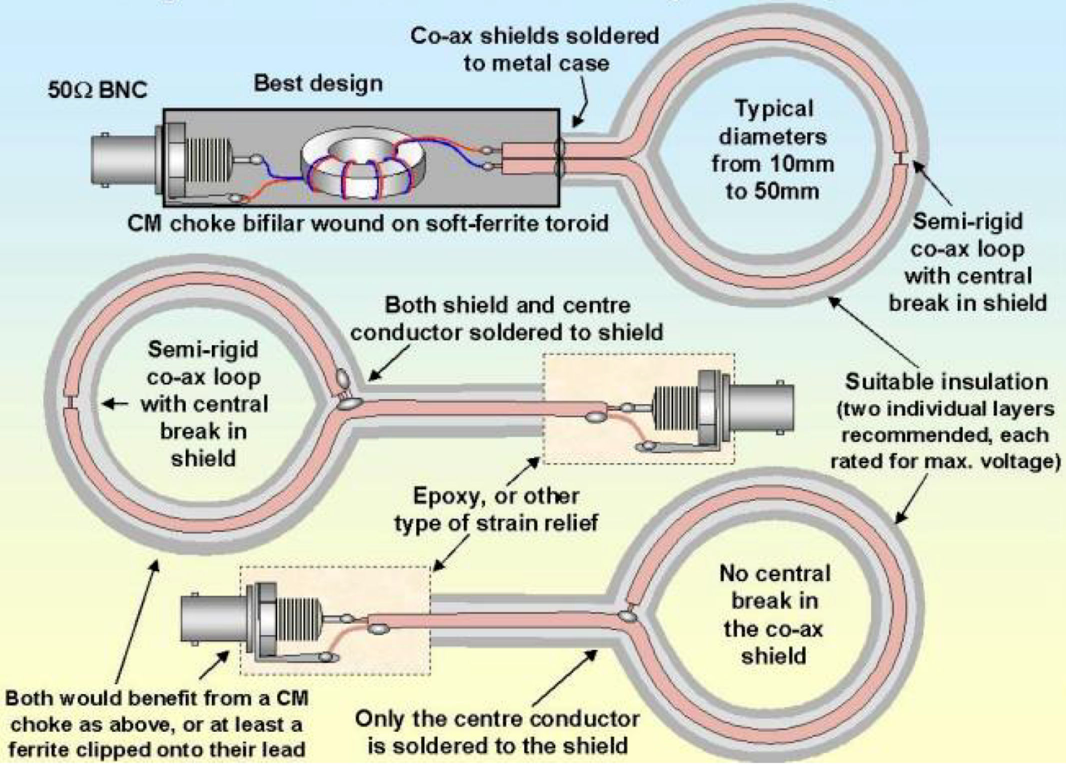
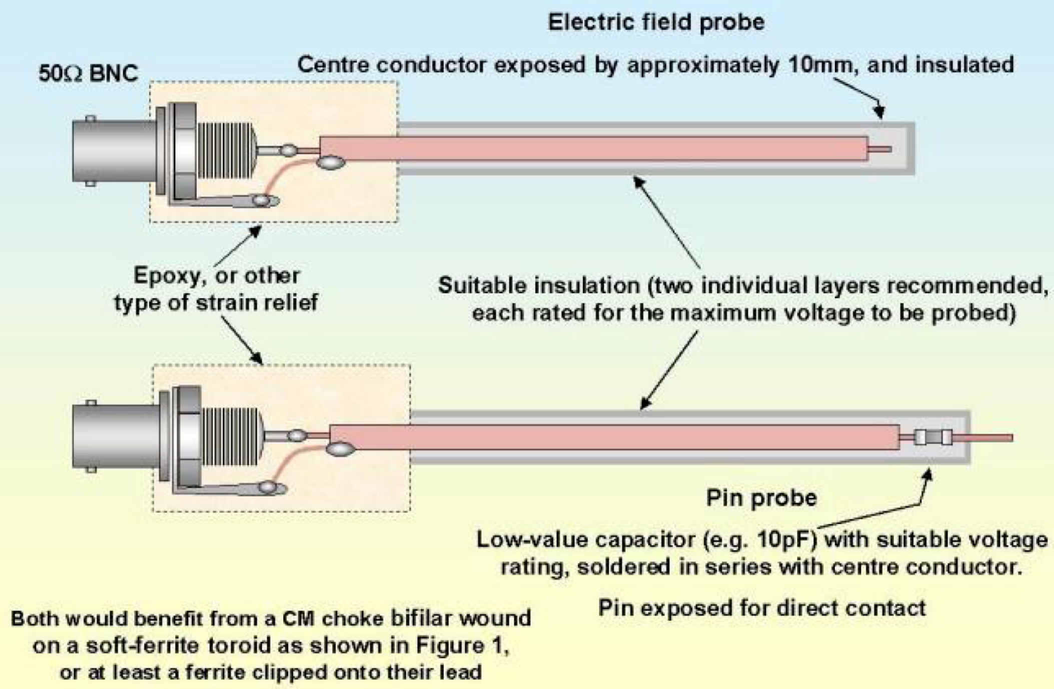
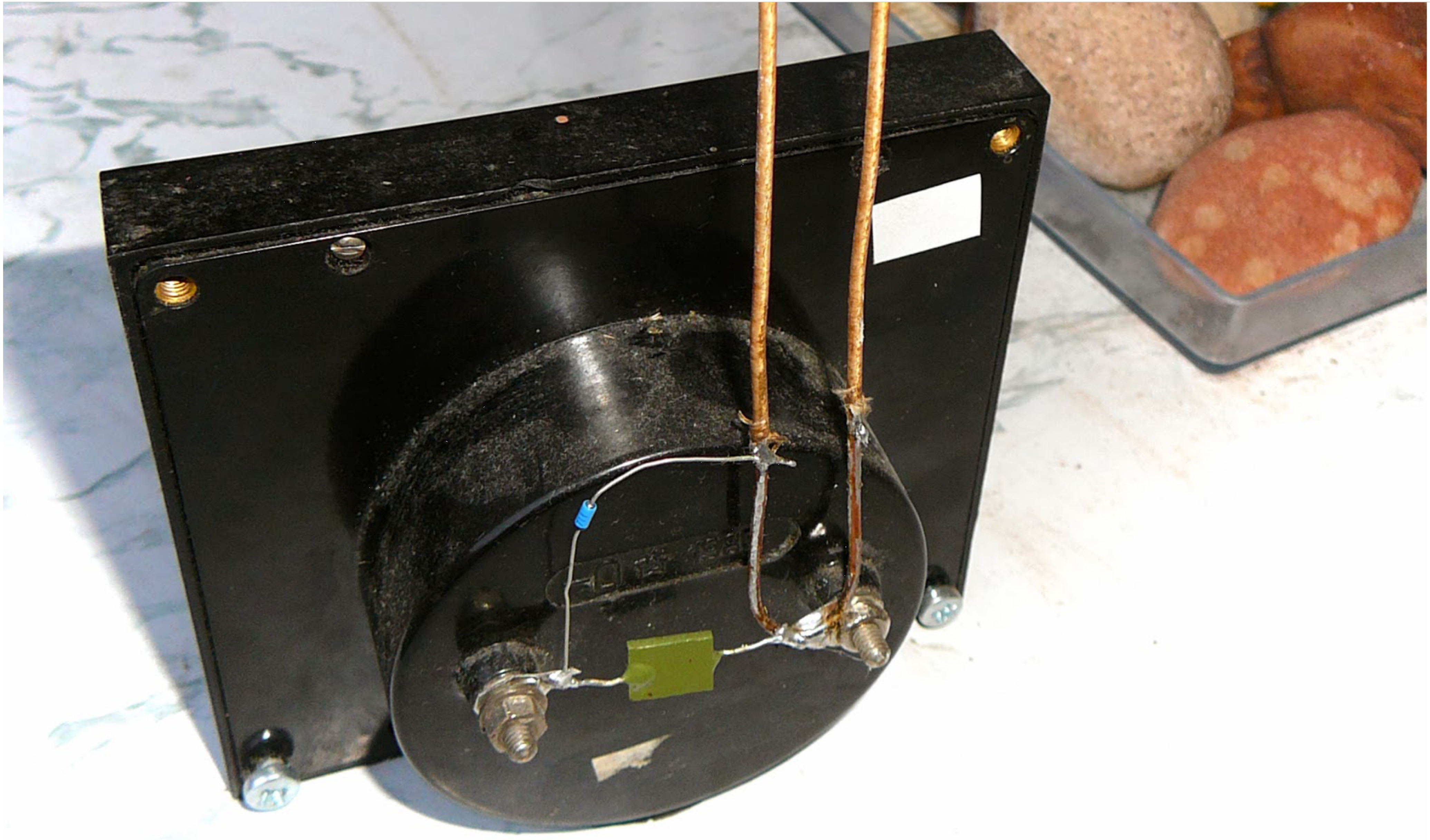
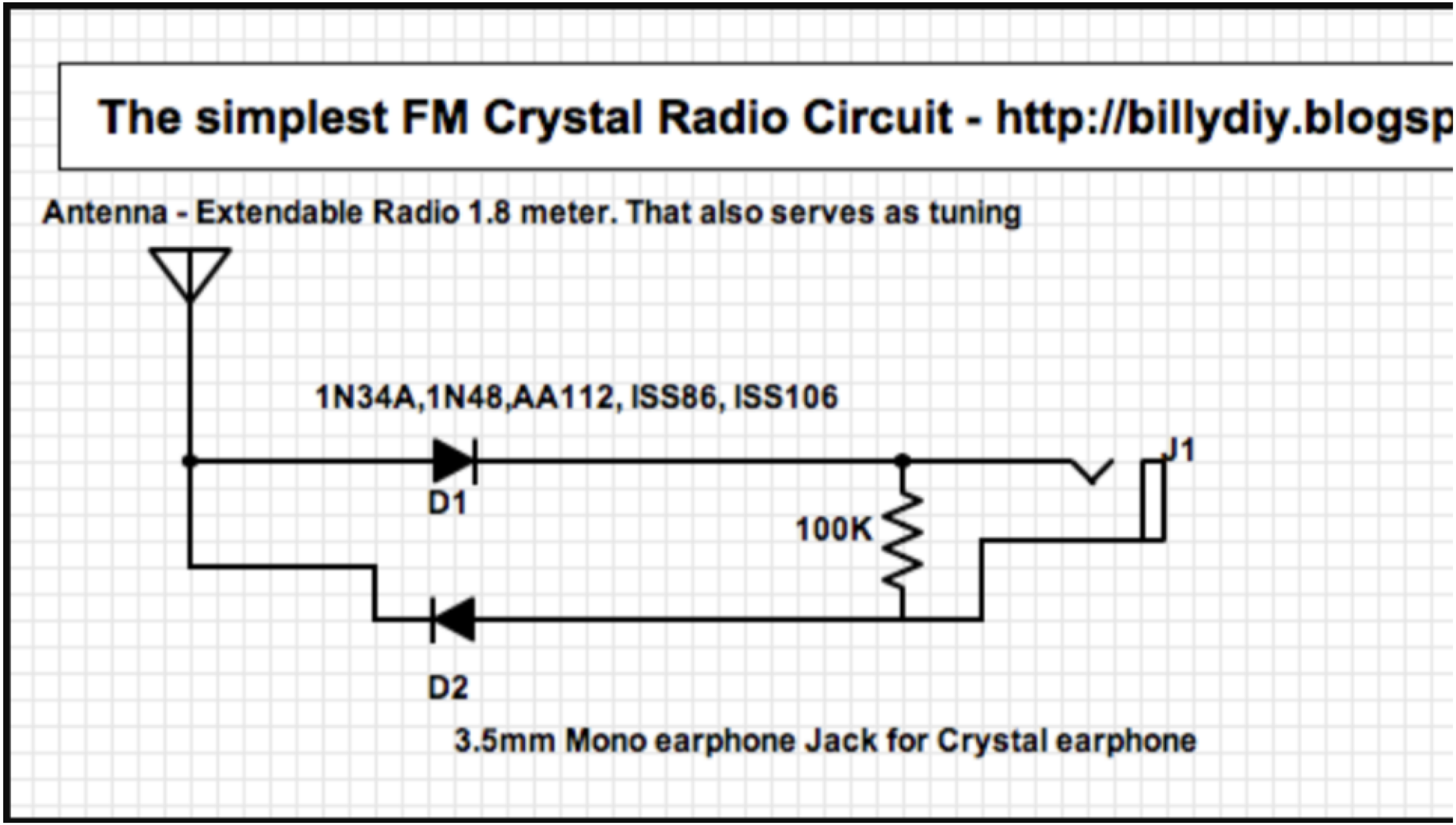
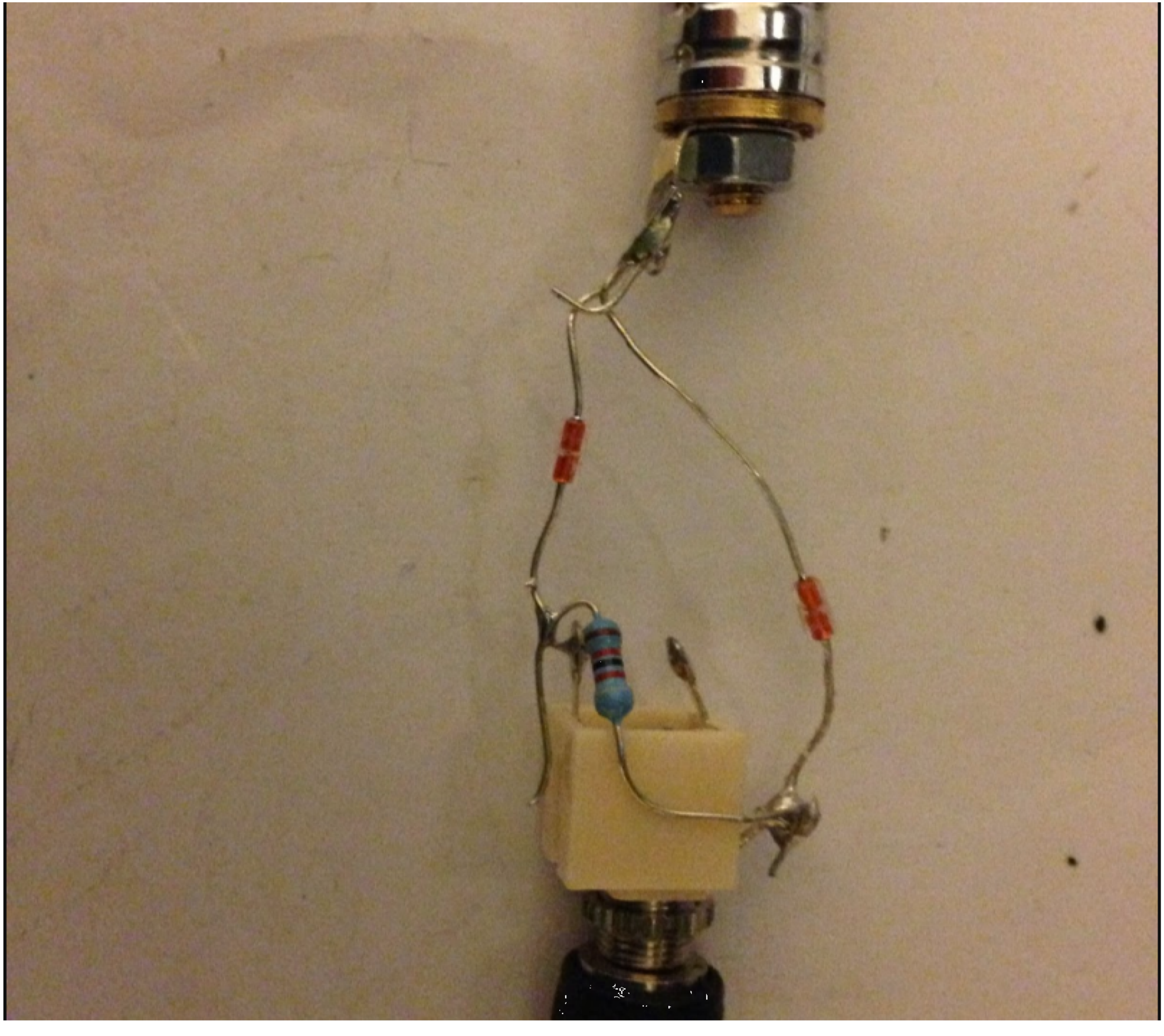


Figure 2 An electric field probe, and a pin probe

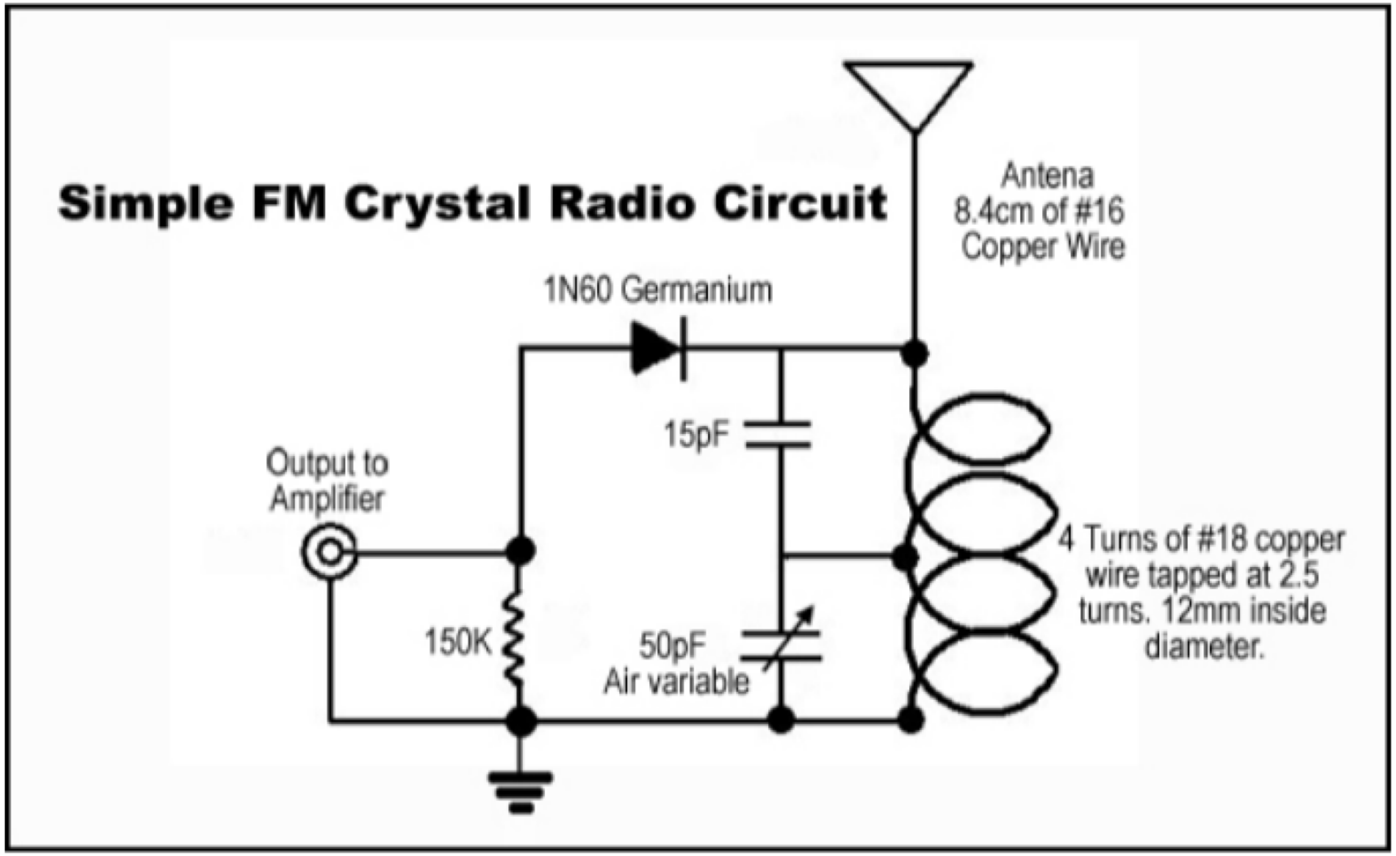





The simplest FM Crystal Radio Circuit - http://billydiy.blogsp
Antenna - Extendable Radio 1.8 meter. That also serves as tuning
1N34A,1N48,AA112, ISS86, ISS106
D1
J1
100K
D2
3.5mm Mono earphone Jack for Crystal earphone



FM Crystal Radio Circuit

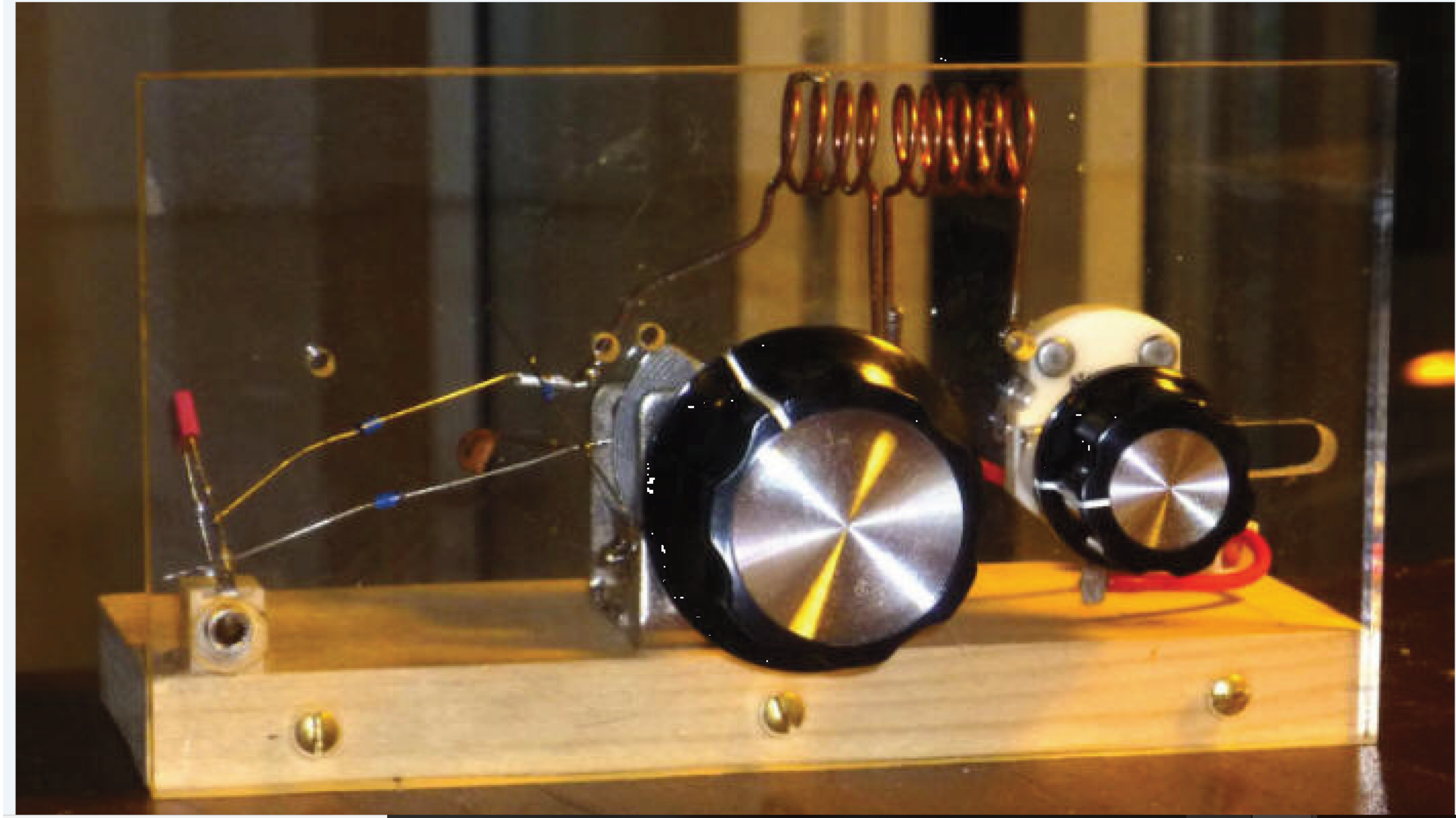


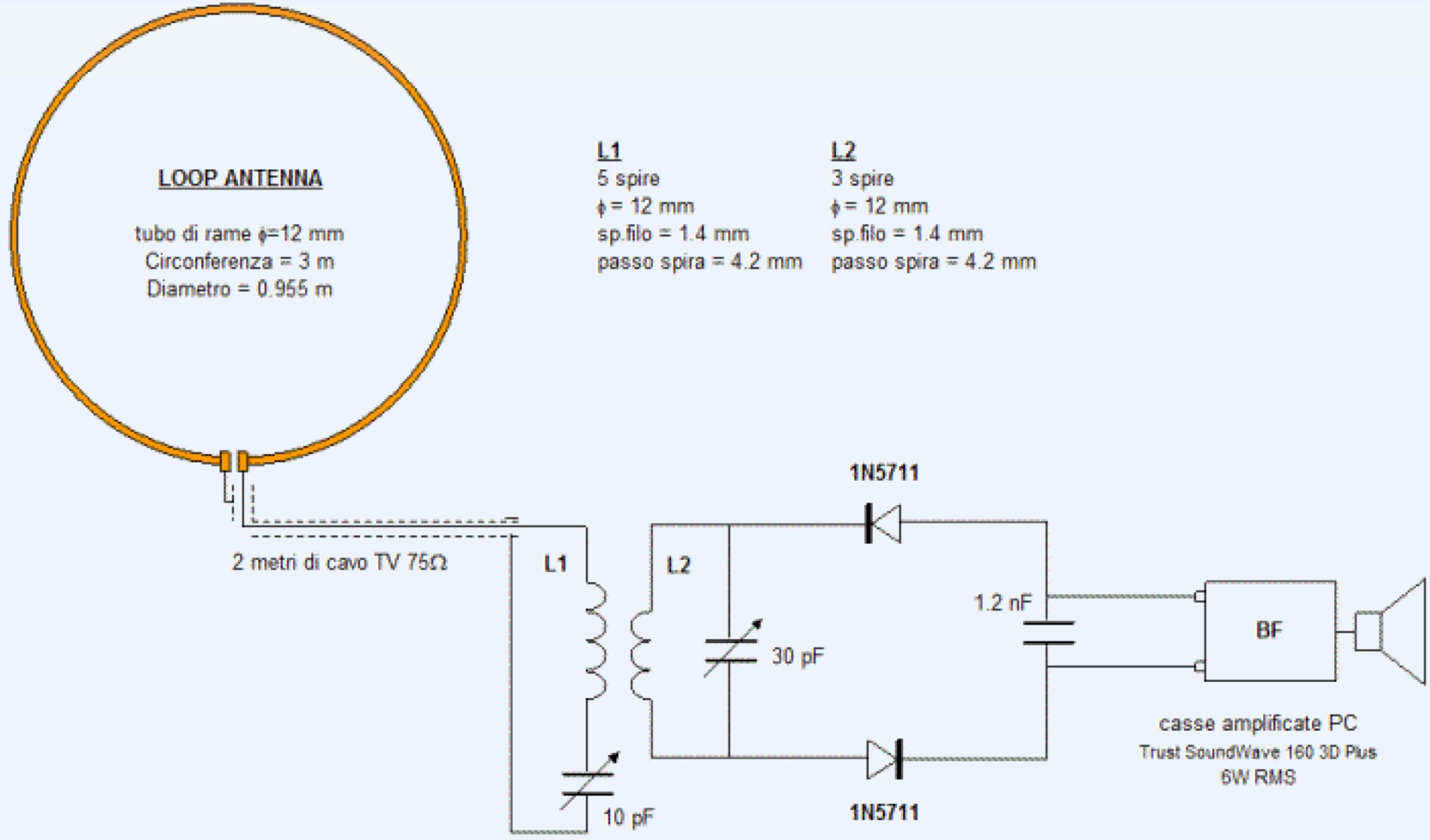
Parts List (some of these parts you can buy from our online store):

- 1N60 Germanium Diode
- 15pF Ceramic Capacitor
- 50pF Variable Capacitor
- 150K Ohm Resistor
- #16 & #18 Copper wires

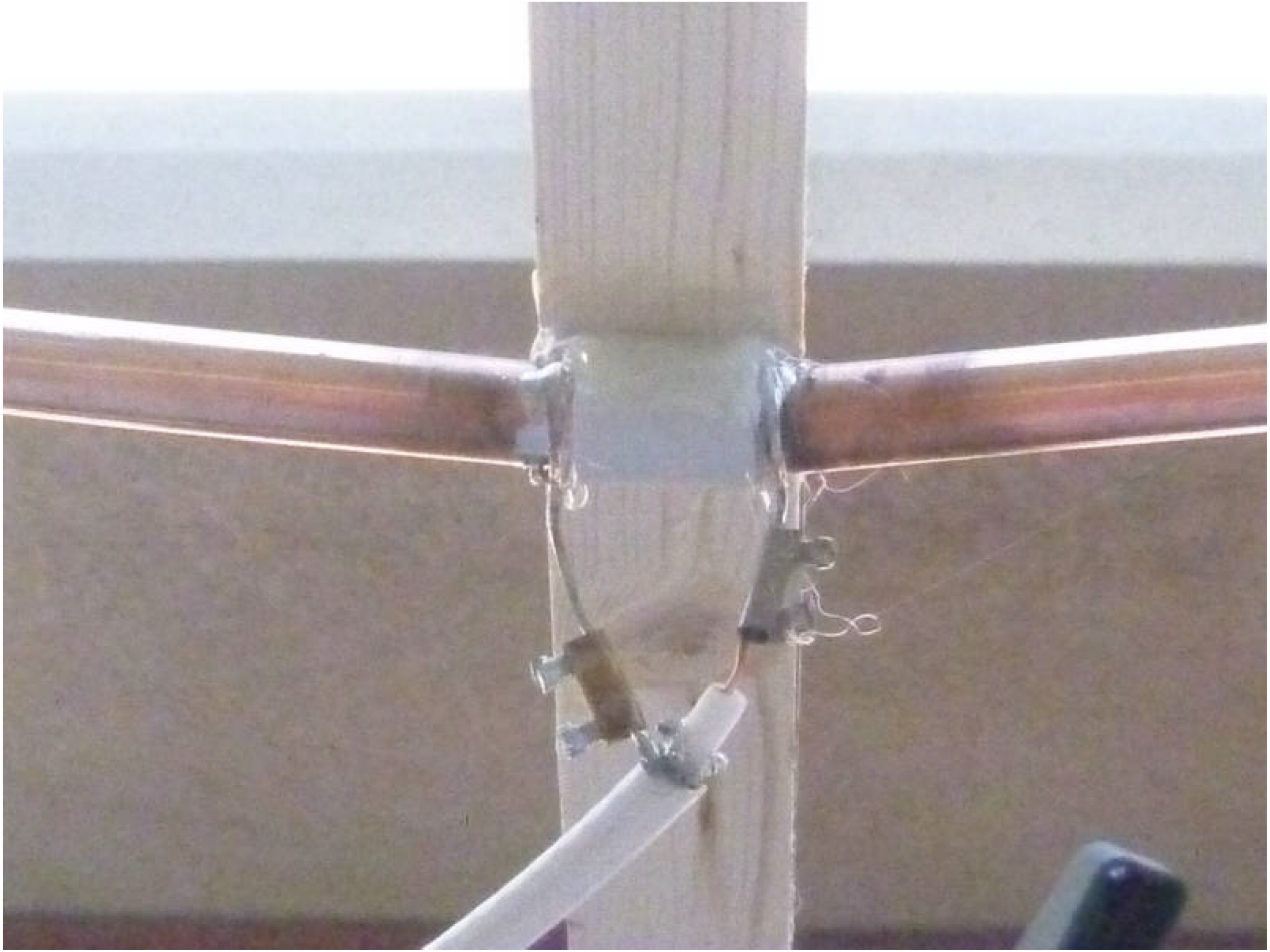
Ricevitore a cristallo per FM

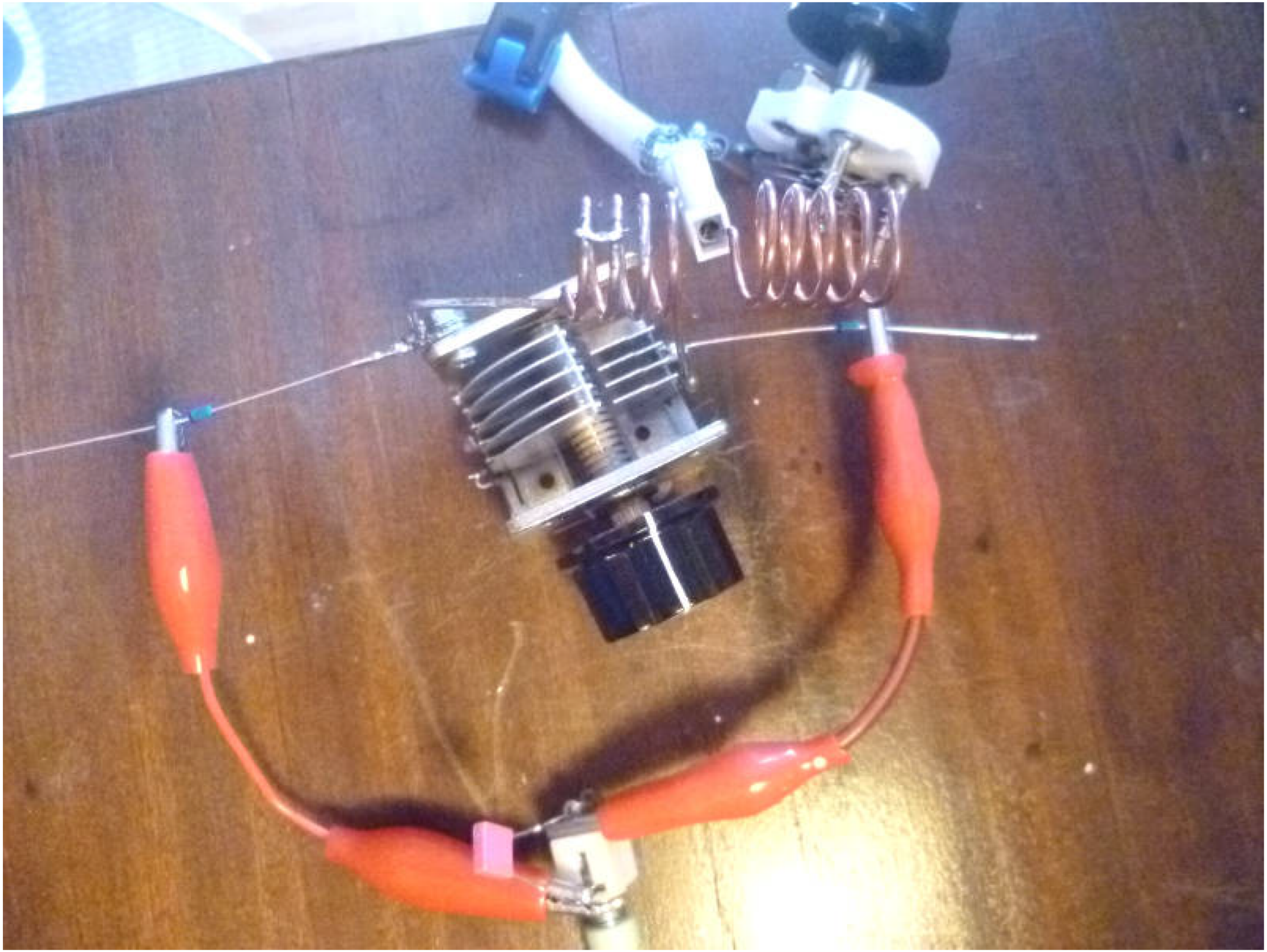
Un progetto di Giacomo Cavuoti

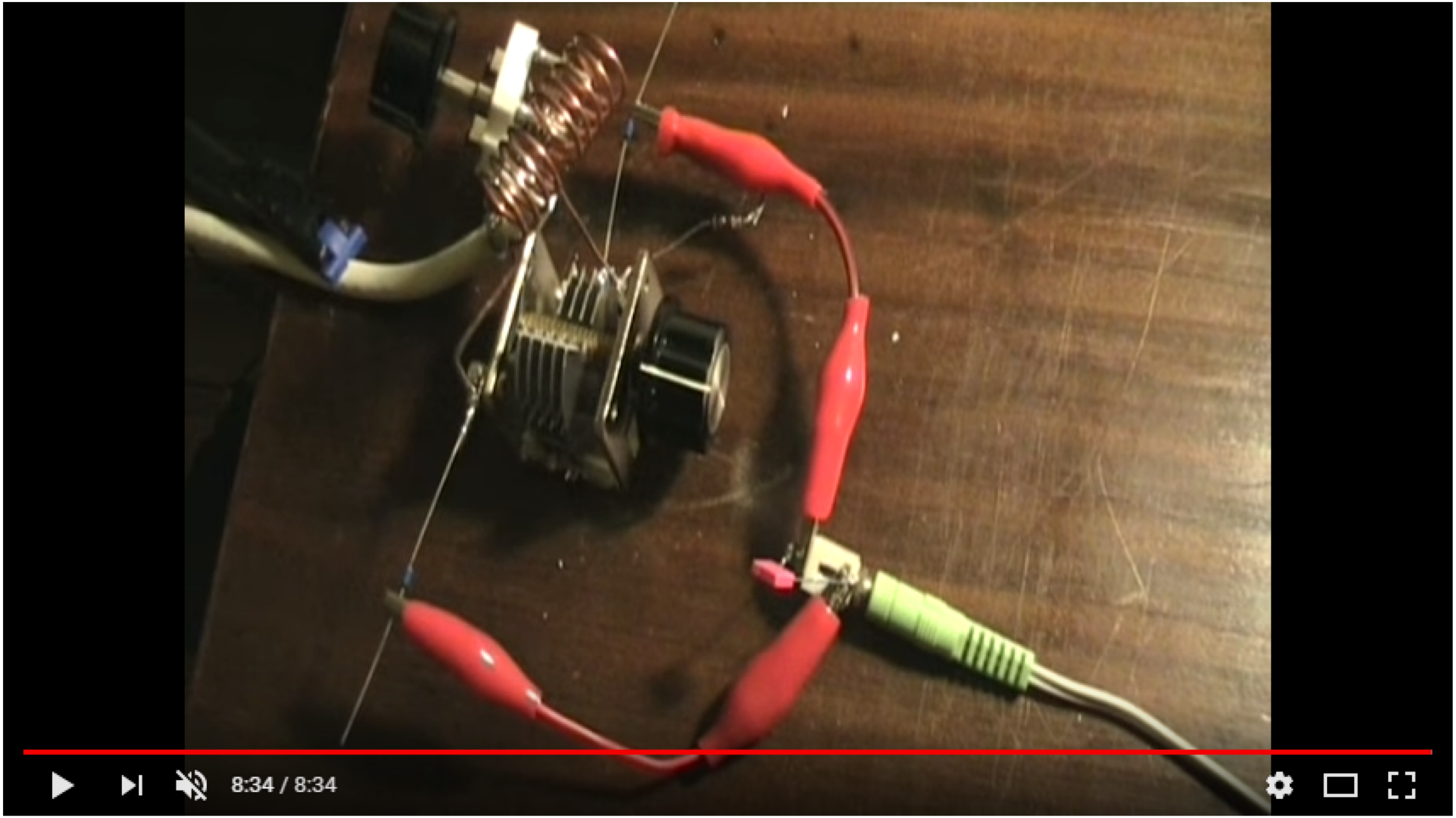




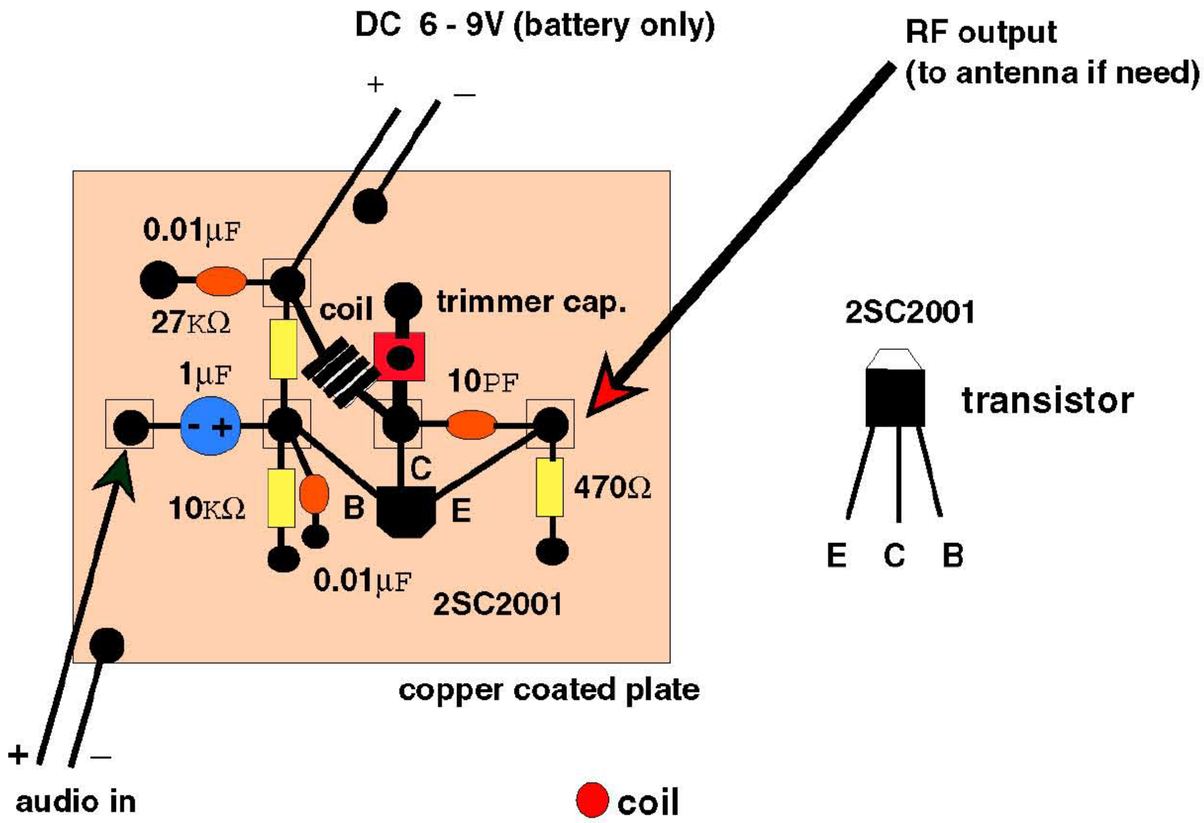
The receiver is "powered" by a full wave loop antenna consisting of a single circular coil made of 3 meters of copper pipe for hydraulic systems (measured inductance of about 3 uH). The support is a simple 2-meter long fir-wood strip, 3 cm wide and 1 cm thick, to which the copper rim has been fixed with insulating tape. Another solution to realize the loop antenna in a simple and instantaneous way is to use an aluminum strip 2 mm thick and 2 cm wide. The detectors are two *Schottky* diodes type 1N5711, particularly suitable for VHF thanks to the low capacity (about 2pF). They are currently in production and therefore easy to find. The receiver was tested in a "stiff" situation with the antenna exposed in a recessed balcony (3 x 1.6 meters) on the fourth floor of a 6-storey reinforced concrete building surrounded by other buildings constructed of reinforced concrete walls. As you can see and hear from the two videos I uploaded on Youtube:






8:34 / 8:34

Making the simplest Transmitter



soldered point:

: direct to the ground

: insulated from the ground

coil

3 - 4 turns by coated 0.8 mm wire

registers

470 Ω *(yellow-violet-brown)*

10K Ω *(brown-black-orange)*

27K Ω *(red-violet-orange)*

capacitors

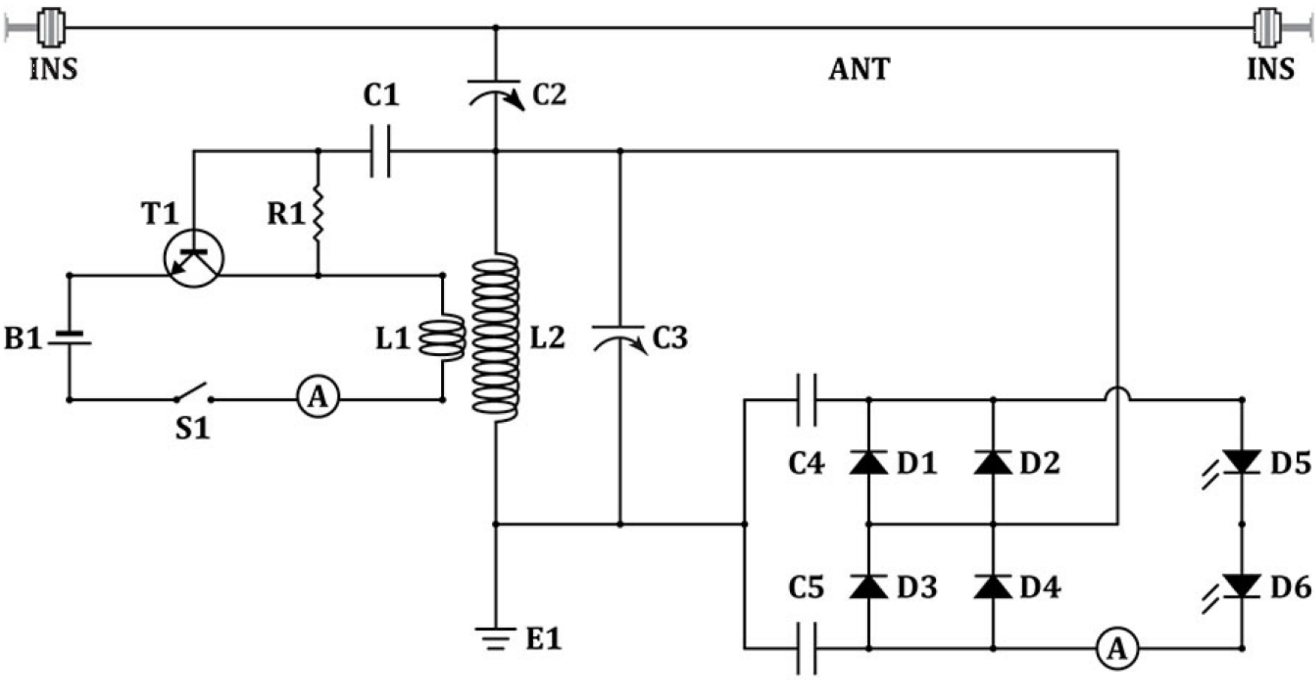
10 PF

0.01 μF *(103)*

1 μF

trimmer capasitor 20PF

Radiant Energy Proof of Concept Receiver Schematic – v2.6

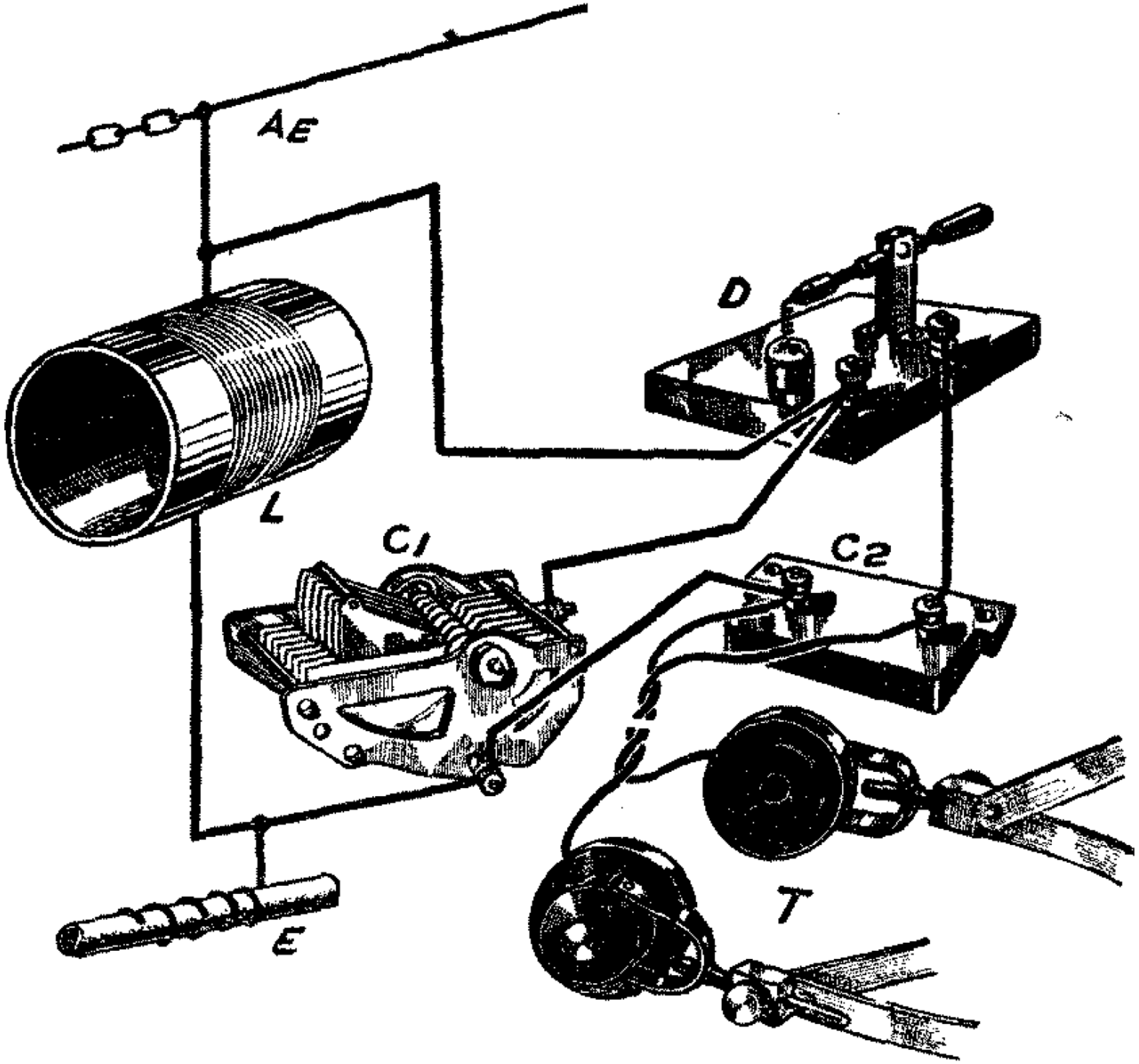


Key

A: Analogue mA ammeter.
ANT: Antenna 65' long, 6ga, V shape, electrically isolated at least 10' from the ground.
B1: 6 volt SLA rechargeable battery.
C1: 560pf, 50v ceramic capacitor.
C2, C3: 365pf variable air capacitors, less than 1kv.
C4, C5: 450 volt, 47µF electrolytic capacitors.
D1-D4: UF4007 1.0a ultra fast recovery diodes.
D5, D6: 2 - 3.7 volt, 30ma, 10mm ultrabright LEDs.
E1: Earth grounding rod.
INS: Electrically non conductive insulators.
L1: 3 turns, 18ga wire wound over L2 windings.
L2: 50 turns, 20ga enameled wire wound on a 3" diameter cardboard tube.
R1: 10k, 1/4 watt resistor.
S1: On/Off switch.
T1: MJE13007 transitor.

Input: 6 volts @ 7.5 mA.
Output: 6 volts @ 38 mA.
Gain: 30.5mA = over five times more output than input.

turning low-frequency currents into sound, and it would be as



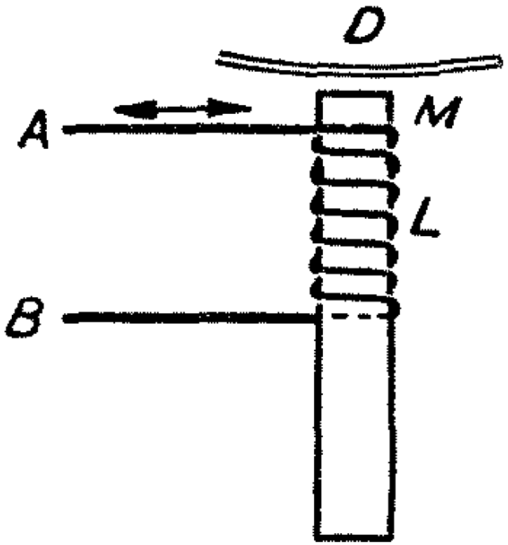


Fig. 17—Currents vary the strength of the magnetism and so cause diaphragm movements

Fig. 16 (b)—Pictorial representation of the simple

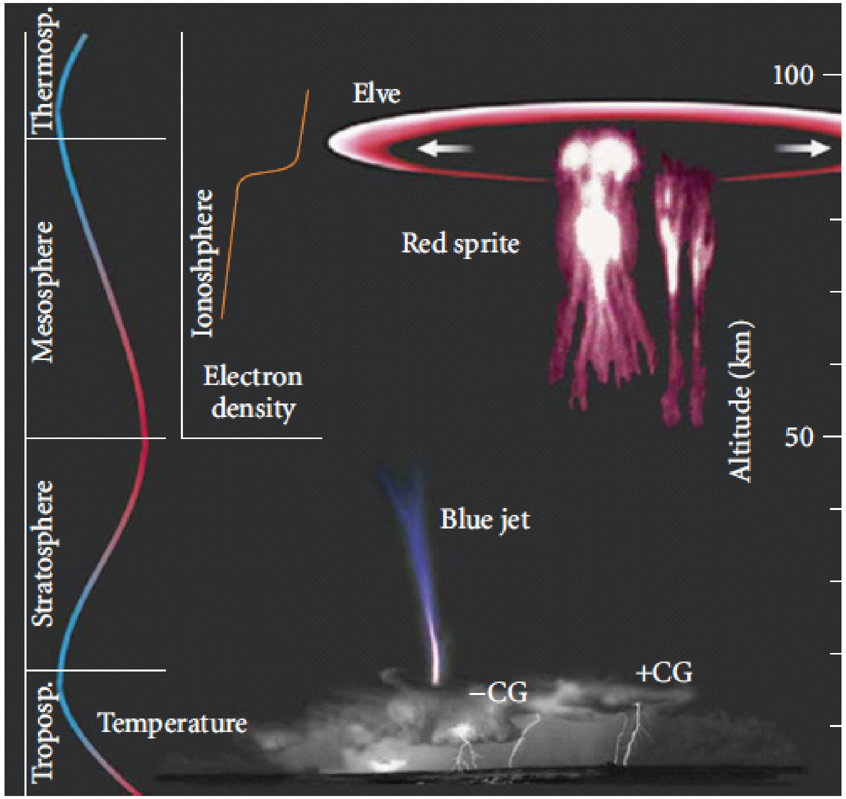


FIGURE 2: Depiction of various optical events in the atmosphere and the altitude at which they occur, credit [2].

or at time as low as the cloud top and bright region is in the altitude range 65–85 km [35]. They typically last for 5–50 ms and may take the form of one or more vertical columns of a few hundred meter radius for the smaller column sprites or large jellyfish-shaped structures of tens of kilometers of radius and extending from the ionosphere D-region almost down to the thunderstorm cloud tops [2, 35]. The knowledge gained from laboratory experiment of gas discharges at subatmospheric pressure has been used to understand sprite spectroscopy and associated phenomena [25]. Figure 3 shows broad identical spectral characteristics of light of positive column of the laboratory tube and sprites [25]. The difference in spectral characteristics may be due to difference in applied electric field, gas pressure, and gas composition in the mesosphere and gas tube discharges. Physical processes associated with sprites and other optical events are also associated with thunderstorm activity in the troposphere and are thought to result in the gradual build-up of conductivity changes in the lower ionosphere [36]. Liszka [37] suggested the generation of infrasound waves by sprites, whose signatures were detected by a network sensors in Sweden [38]. The shape of the chirp signature in the spectrograms of infrasound can be explained by the horizontal size of the sprite [39]. Neubert et al. [40] have

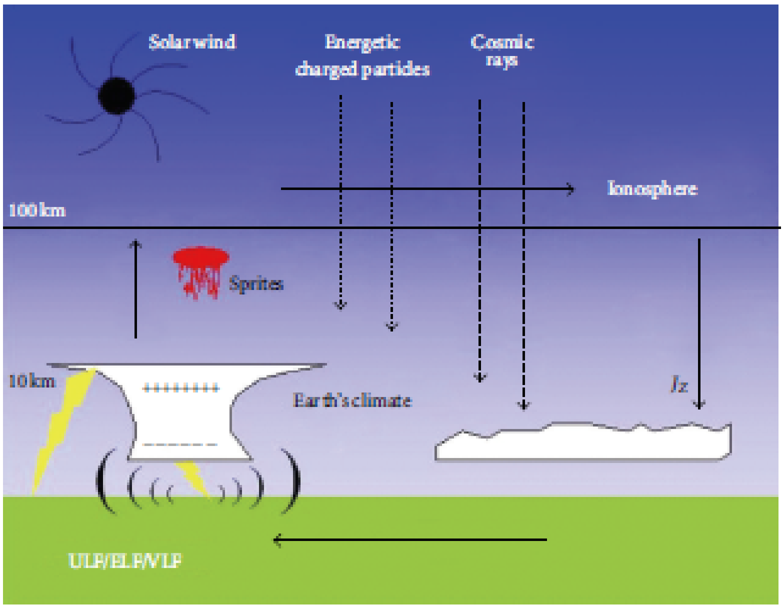


Figure 4: Essential features of the global atmospheric electric circuit [26, 27].

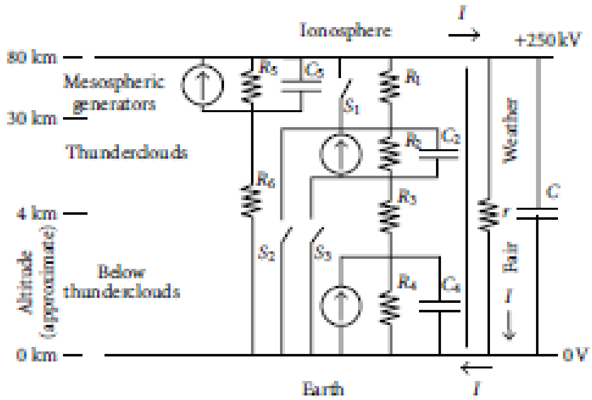


Figure 5: Diagram showing a schematic equivalent circuit for global electric circuits, credit [28].

system, that electric currents redistribute charge and that the electric currents are continuous.

The power supplied by thunderstorms is insufficient to maintain a field of magnitude observed in fair-weather regions. Rycroft et al. [61] included the generator associated with electrified clouds in the GEC model; this was found to be of the same magnitude as that due to thunderstorms. The optical phenomena occurring in the upward branch of the GEC above the thunderstorms are likely to influence only the upper atmosphere conductivity. Since they occur much less frequently (only one sprite out of 200 lightning) because of their association with intense lightning discharges [50, 62], their contribution to the ionospheric potential is very small [61]. The gigantic jets transport large quantities of negative charge discharging the atmospheric capacitor [63–66] whose effects on the ionosphere and GEC have not yet been modeled. The role of sprite/TLE events on the flow, charging/discharging of GEC, modification of electric fields near the Earth's surface remains unanswered. Since optical emissions could change electrical properties of the atmosphere and influence processes related with weather and climate, intense research activity in this area is required.

The earthquakes affect the electrodynamics of the atmosphere through the generation of electric and magnetic fields with crustal deformation, fault-failure-related piezomagnetism, stress/conductivity, electrokinetic effects, charge generation processes, thermal remagnetization, and demagnetization effects, and so forth [67]. These processes in the Earth's lithosphere relate with disturbances in the atmosphere and ionosphere. Sorokin et al. [8] discussed the processes forming the electrodynamic model of the effect of seismic and meteorological phenomena on the ionosphere. Radioactive substances and charged aerosols injected into the atmosphere modify the altitude profile of conductivity, generation of external currents, perturbation of electric field, and current in the ionospheric layer. As a result, Joule heating of the ionosphere and instability of acoustic gravity waves take place, which manifests in the formation of horizontal inhomogeneities of ionospheric conductivity. Finally, excitation of plasma density fluctuations and ULF/ELF emissions in the ionosphere, generation of field aligned currents and plasma layers, upward plasma transport, and modification of F_2-layer, and change in the ion composition of the upper ionosphere take place [68, 69]. These changes may also affect the GEC and the Earth's climate which remains a challenging problem to be solved. Figure 6 shows a schematic diagram which can be used to

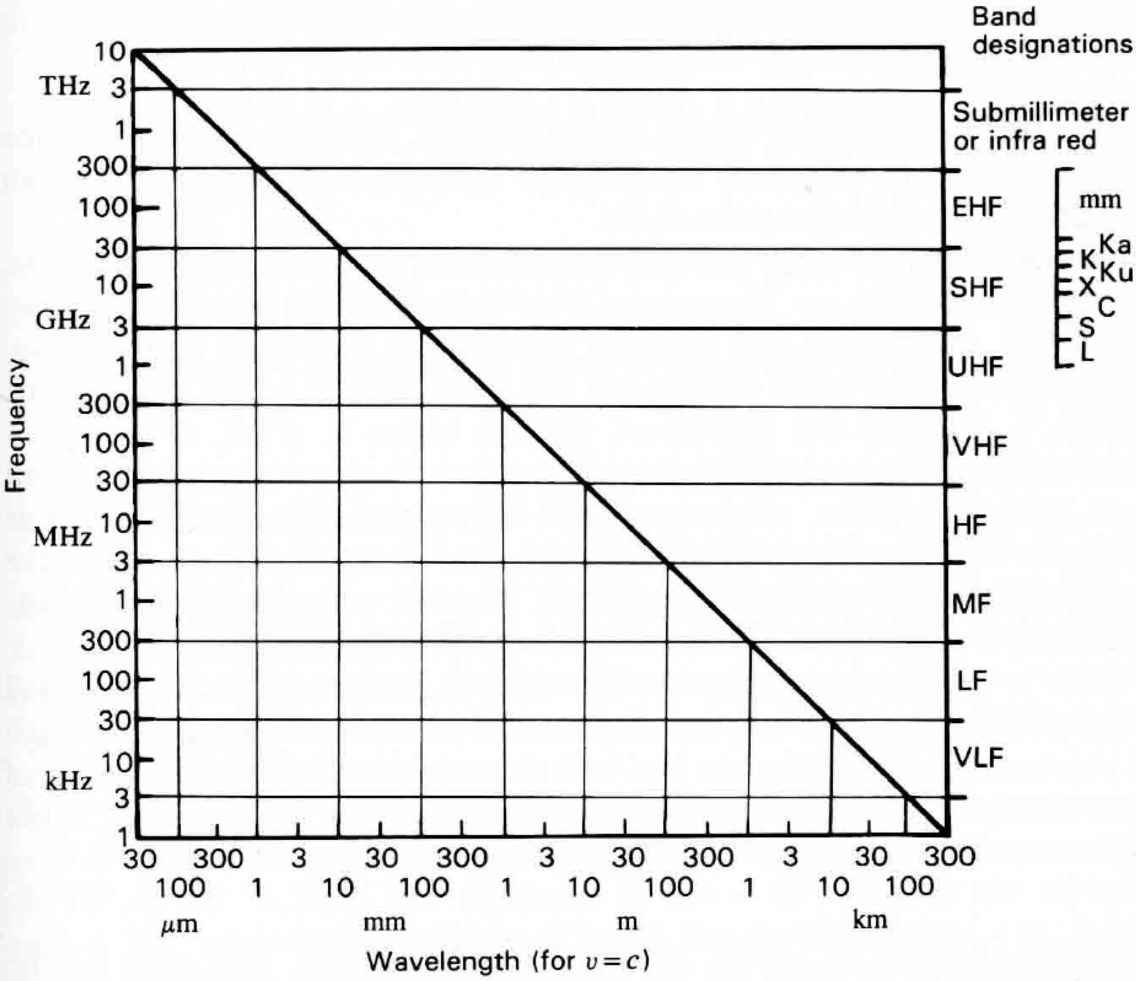


Figure 1-7 Wavelength versus frequency for $v = c$.

Example of wavelength for a given frequency. For a frequency of 300 MHz the corresponding wavelength is given by

$$\lambda = \frac{c}{f} = \frac{3 \times 10^8 \text{ m s}^{-1}}{300 \times 10^6 \text{ Hz}} = 1 \text{ m} \tag{3}$$

In a lossless nonmagnetic dielectric medium with relative permittivity $\varepsilon_r = 2$, the same wave has a velocity

$$v = \frac{c}{\sqrt{\varepsilon_r}} = \frac{3 \times 10^8}{\sqrt{2}} = 2.12 \times 10^8 \text{ m s}^{-1} \tag{4}$$

and $$\lambda = \frac{v}{f} = \frac{2.12 \times 10^8}{300 \times 10^6} = 0.707 \text{ m} = 707 \text{ mm} \tag{5}$$

1-4 DIMENSIONS AND UNITS. Lord Kelvin is reported to have said:

When you can measure what you are speaking about and express it in numbers you know something about it; but when you cannot measure it, when you cannot express it in numbers your knowledge is of a meagre and unsatisfactory kind; it may

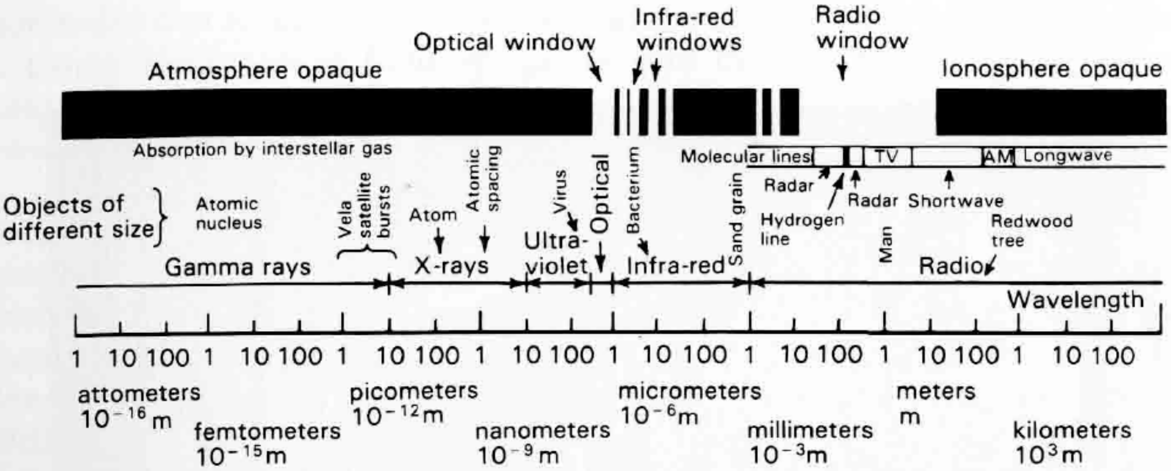


Figure 1-6 The electromagnetic spectrum with wavelength on a logarithmic scale from the shortest gamma rays to the longest radio waves. The atmospheric-ionospheric opacity is shown at the top with the optical and radio windows in evidence.

Thus, the wavelength depends on the velocity v which depends on the medium. In this sense, frequency is a more fundamental quantity since it is independent of the medium. When the medium is free space (vacuum)

$$v = c = 3 \times 10^8 \text{ m s}^{-1} \tag{2}$$

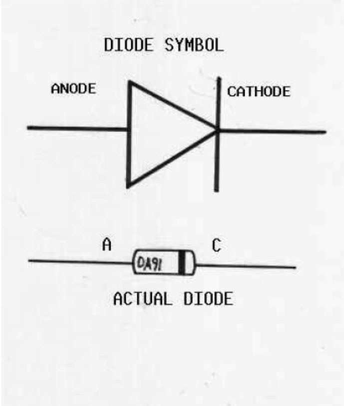
Figure 1-7 shows the relation of wavelength to frequency for $v = c$ (free space). Many of the uses of the spectrum are indicated along the right-hand edge of the figure. A more detailed frequency use listing is given in Table 1-1.

Table 1-1 Radio-frequency band designations

Frequency	Wavelength	Band designation
30–300 Hz	10–1 Mm	ELF (extremely low frequency)
300–3000 Hz	1 Mm–100 km	
3–30 kHz	100–10 km	VLF (very low frequency)
30–300 kHz	10–1 km	LF (low frequency)
300–3000 kHz	1 km–100 m	MF (medium frequency)
3–30 MHz	100–10 m	HF (high frequency)
30–300 MHz	10–1 m	VHF (very high frequency)
300–3000 MHz	1 m–10 cm	UHF (ultra high frequency)
3–30 GHz	10–1 cm	SHF (super high frequency)
30–300 GHz	1 cm–1 mm	EHF (extremely high frequency)
300–3000 GHz	1 mm–100 μm	
Frequency	**Wavelength**	**IEEE Radar Band designation**
1–2 GHz	30–15 cm	L
2–4 GHz	15–7.5 cm	S
4–8 GHz	7.5–3.75 cm	C
8–12 GHz	3.75–2.50 cm	X
12–18 GHz	2.50–1.67 cm	Ku
18–27 GHz	1.67–1.11 cm	K
27–40 GHz	1.11 cm–7.5 mm	Ka
40–300 GHz	7.5–1.0 mm	mm

easily by having many different tapping points on the coil so that adjustments can be made.

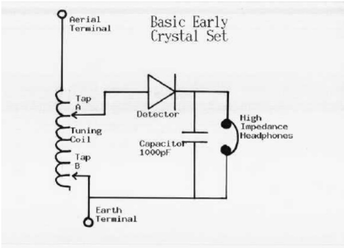
To make tuning easier a component called a tuning capacitor can be included in the circuit. In very early sets a tuning capacitor was not always included to keep costs down, or due to their being difficult to obtain.



An illustration of a modern diode which is often encapsulated in glass and is about 7mm long. Above is the electronic symbol for a diode.

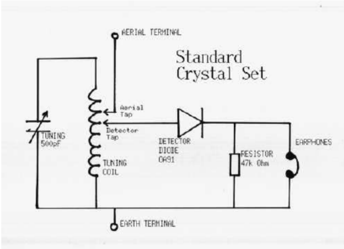
The Detector converts the radio wave received into an electrical wave that is suitable for the headphones to, in turn, convert into sound waves that can be heard by the human ear. In the very early days of the crystal set the detector consisted of a holder containing a piece of galena crystal that had a very thin and springy wire placed on its surface that had to be very delicately adjusted to find the sweet spot where the radio station could be heard. This was commonly referred to as a "Cat's Whisker". Modern detectors are called diodes and are more efficient than early detectors and cats whiskers. Diodes are still quite readily available and inexpensive. Part numbers for modern diodes include OA90, OA91 and IN34. Diode part numbers that are perhaps now more difficult to obtain include OA47 and OA81.

The headphones have to be of a very special type called high impedance headphones. Because there is no additional power source in a crystal set the current generated in the circuit is tiny - minuscule in fact. Ordinary low impedance headphones, such as Walkman headphones, would present a virtual short circuit to the crystal set allowing the tiny signals to drain away to earth & consequently producing no sound - not very useful!

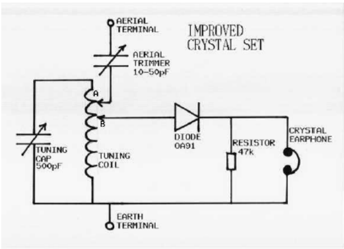


High impedance headphones, on the other hand, reduce or impede the flow of current down to earth, in effect saving the tiny signals to produce sounds from the headphones that we can then hear.

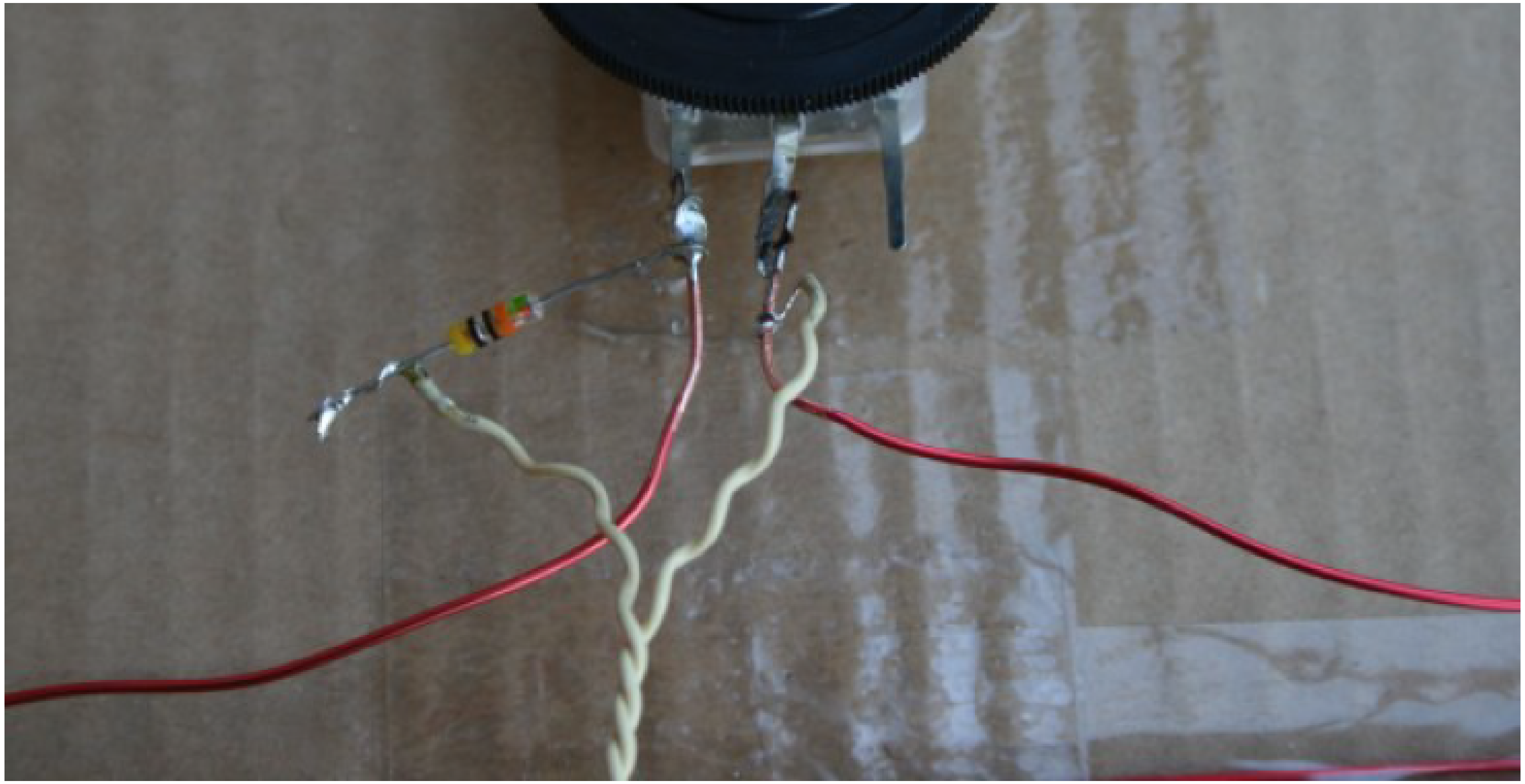
There is a problem however, these high impedance headphones that were so readily available in the 1920's and 1930's are to so easy to obtain today, but some specialist vintage radio outlets still stock them though the price can be quite high. They can still be seen in museums of course. All is not lost though, today we can obtain a special earphone called, appropriately, a crystal earpiece very easily and far more cheaply than. An electronic component, called a resistor, must be connected accross the crystal earphone to allow a path for DC current to get to earth. The value of the resistor is usually 47,000 Ohms and without it a crystal earphone tends to block DC current and as a consequence the sound will be very quiet and distorted.



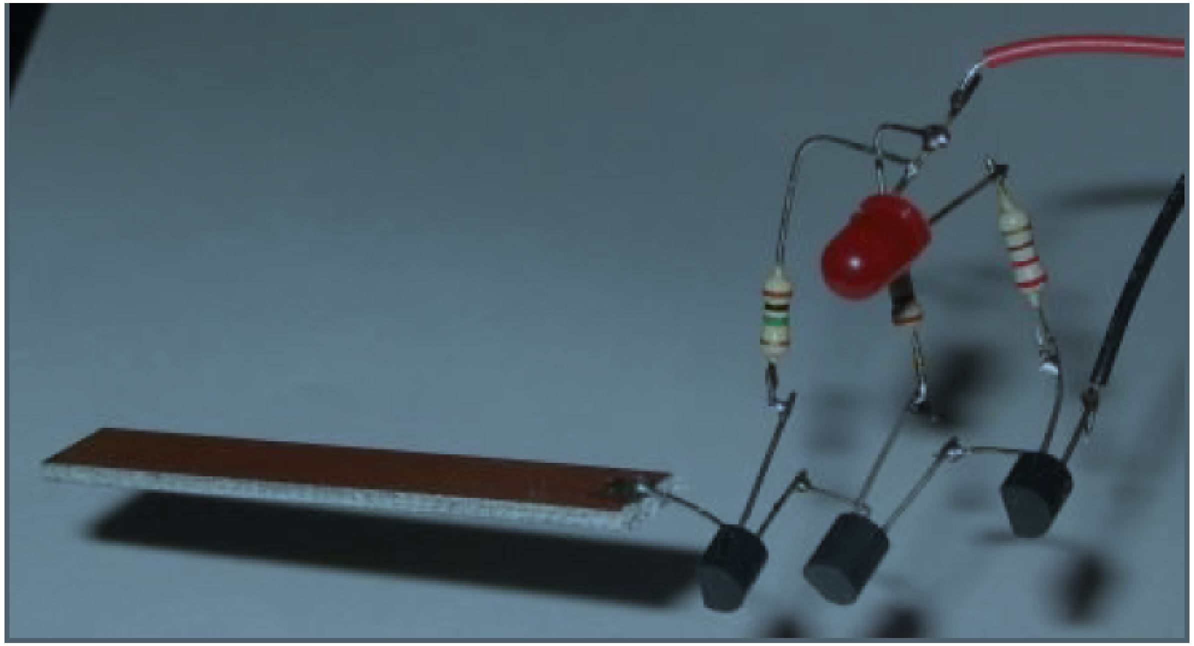
Aerial and Earth: For a crystal set work it needs an efficient aerial and earth. Since a crystal radio has no power - no batteries or mains electricity - it relies entirely on the radio wave energy sent out from the radio station's transmitter and collected by the aerial to work. The aerial simply consists of a length of wire, but it necessarily has to be quite long, usually in the order of 10 to 20 meters. For the aerial to be effective the crystal radio set also has to be connected to a good earth point. A good earth often consists of a 3 or 4 foot copper stake driven into the ground, but sometimes a water pipe can be used to reasonable effect. (Safety: Never use the earth pin of a household mains plug)



The circuit diagram (schematic) for a crystal set is shown below. Practical designs are shown on the following pages.

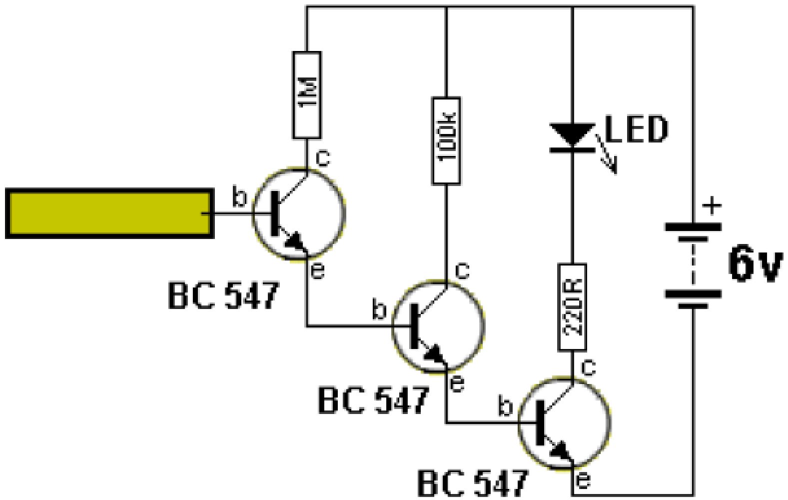


Click on photo for a larger picture



8 MILLION GAIN!

This circuit is so sensitive it will detect "mains hum." Simply move it across any wall and it will detect where the mains cable is located. It has a gain of about 200 x 200 x 200 = 8,000,000 and will also detect static electricity and the presence of your hand without any direct contact. You will be amazed what it detects! There is static electricity EVERYWHERE! The input of this circuit is classified as very high impedance.



Here is a photo of the circuit, produced by a constructor, where he claimed he detected "ghosts."

[Return to VK3YE amateur radio projects]

A simple crystal set for free power radio

Of any electronic project, the crystal set would have to rate as one of the most popular. Many amateurs are on the air today because of their early construction of a crystal set. Most practical electronic books for beginners include at least one crystal set project. Unfortunately, some of these circuits take simplicity too far and deliver mediocre performance, often by omitting key components such as the tuning capacitor, or failing to provide coil taps.

This article describes a crystal set of medium complexity. It features coil taps for the antenna and diode to make it useful for both country and metropolitan listeners. The taps allow the set to cover 160 metres if desired. All parts are easily obtainable, making it a good choice for the beginner. The endless possibilities for experimentation also make crystal sets interesting novelty projects for experienced constructors. The schematic is shown here:

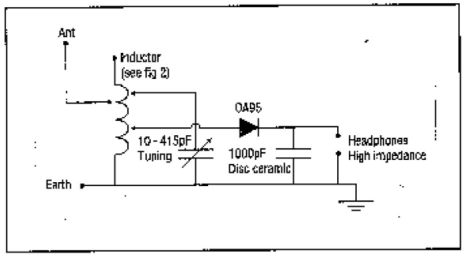


Figure One: Schematic diagram of crystal set

VK3YE Crystal Set

Schematic & Layout diagrams

Press Back button to return to main article

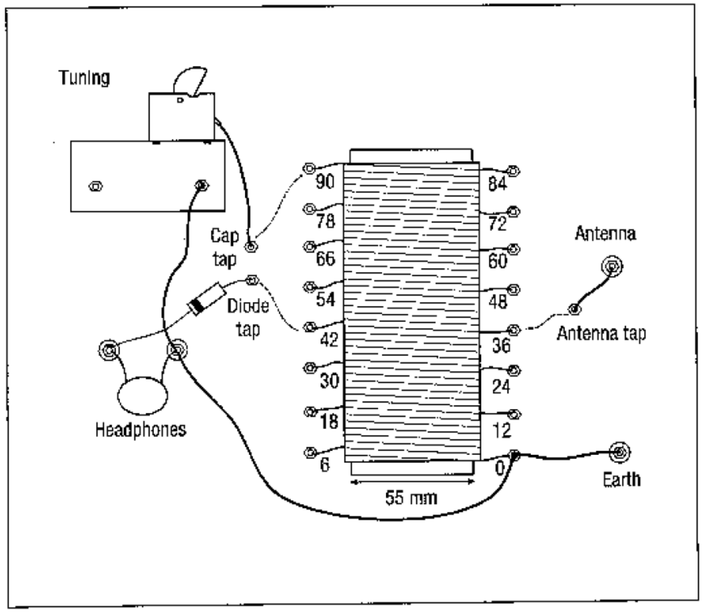


Figure Two: Rear view of front panel, showing coil details

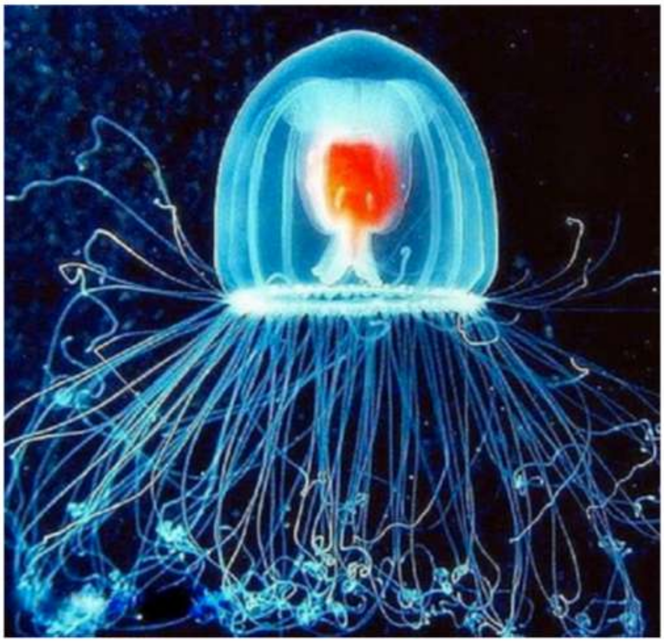
(from Amateur Radio February 2001, page 20)

Obtaining the parts

Tuning capacitor

4

The **immortal jellyfish** (*Turritopsis dohrnii*) is capable of biological immortality.



It's one of few known species capable of reverting completely to a sexually immature, colonial polyp stage after having reached sexual maturity as a solitary (free-floating) individual (called a medusa).

> Theoretically, this process can go on indefinitely, effectively rendering the jellyfish biologically immortal

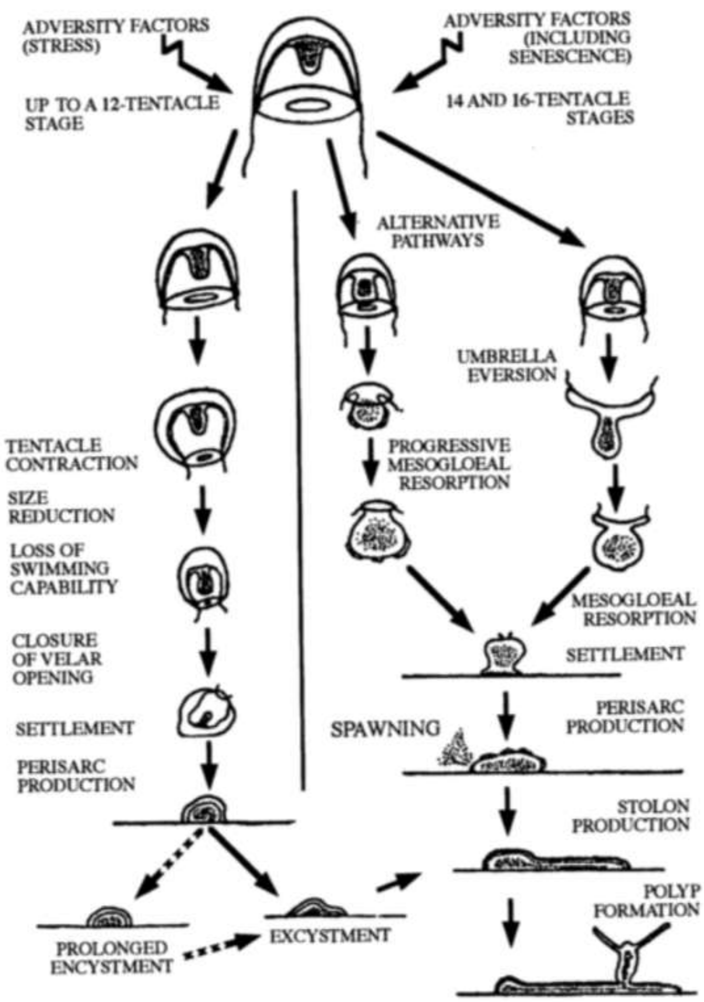
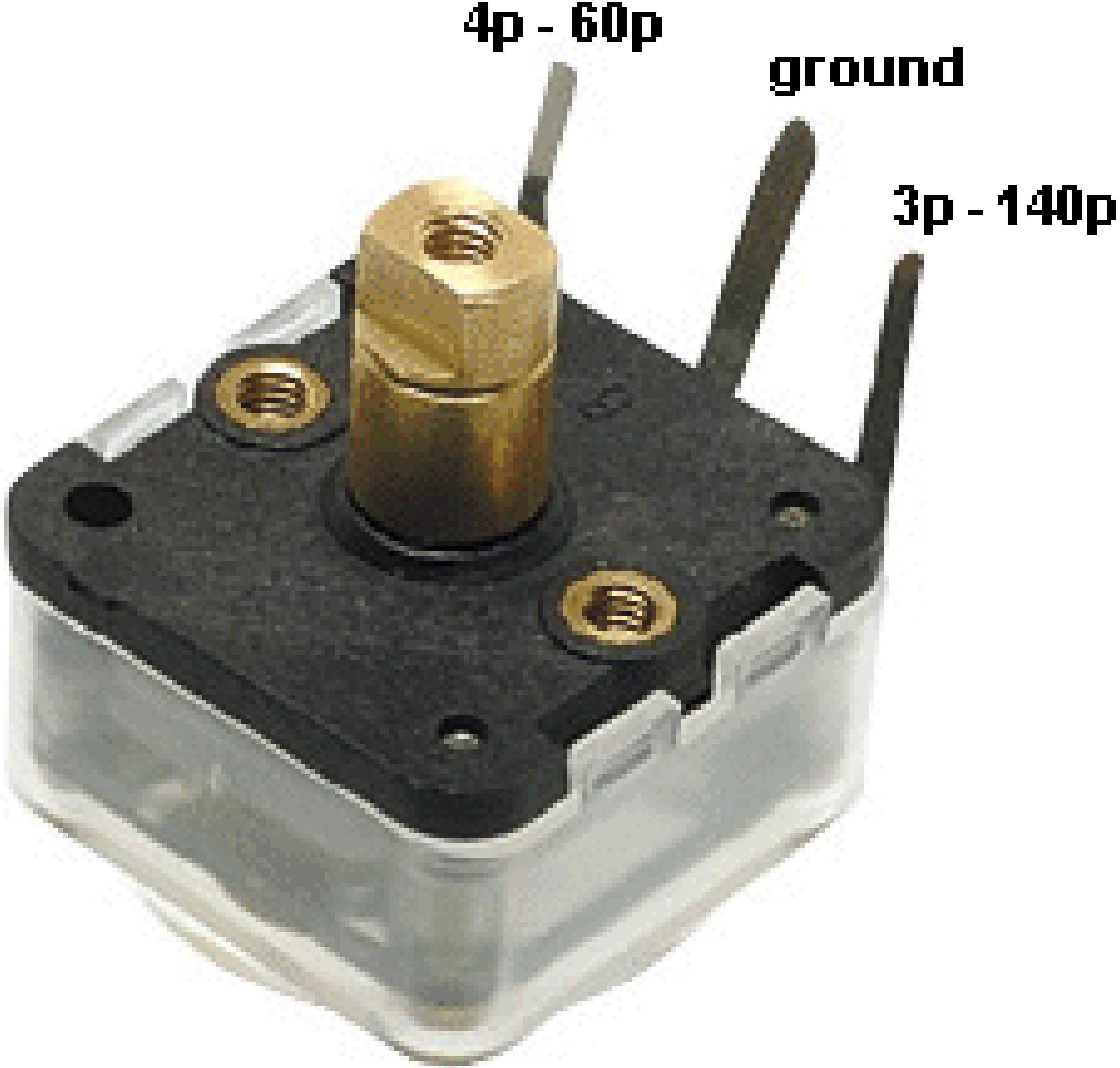


Figure 3. Pathways of transformation from medusa into polyp. Fate of stressed medusae up to 12-tentacle stage (left side), and alternative transformations of stressed or spawning medusae from a 14-tentacle or 16-tentacle stage (right side). The final product is always the polyp colony (bottom), directly or through a resting stage.


4p - 60p
ground
3p - 140p


© www.petervis.com


eisco
Germanium Diode
A
K
1N60
Max. 50 V
CE

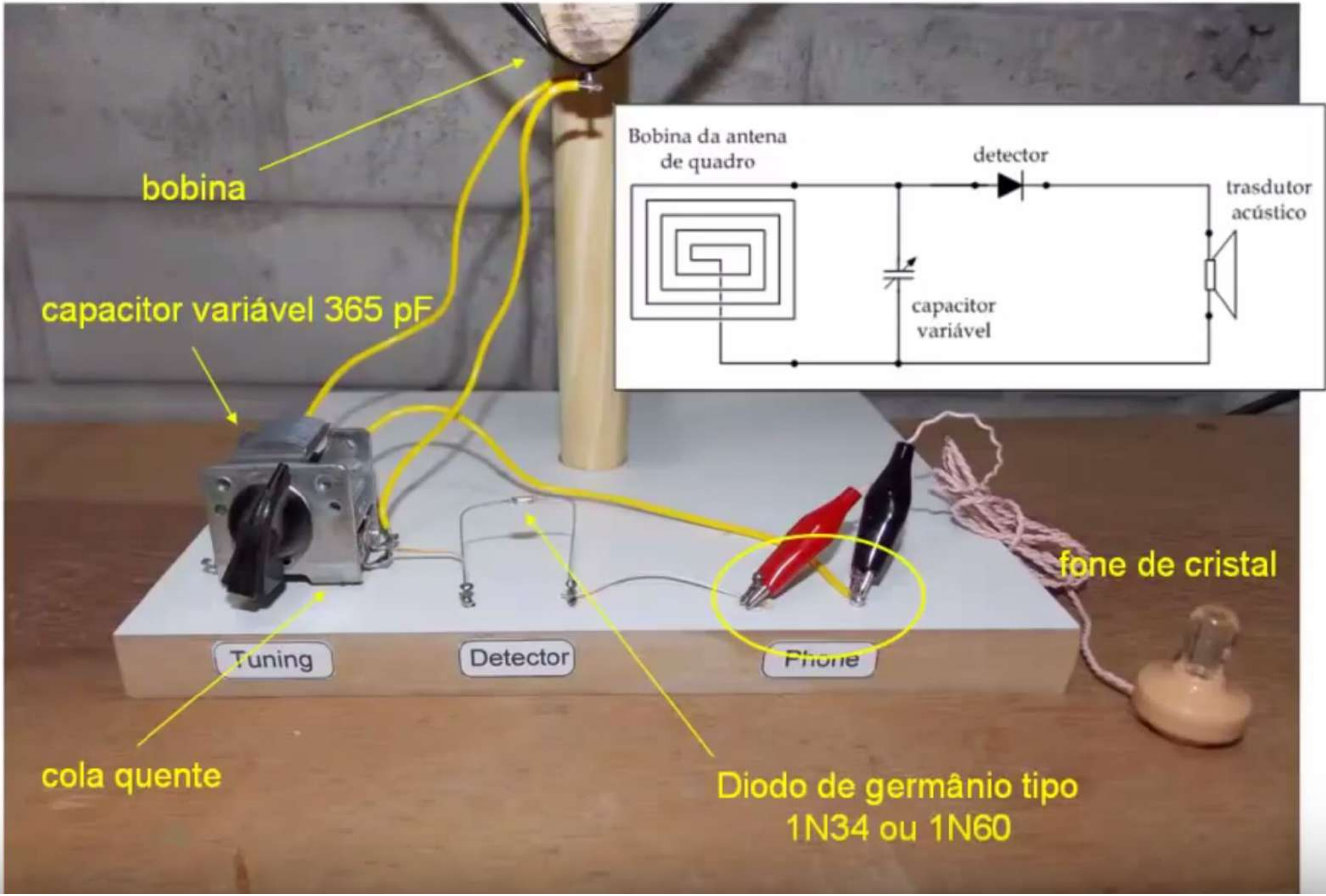

bobina
capacitor variável 365 pF
cola quente
Tuning
Detector
Phone
fone de cristal
Diodo de germânio tipo
1N34 ou 1N60
Bobina da antena
de quadro
detector
trasdutor
acústico
capacitor
variável

Figure 12. (**a**) Output power for a half-wave and full-wave CWVM, and (**b**) portable electronic calculator running with the AM energy harvester. Detected input signal in LC resonator is 1.5 V at 1 MHz.

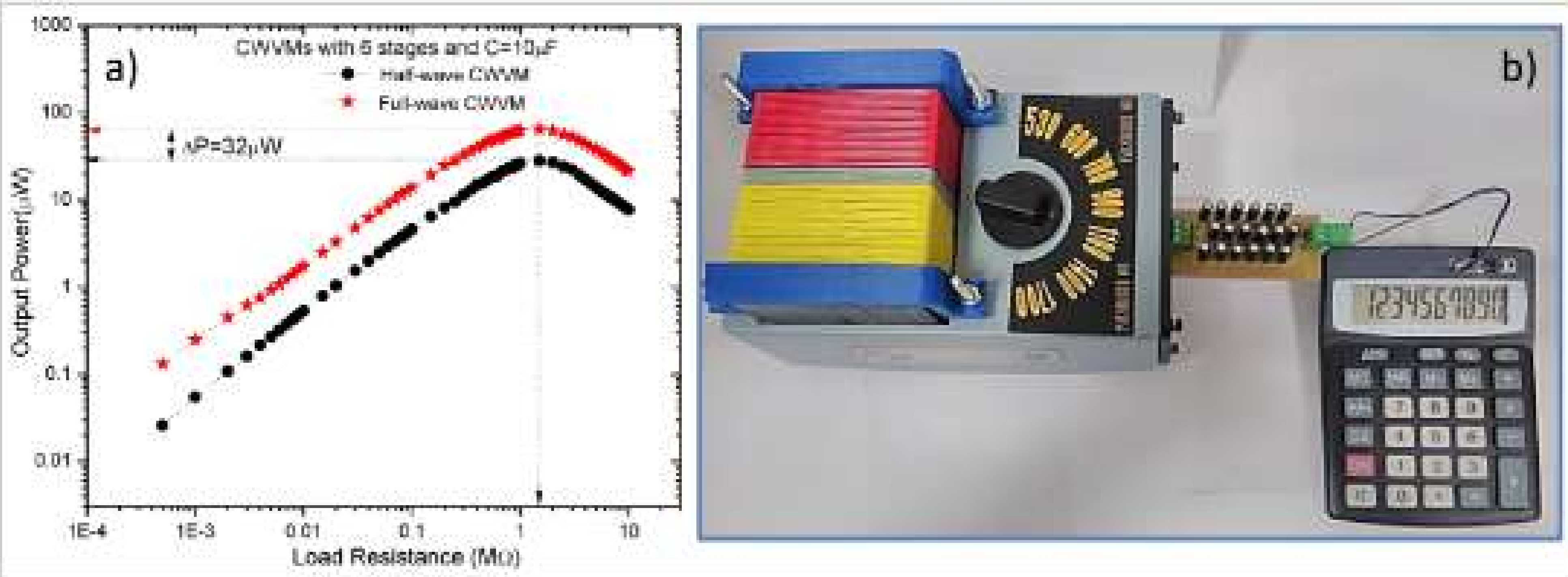
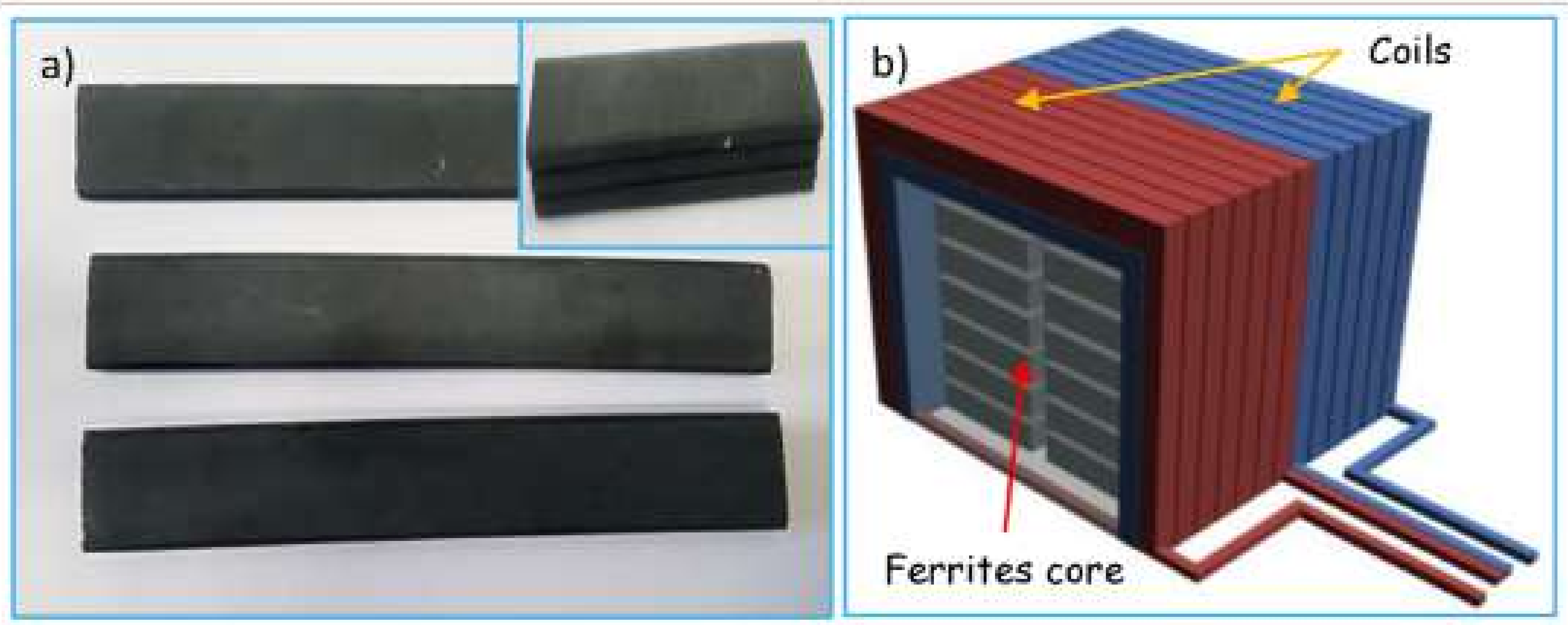
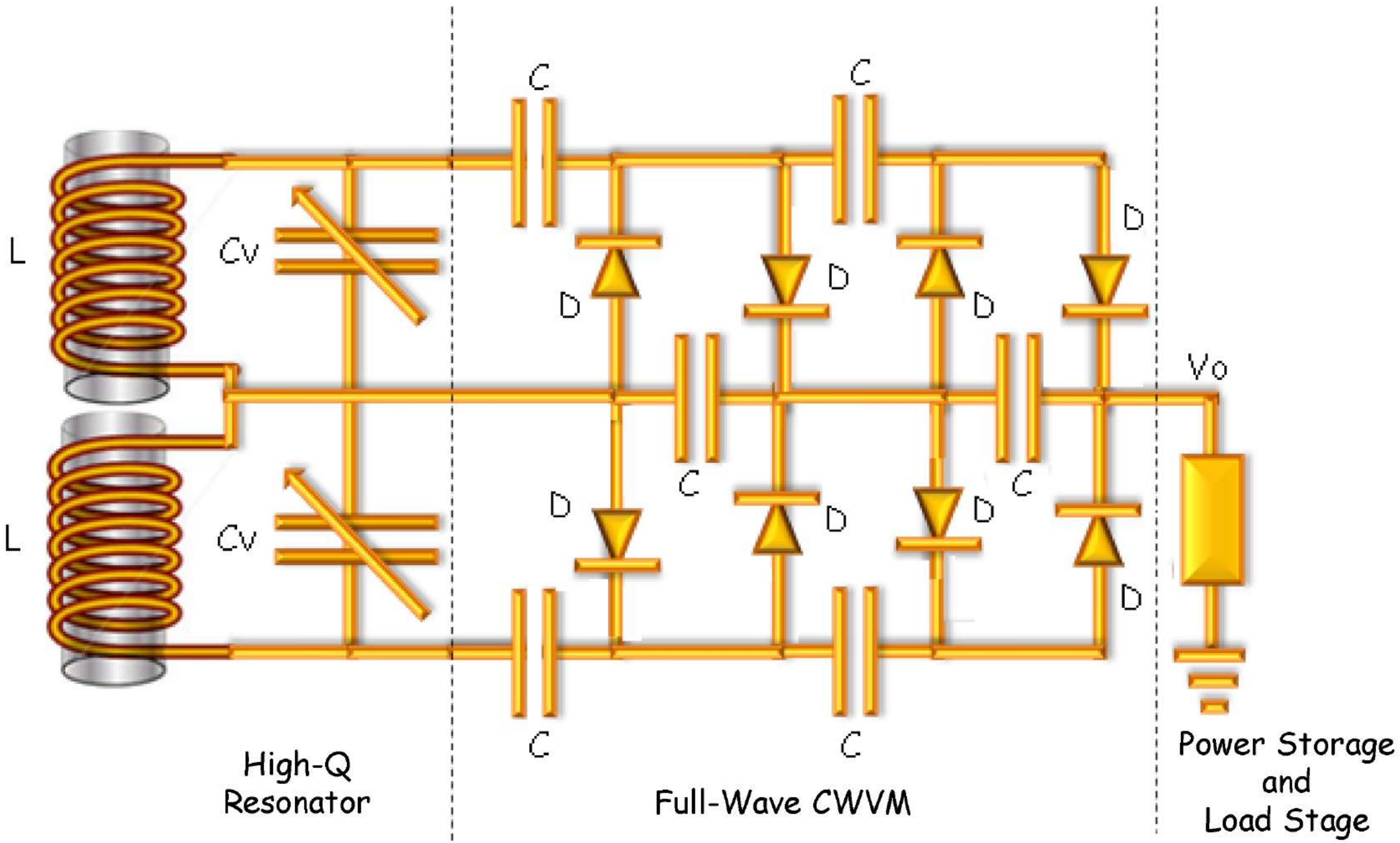


Figure 4. (**a**) Ferrite cores used for antenna coil, inset shows the stacked cores, and (**b**) scheme of the composed ferrite core.




L
Cv
C
D
Vo
High-Q
Resonator
Full-Wave CWVM
Power Storage
and
Load Stage

×

Figure 5. (**a**) circuit for a six-stage conventional CWVM, and (**b**) circuit for a six-stage full wave-CWVM. Here, Cs stands for the series capacitances.

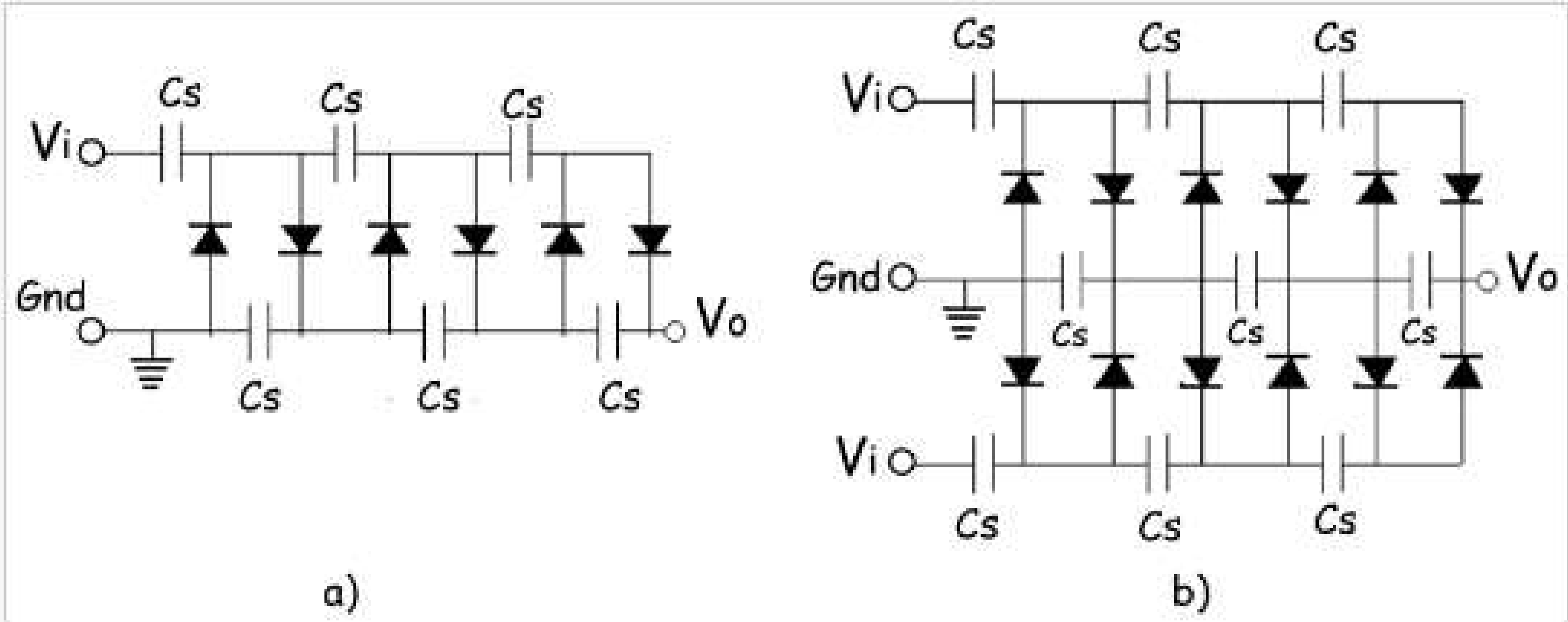


Figure 6. Pictorial image of the AM-RF energy harvesting system.

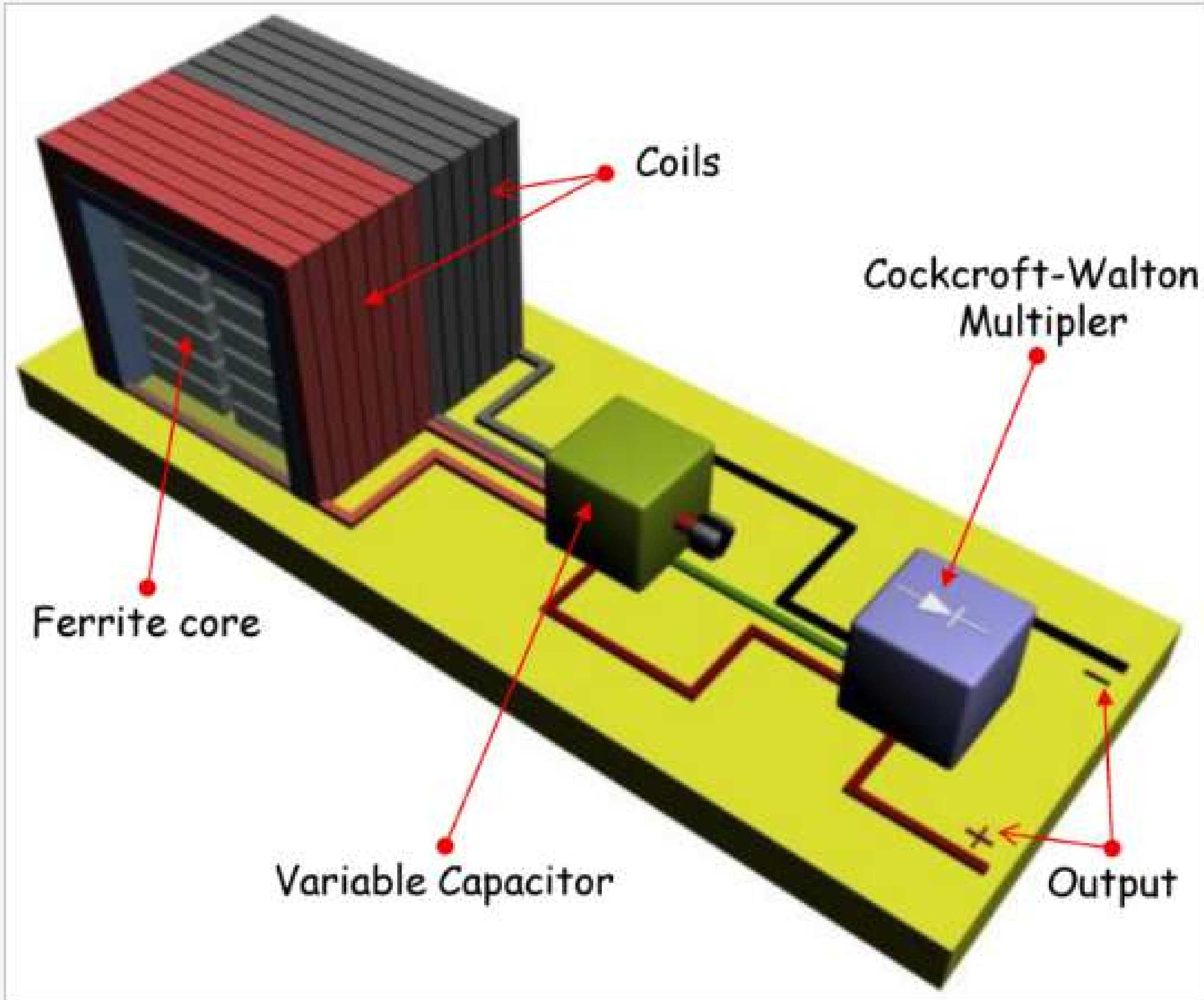
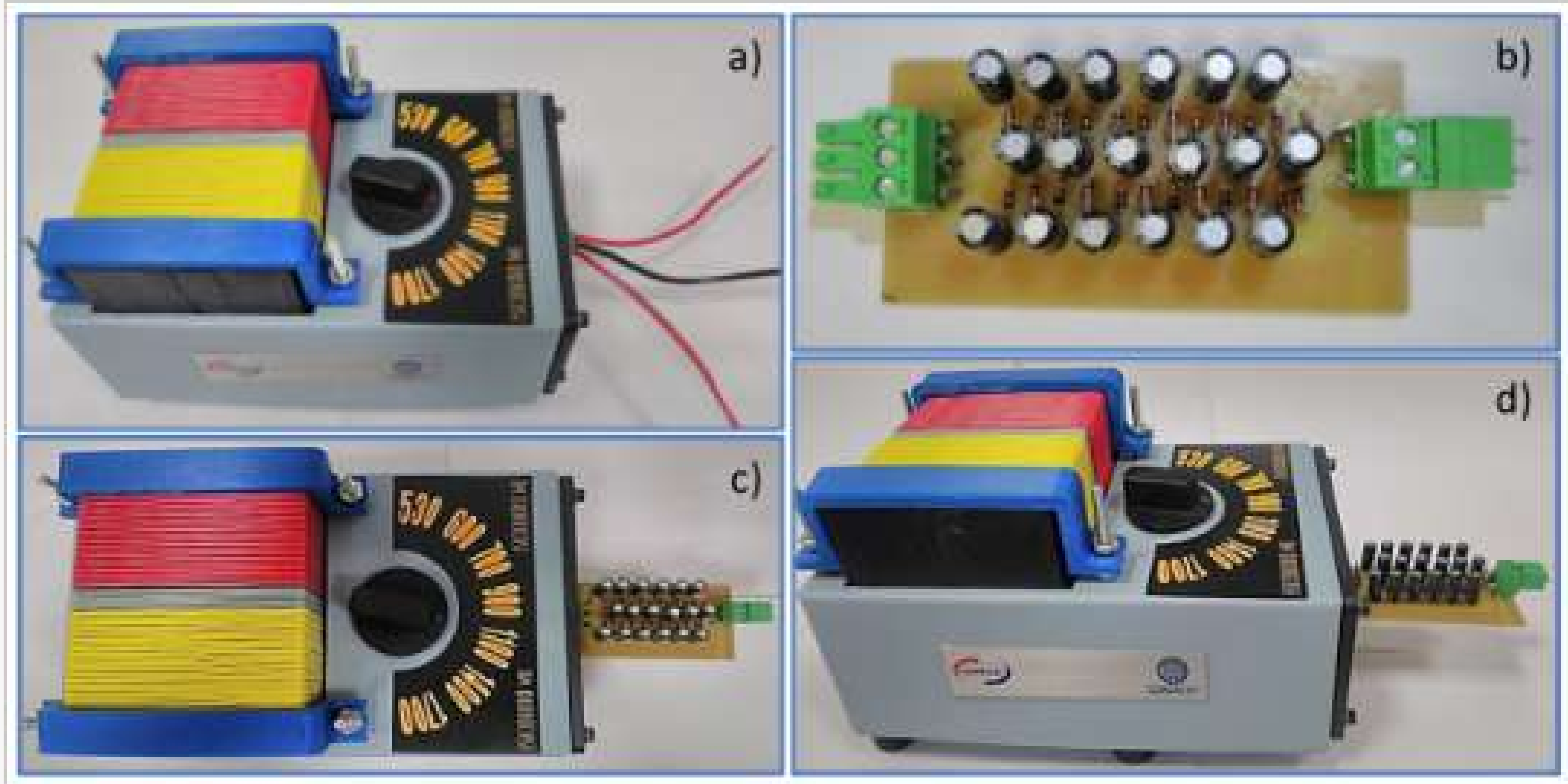


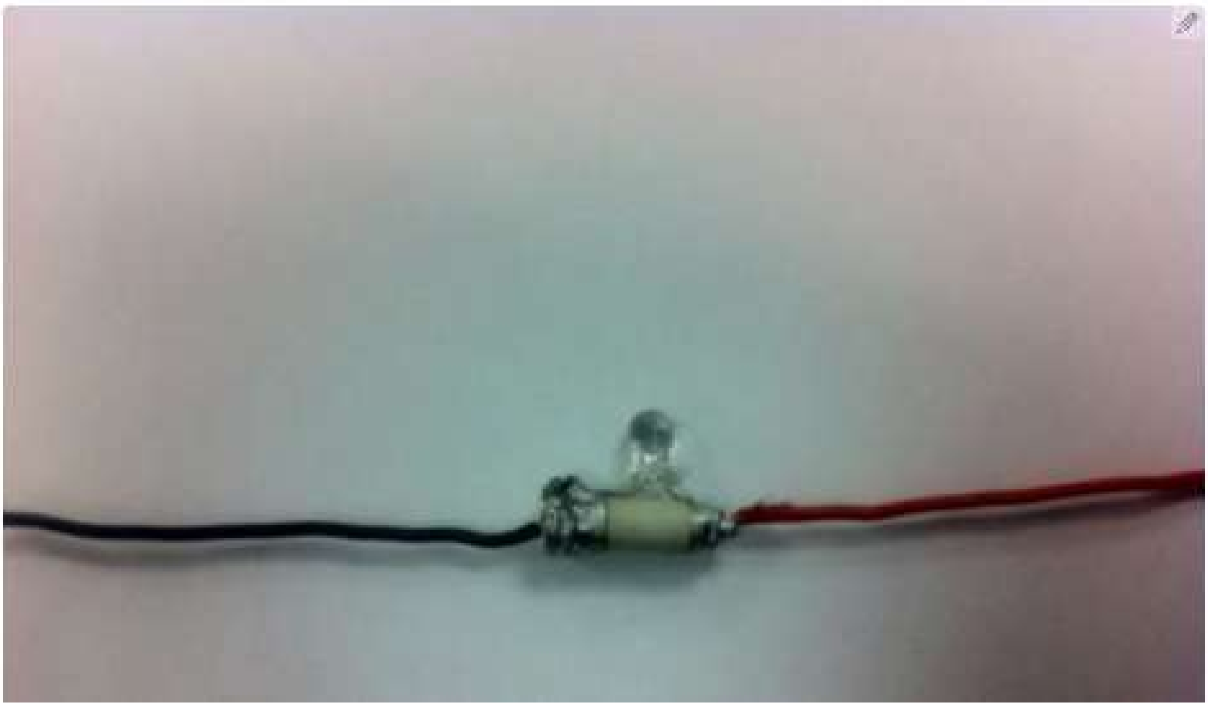
Figure 11. (a) AM resonator implemented, (b) Full-wave CWVM implemented, (c) top view of the AM resonator and full-wave CWVM, and (d) lateral view of the AM resonator and full-wave CWVM.

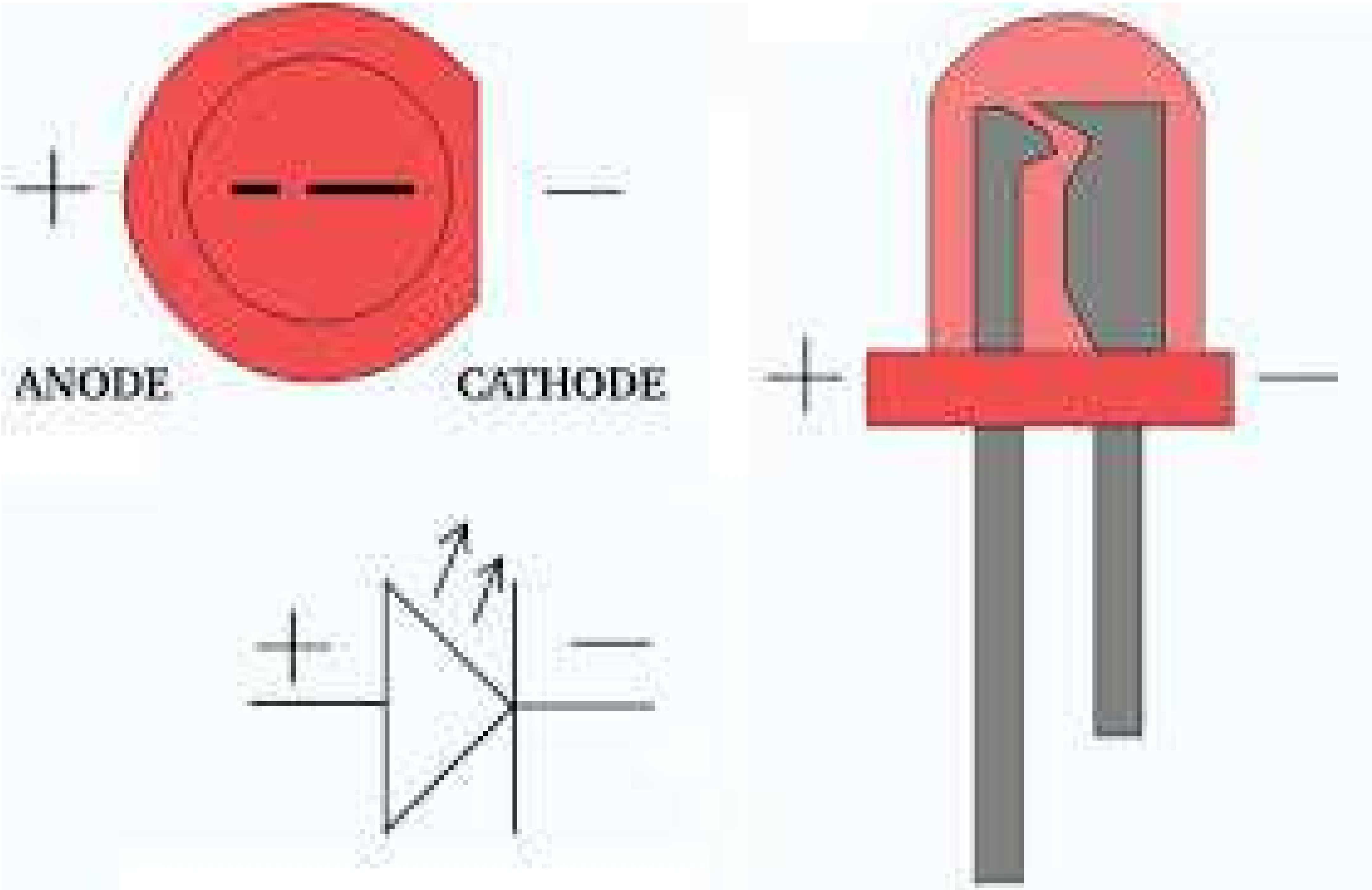


Step 1: LED+RF Diode

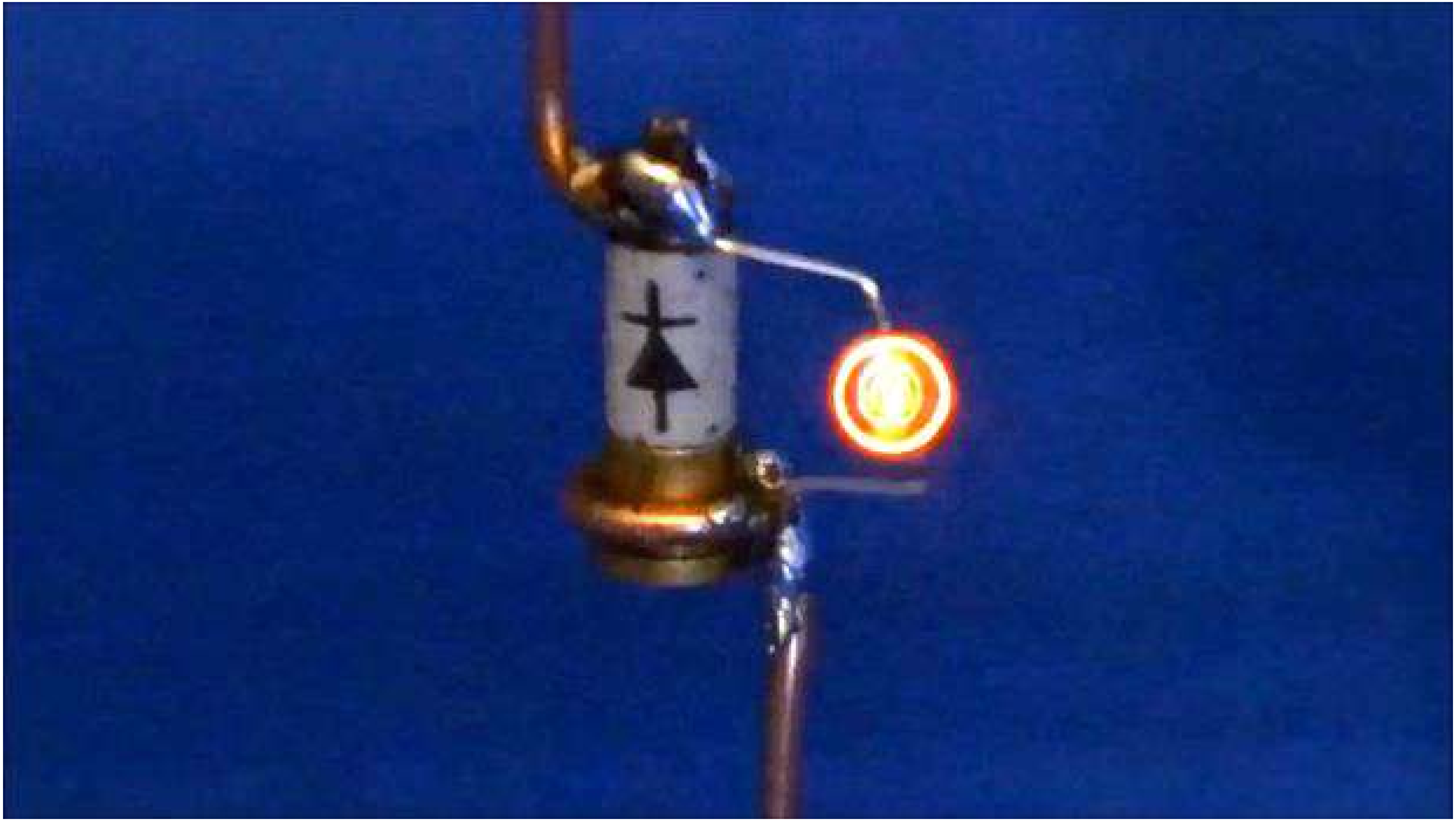
First Solder the led parallel to the Rf diode

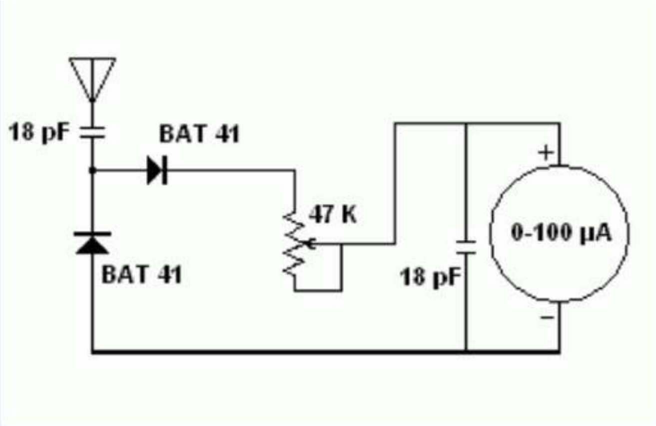
Step 2: RF Diode+ LED+ Wires

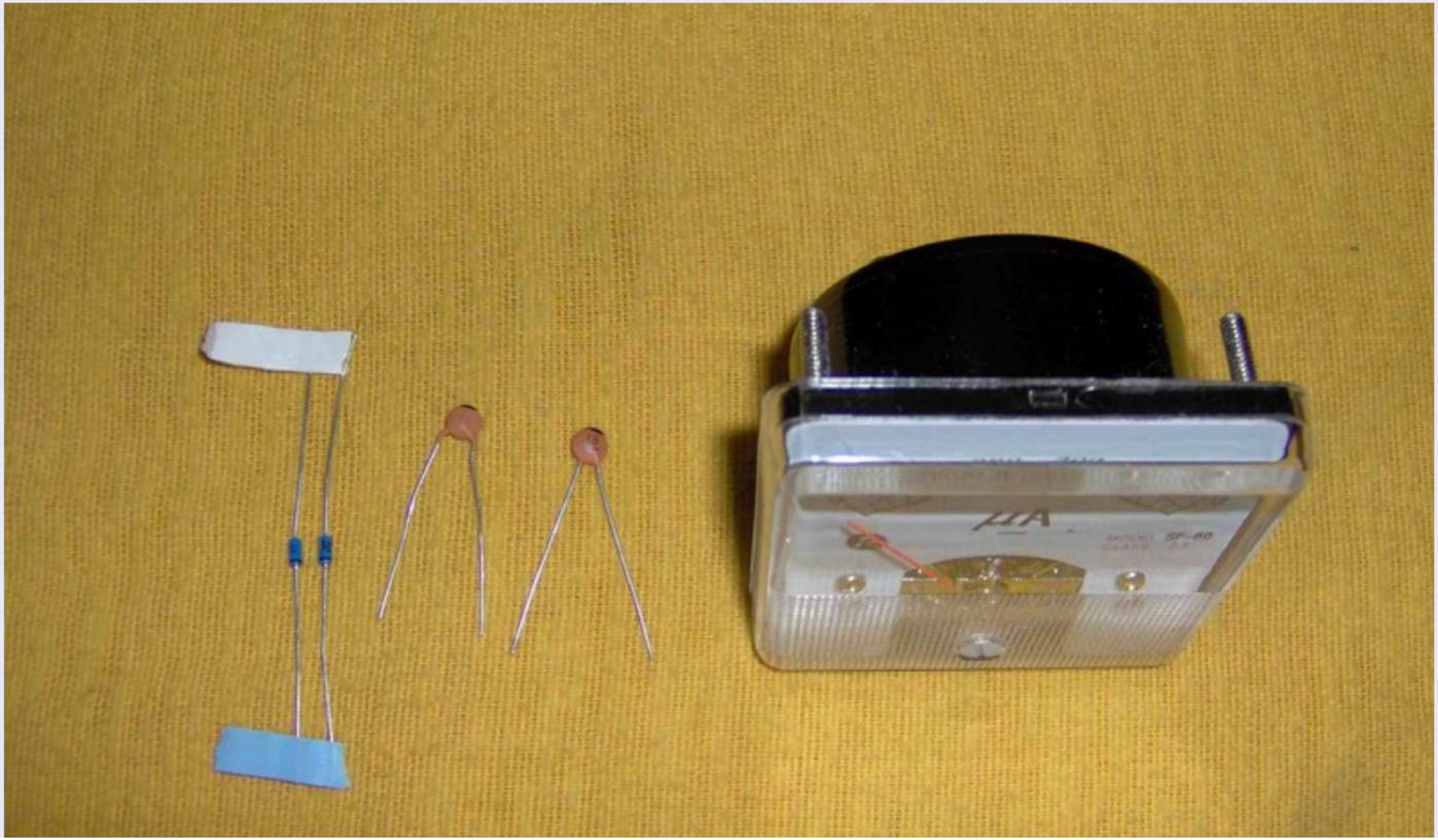


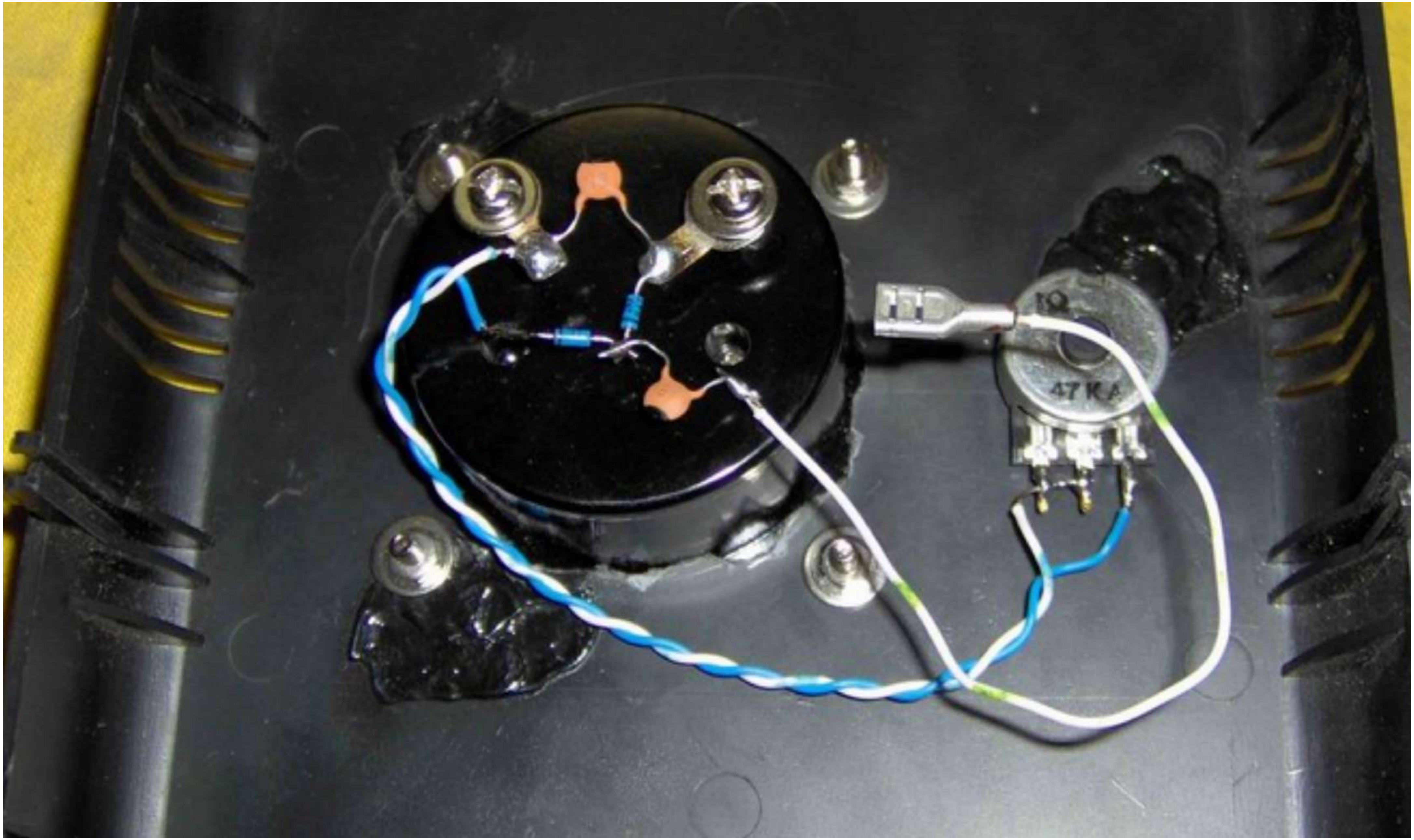


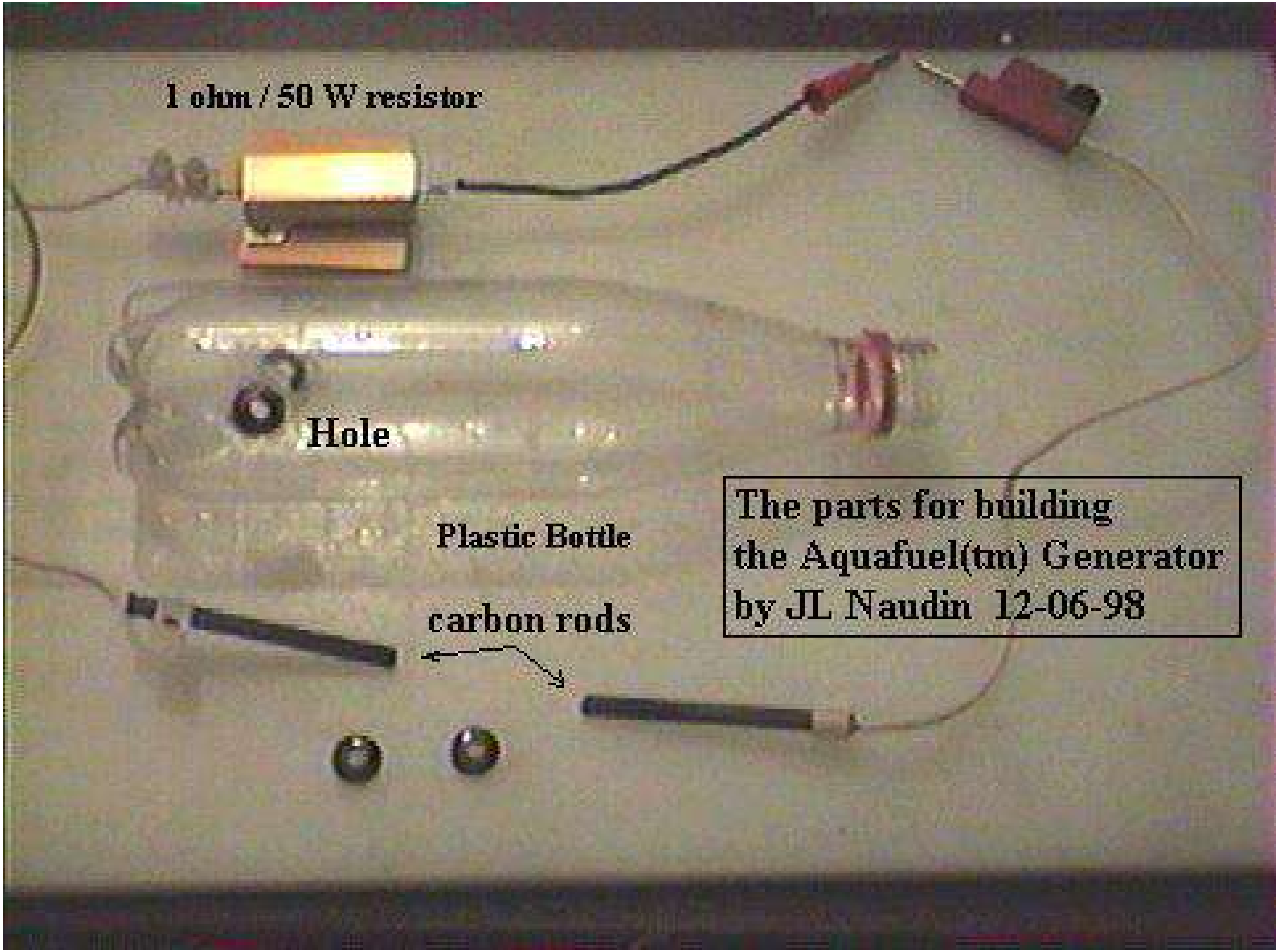
+
ANODE
—
CATHODE

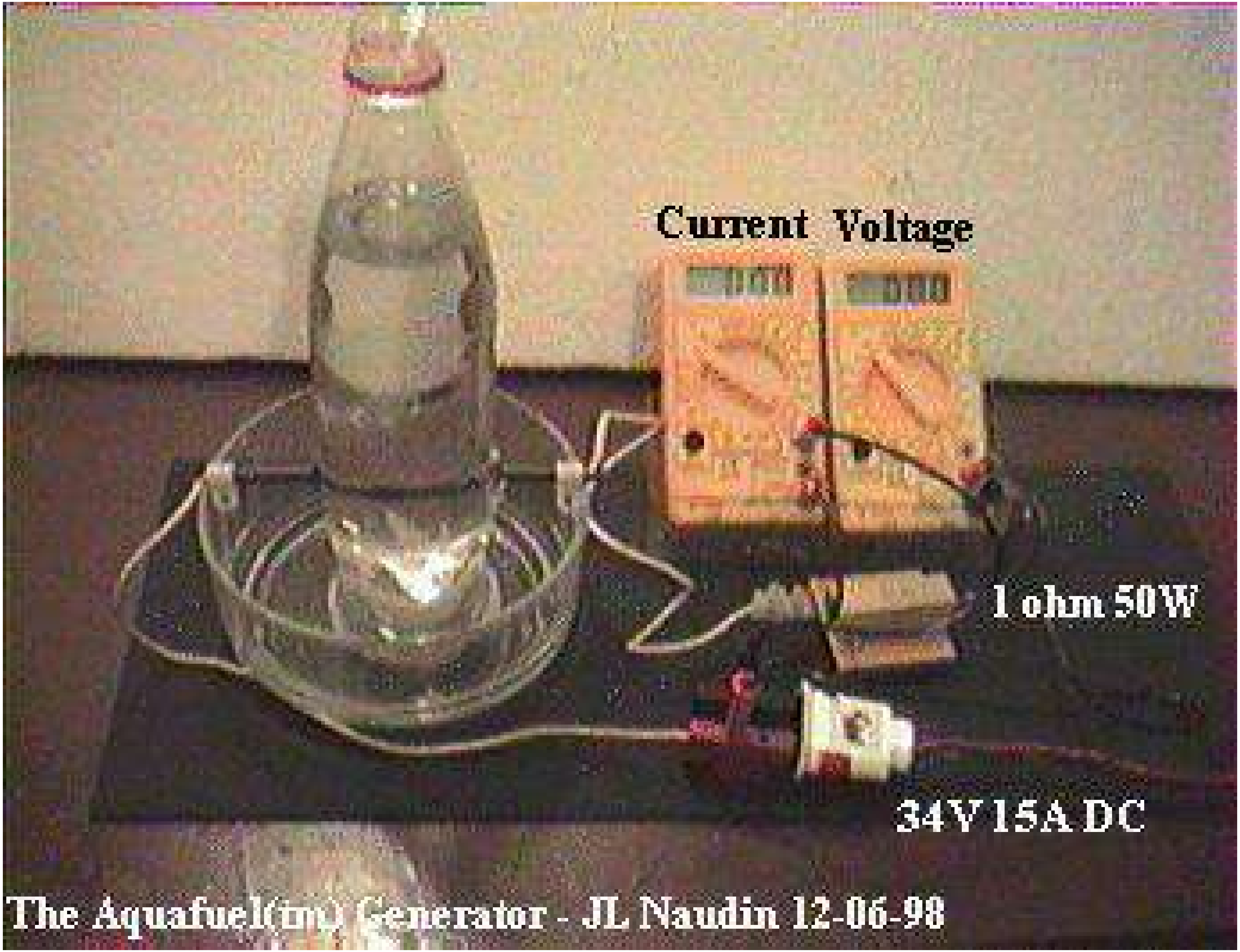


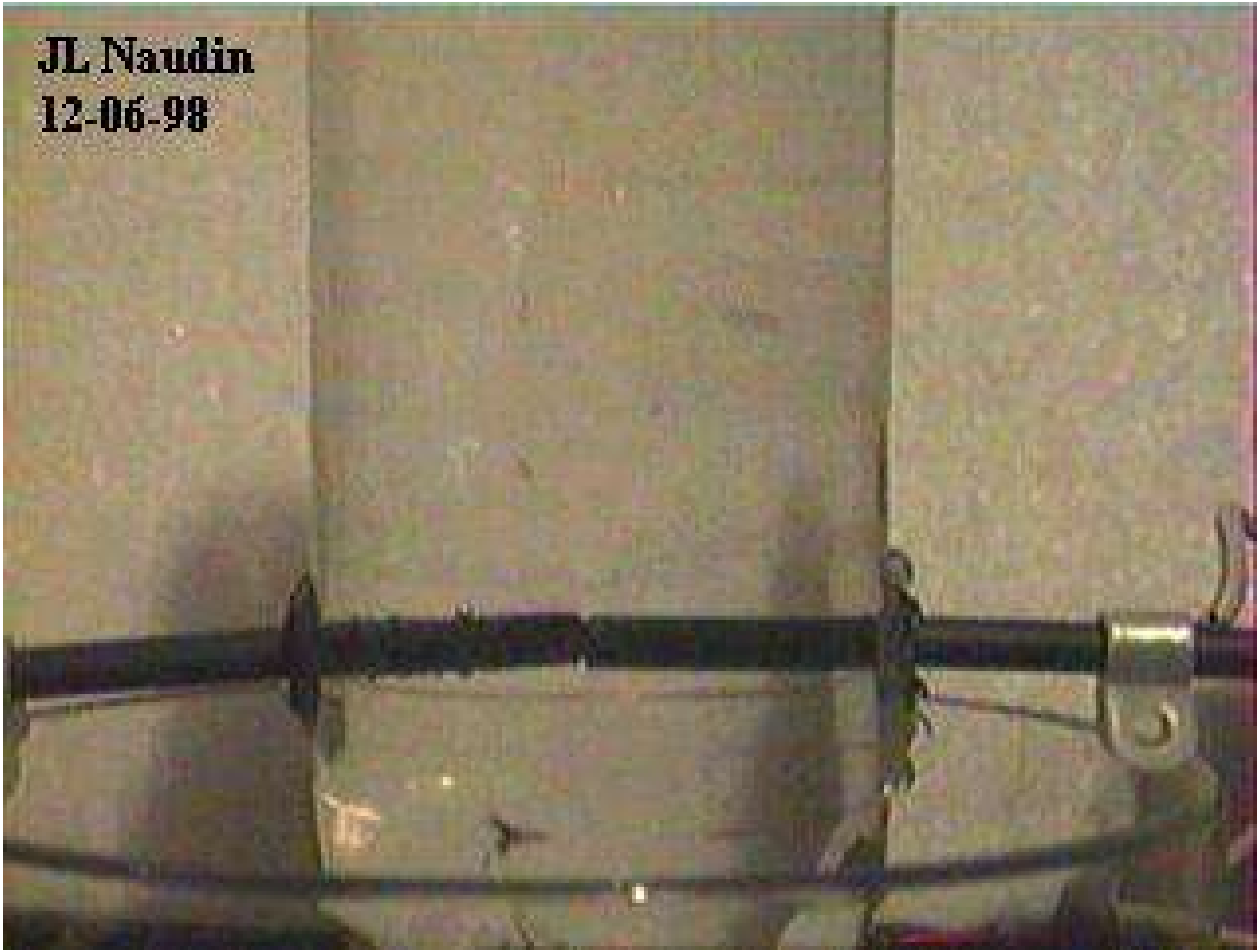

18 pF
BAT 41
47 K
0-100 µA
BAT 41
18 pF
+
−

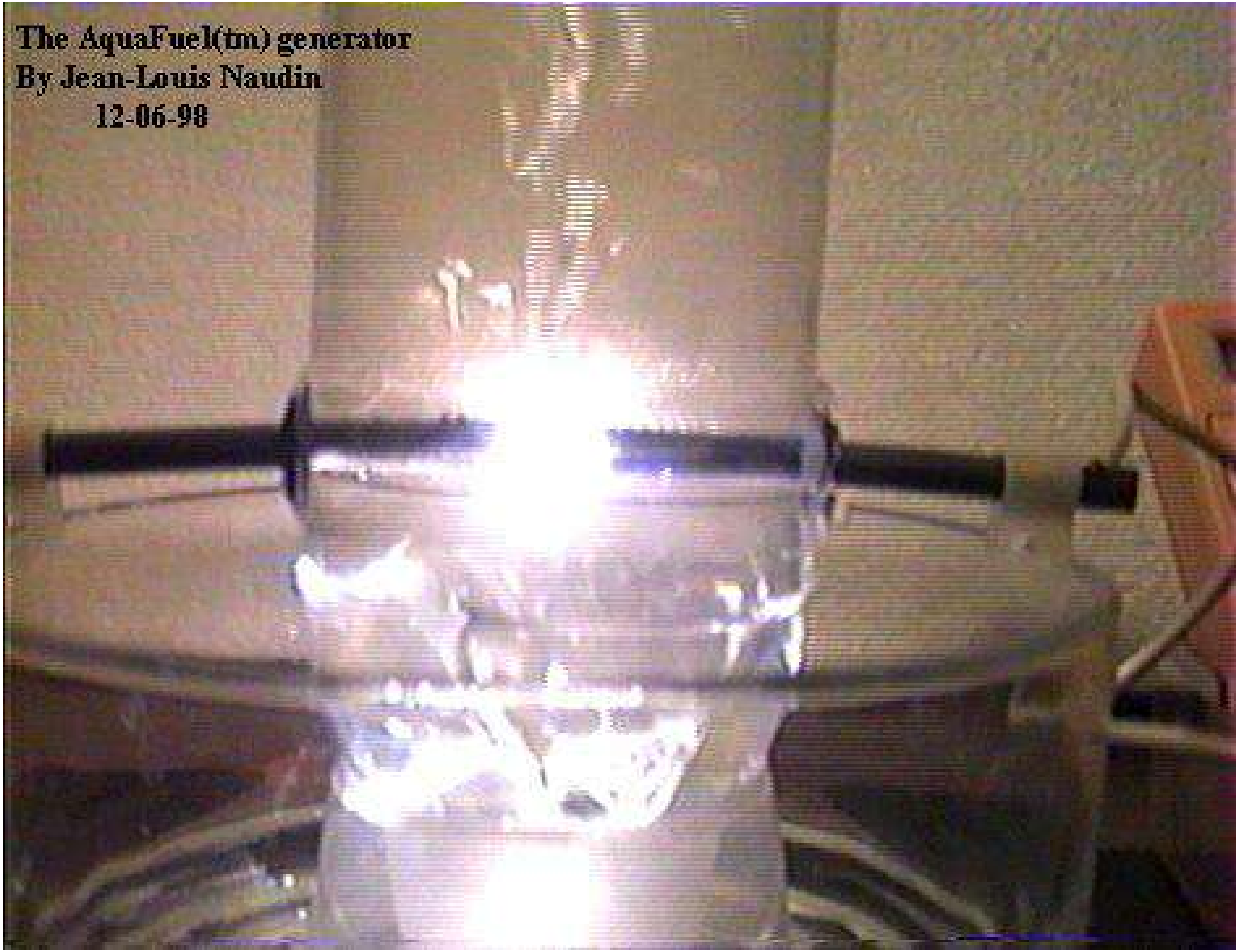

µA

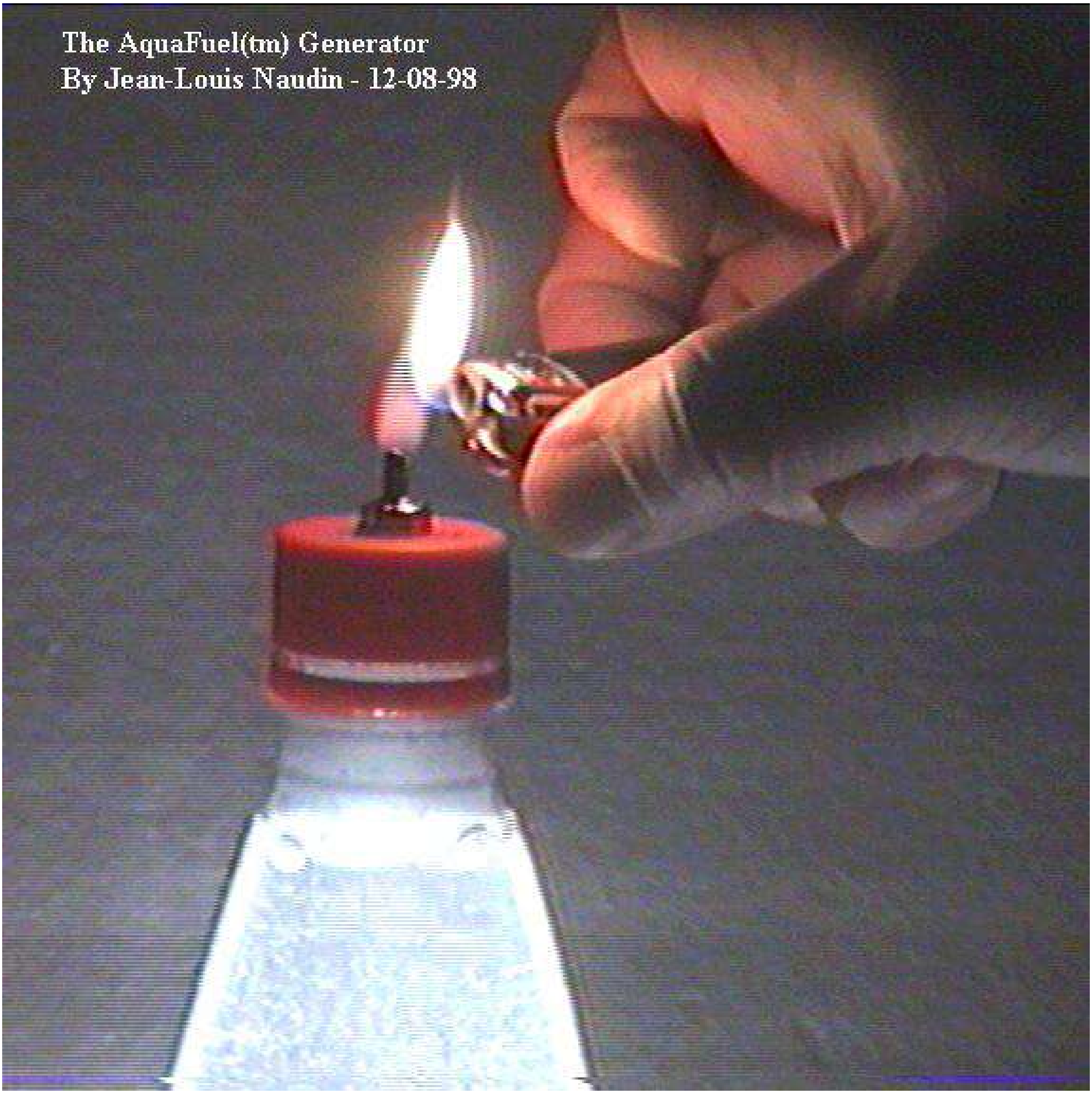

47 KA


1 ohm / 50 W resistor
Hole
Plastic Bottle
carbon rods
The parts for building
the Aquafuel(tm) Generator
by JL Naudin 12-06-98

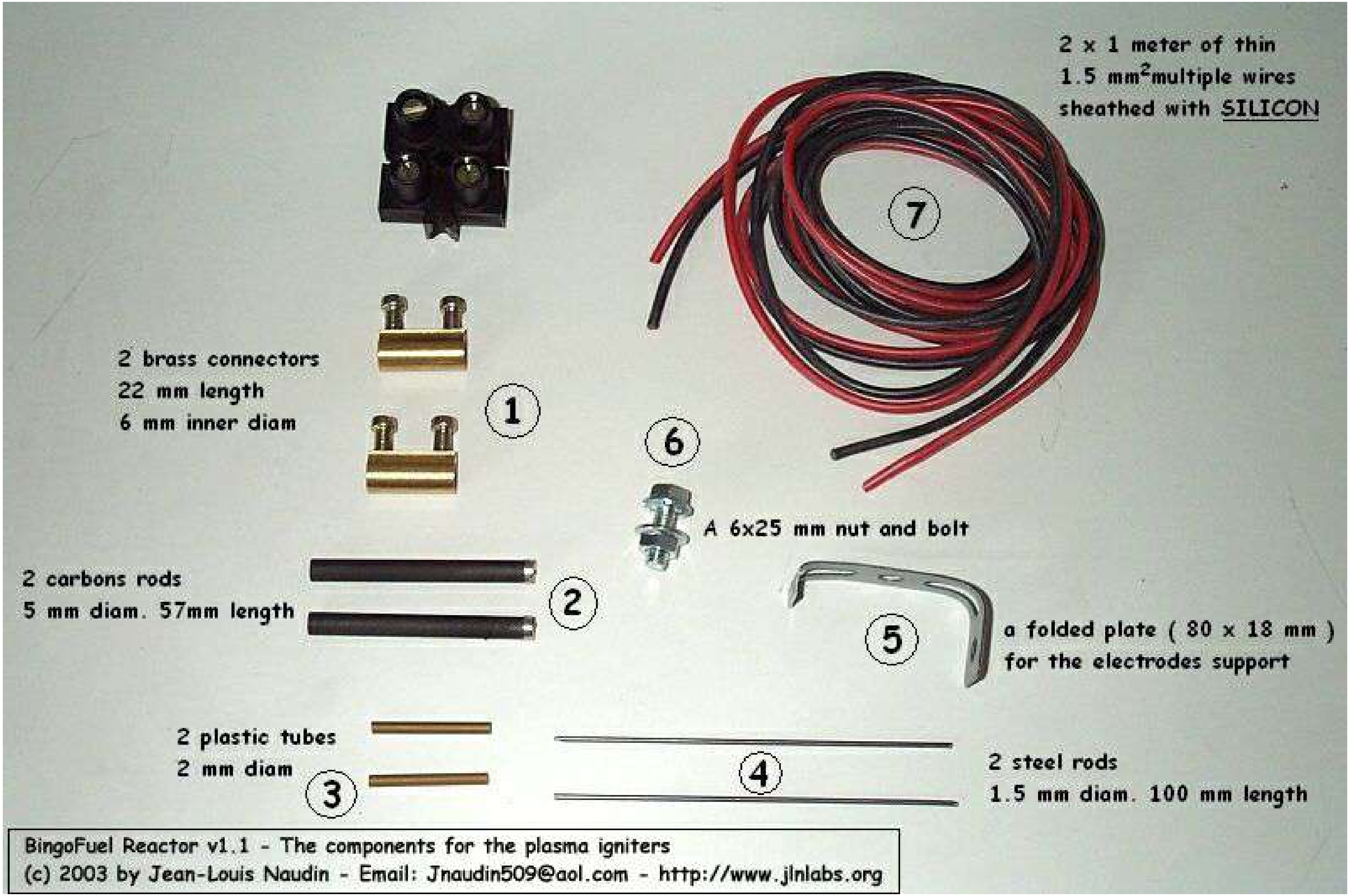

Current
Voltage
1 ohm 50W
34V 15A DC
The Aquafuel(tm) Generator - JL Naudin 12-06-98


JL Naudin
12-06-98

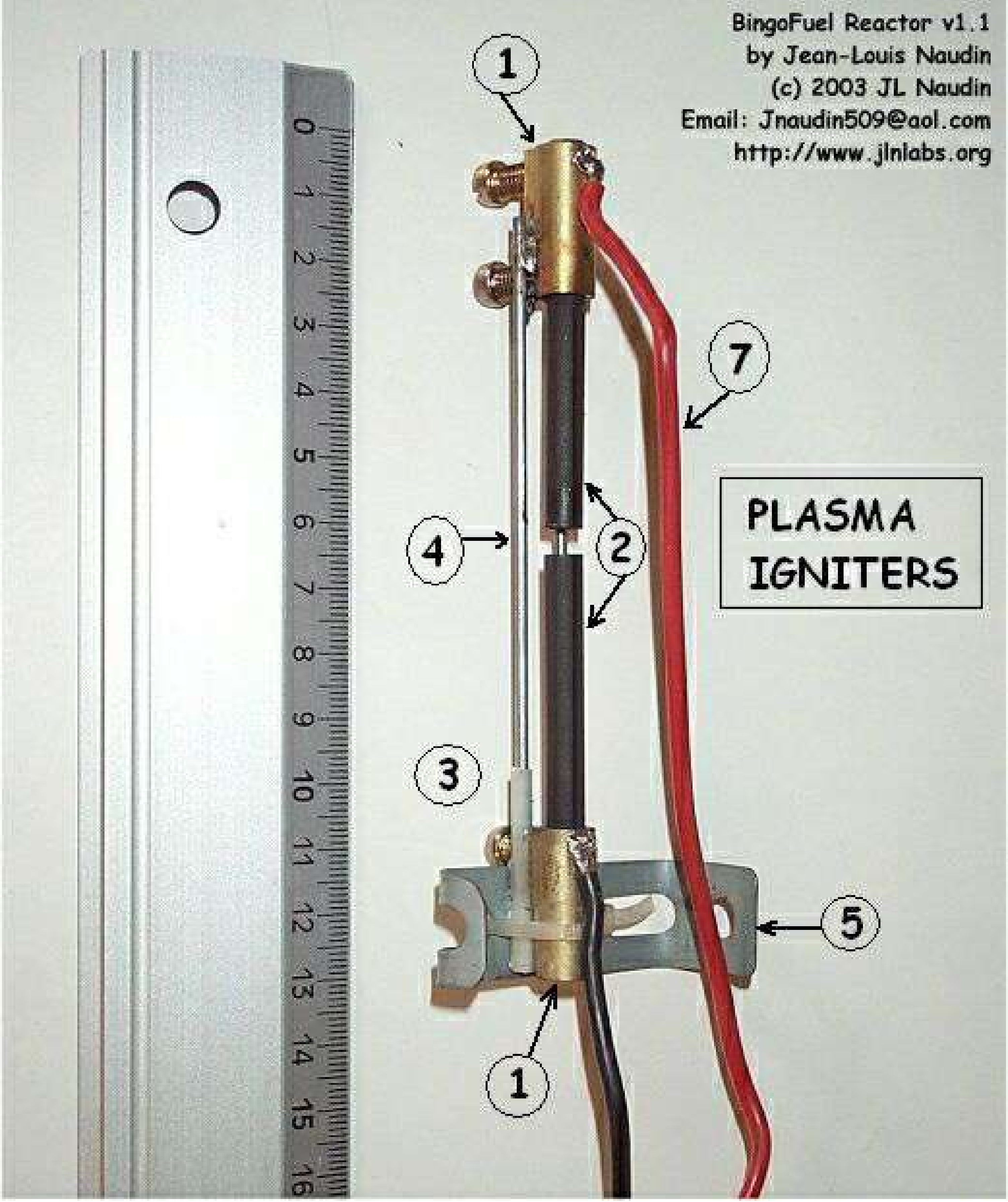

The AquaFuel(tm) generator
By Jean-Louis Naudin
12-06-98

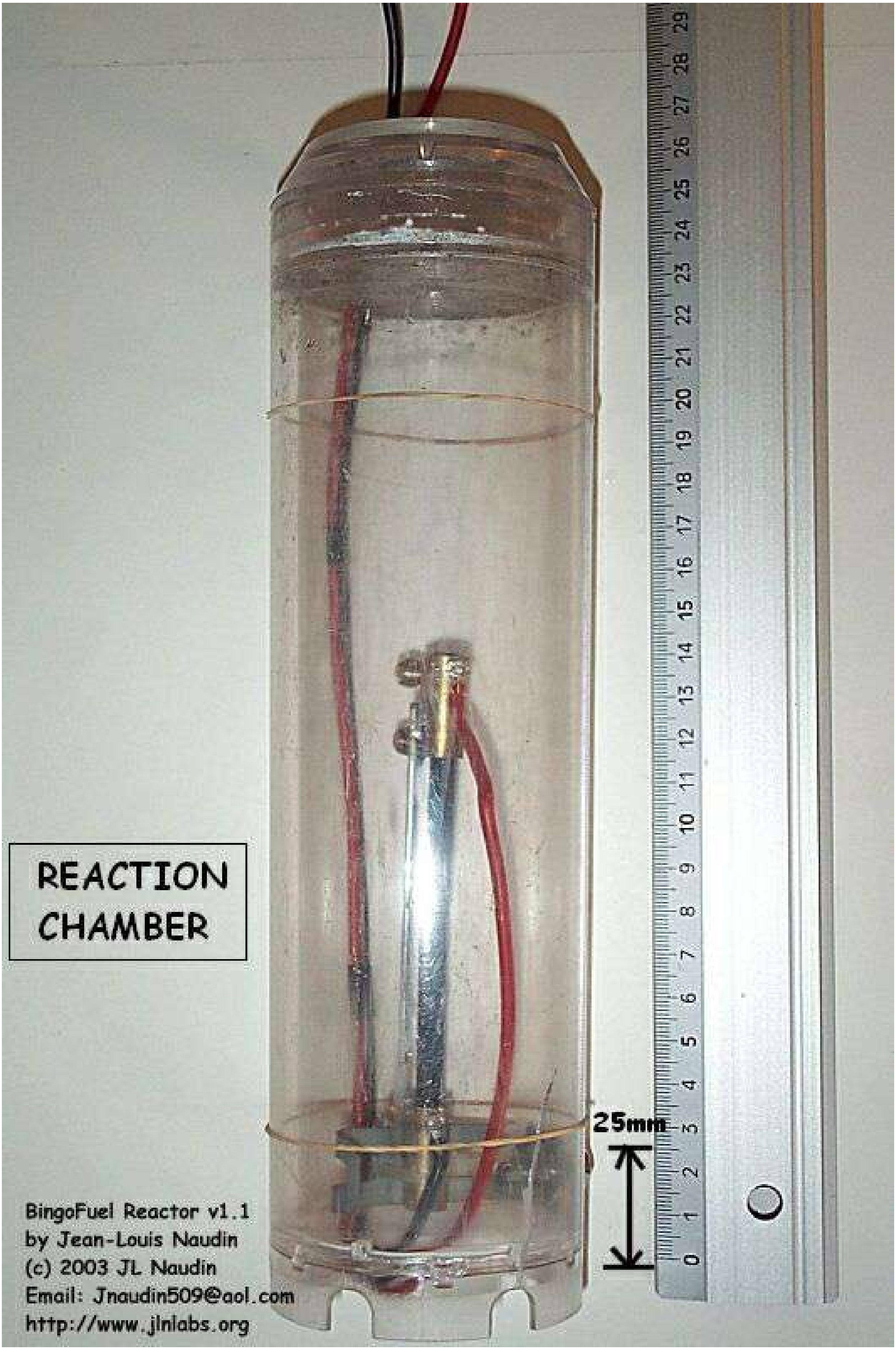

The AquaFuel(tm) Generator
By Jean-Louis Naudin - 12-08-98

BingoFuel Reactor v1.1 - The components for the reactor and and reaction chamber
(c) 2003 by Jean-Louis Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org

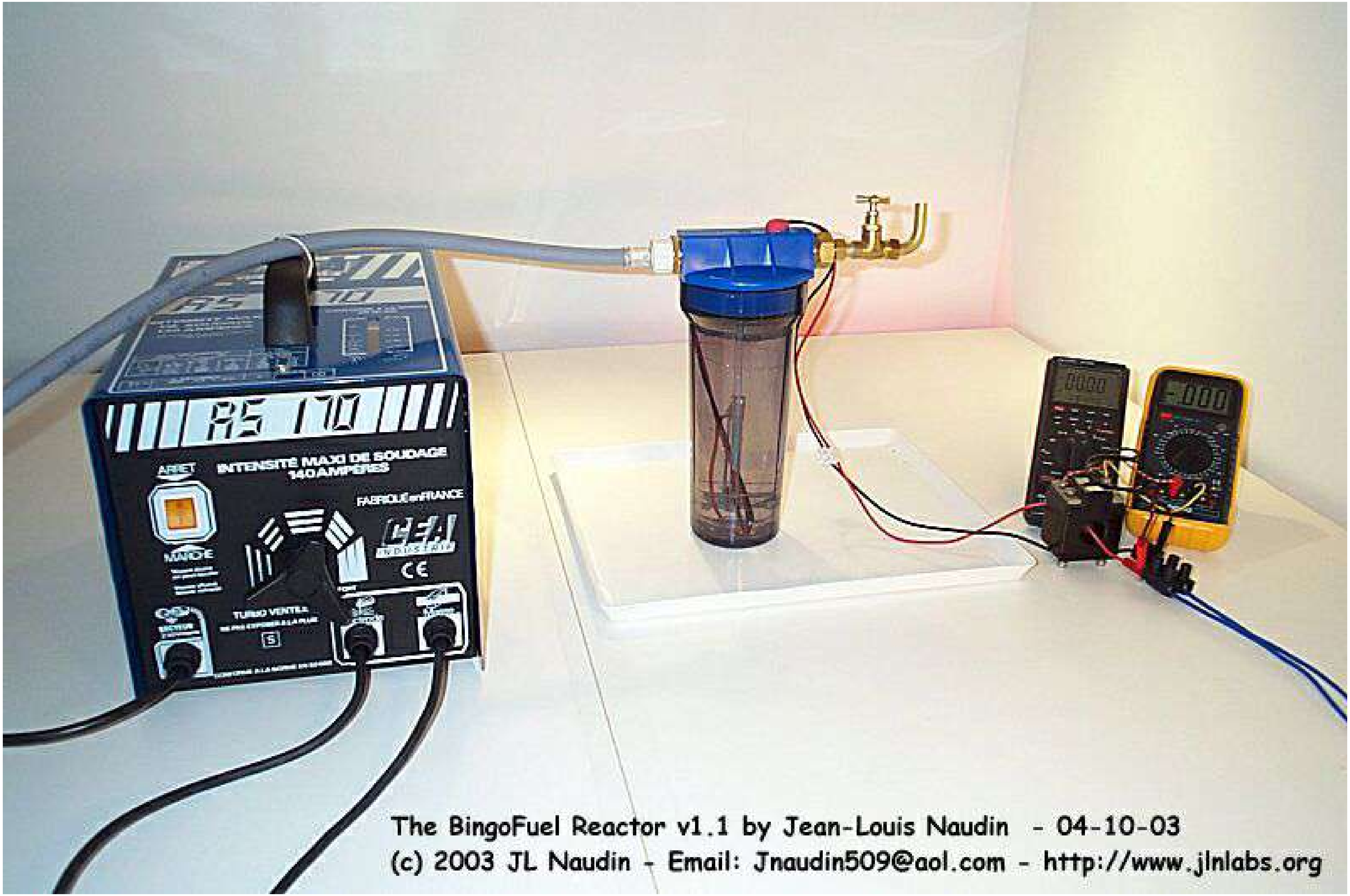

2 x 1 meter of thin
1.5 mm² multiple wires
sheathed with SILICON
7
2 brass connectors
22 mm length
6 mm inner diam
1
6
A 6x25 mm nut and bolt
2 carbons rods
5 mm diam. 57mm length
2
5
a folded plate (80 x 18 mm)
for the electrodes support
2 plastic tubes
2 mm diam
3
4
2 steel rods
1.5 mm diam. 100 mm length
BingoFuel Reactor v1.1 - The components for the plasma igniters
(c) 2003 by Jean-Louis Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org


Carbon rods
ZINC
CARBON
BATTERY
4.5V Zinc Carbon Battery


BingoFuel Reactor v1.1
by Jean-Louis Naudin
(c) 2003 JL Naudin
Email: Jnaudin509@aol.com
http://www.jlnlabs.org
PLASMA
IGNITERS
1
2
3
4
5
7
1


REACTION
CHAMBER
25mm
BingoFuel Reactor v1.1
by Jean-Louis Naudin
(c) 2003 JL Naudin
Email: Jnaudin509@aol.com
http://www.jlnlabs.org


BingoFuel Reactor v1.1 - (c) 2003 by Jean-Louis Naudin
Email: Jnaudin509@aol.com - http://www.jlnlabs.org


RS 170
ARRET
INTENSITE MAXI DE SOUDAGE
140 AMPERES
FABRIQUE en FRANCE
MARCHE
CE
TURBO VENTILE
The BingoFuel Reactor v1.1 by Jean-Louis Naudin - 04-10-03
(c) 2003 JL Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org


OUTPUT = 180 L/h
of synthetic gas
OUTPUT = 900 L/h of fuel mixture
V=30.8V AC   I = 81.6 A
The BingoFuel Reactor v1.1 by Jean-Louis Naudin - 04-10-03
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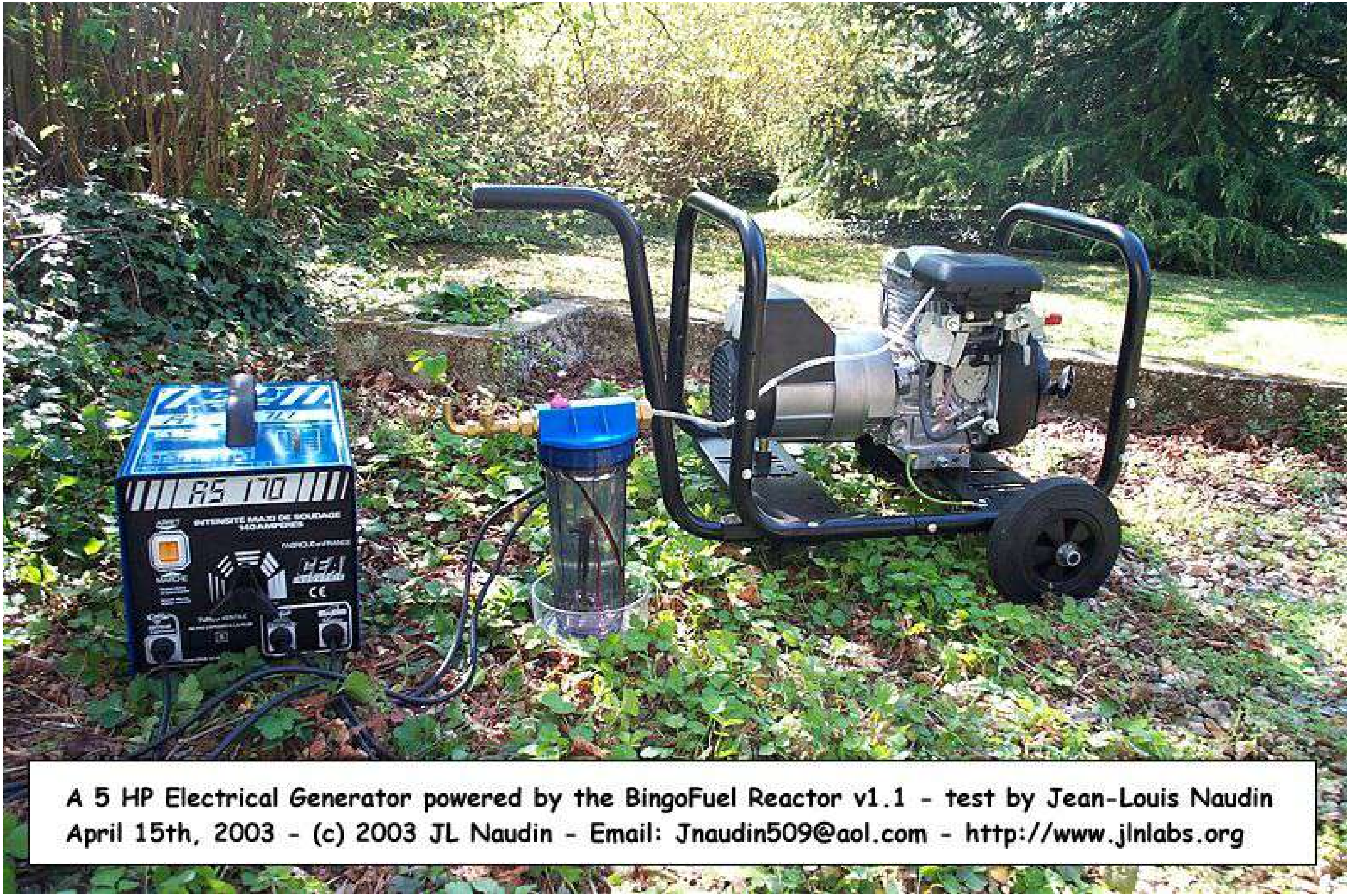
GROUPES ÉLECTROGÈNES MONOPHASÉS

50 hz			Moteur							Alternateur					Options				
Type	Puissance max 230V		Marque	Type	Sécurité huile	Démarrage électrique	HP 3600 tr/mn	h Autonomie	L Réservoir	230V Disjoncteur	Niveau sonore CEE Lwa	dB(A) @ 7 m	Dimensions L x l x h cm	Kg Poids	Kit brouette	Disjoncteur	Quick'lock	Com. à distance	Coffret dém. auto
	kW ISO 8528	kVA Comp.																	
RANGER™ 2500	2,1	2,6	Honda OHC	GC 160	•	x	5	2,2	2	•	**98**	75	58x46x44	30	x	x	x	x	x

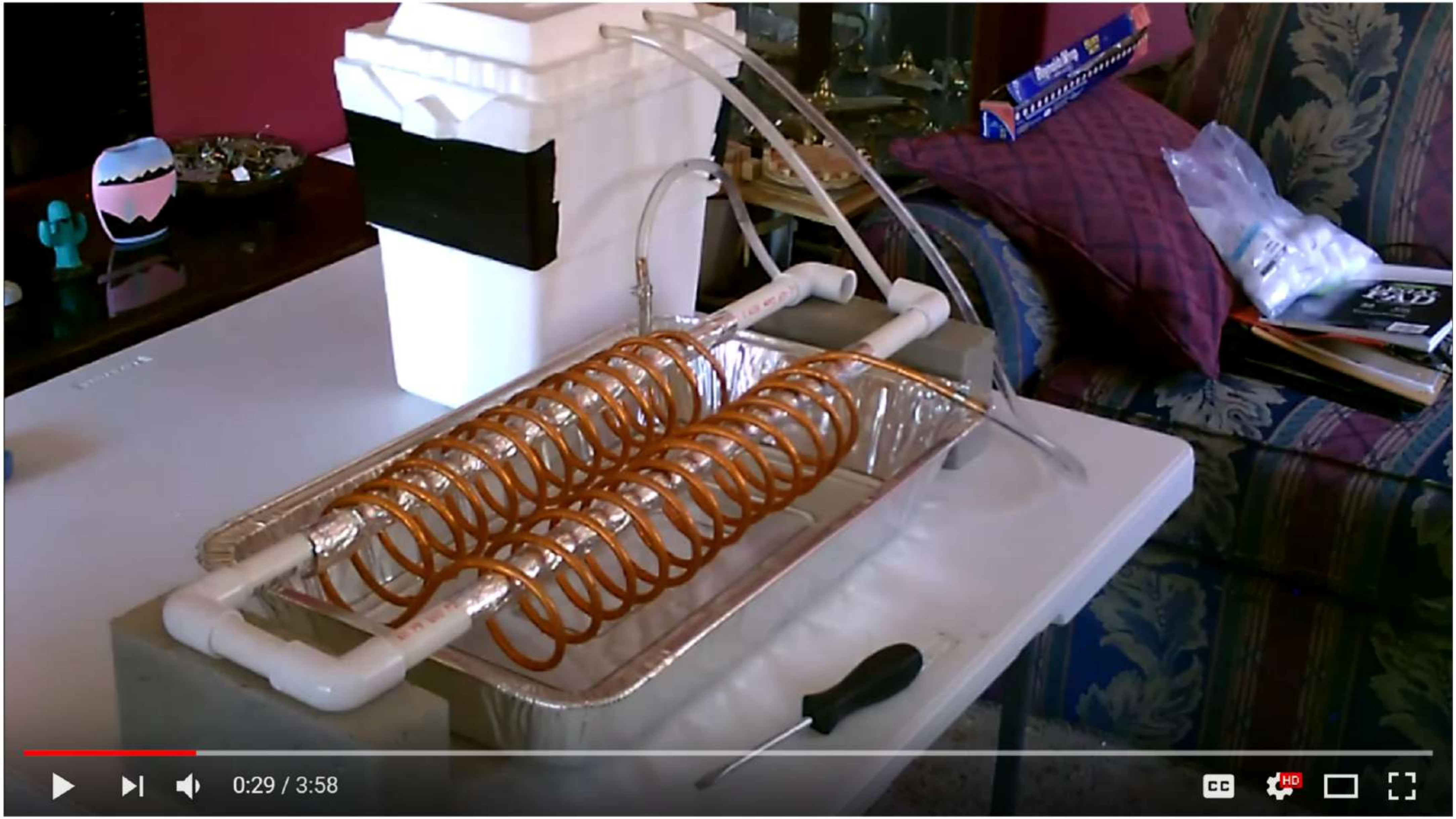


A 5 HP Electrical Generator powered by the BingoFuel Reactor v1.1 - test by Jean-Louis Naudin
April 15th, 2003 - (c) 2003 JL Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org

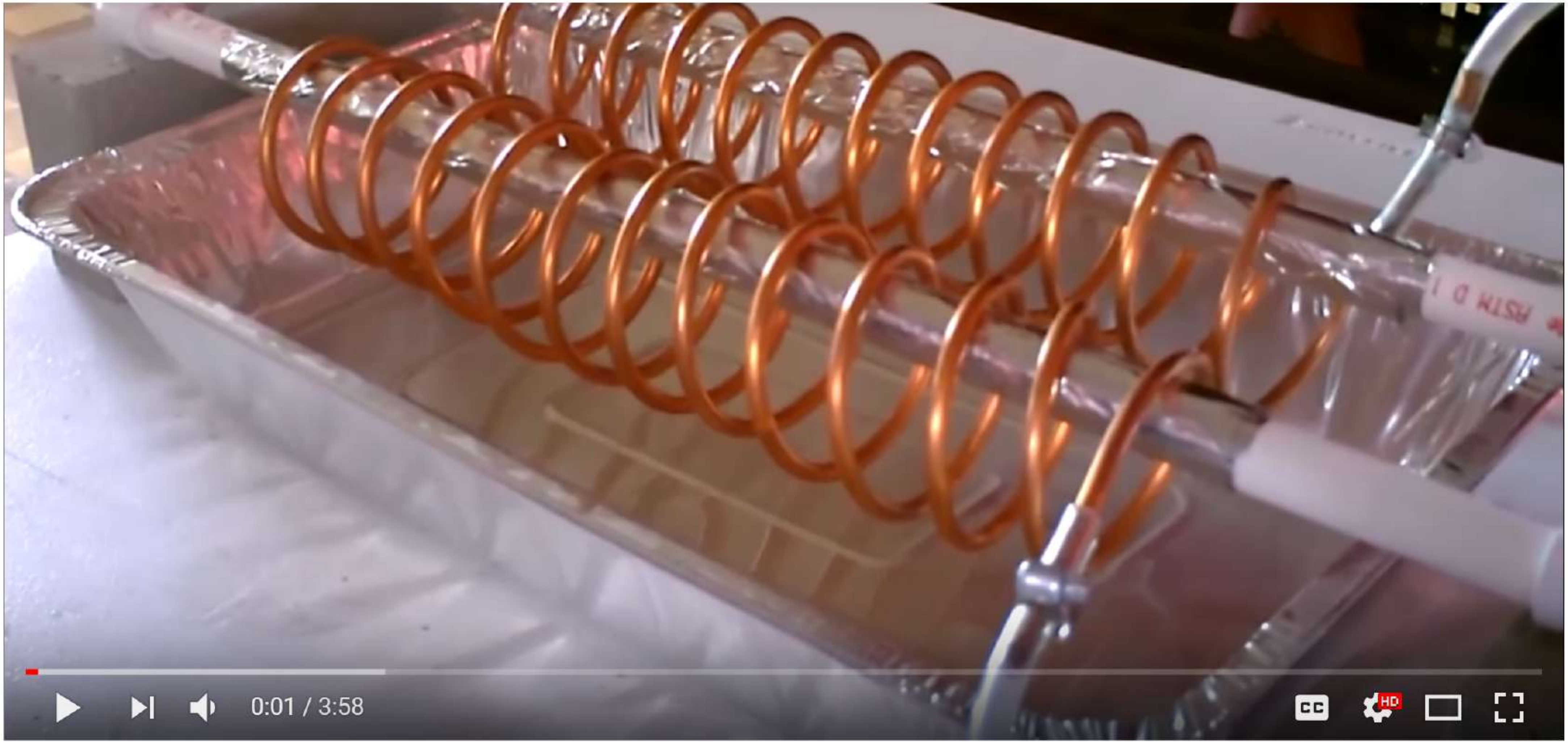
A 5 HP Electrical Generator powered by the BingoFuel Reactor v1.1 - test by Jean-Louis Naudin
April 15th, 2003 - (c) 2003 JL Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org

A 5 HP Electrical Generator powered by the BingoFuel Reactor v1.1 - test by Jean-Louis Naudin
April 15th, 2003 - (c) 2003 JL Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org

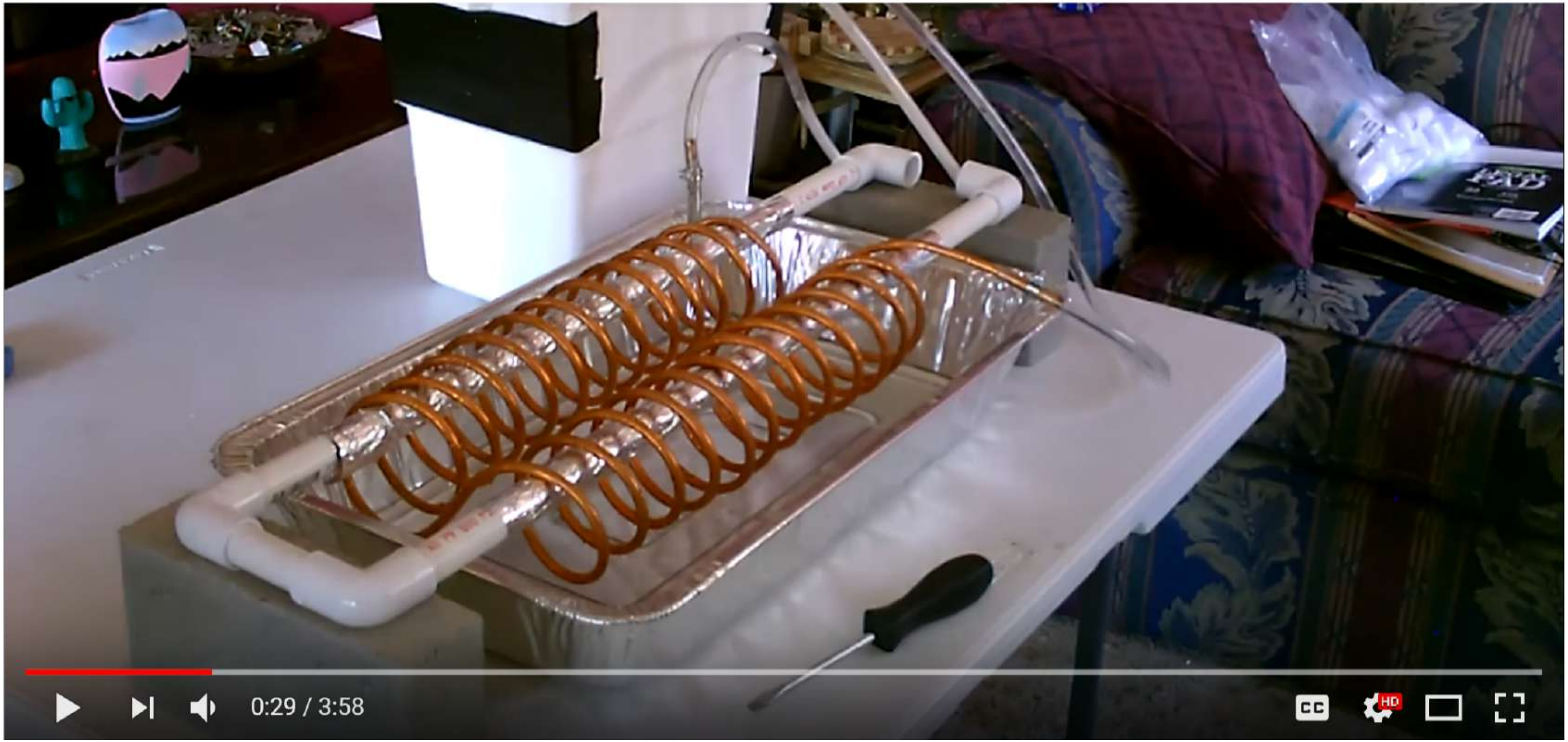
A 5 HP Electrical Generator powered by the BingoFuel Reactor v1.1 - test by Jean-Louis Naudin
April 15th, 2003 - (c) 2003 JL Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org



DIY Atmospheric Water Generator! - Produces/Extracts Distilled Water from the air! - DIY distiller

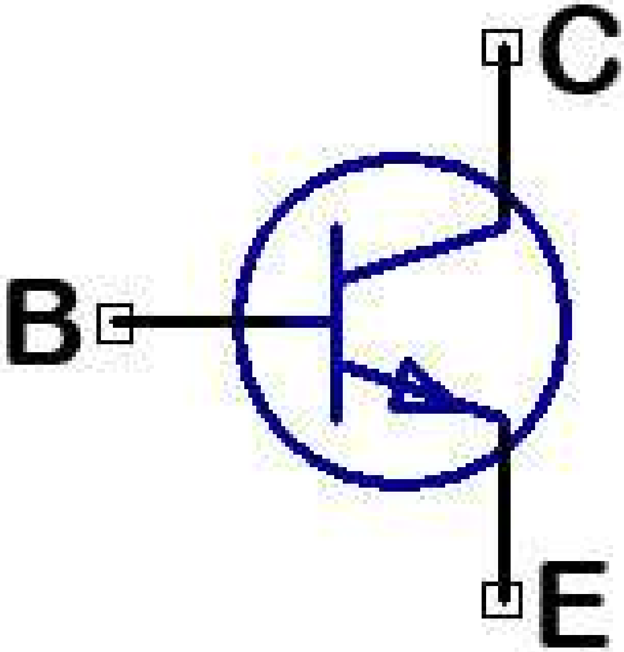

0:01 / 3:58
HD


0:23 / 3:58
CC
HD

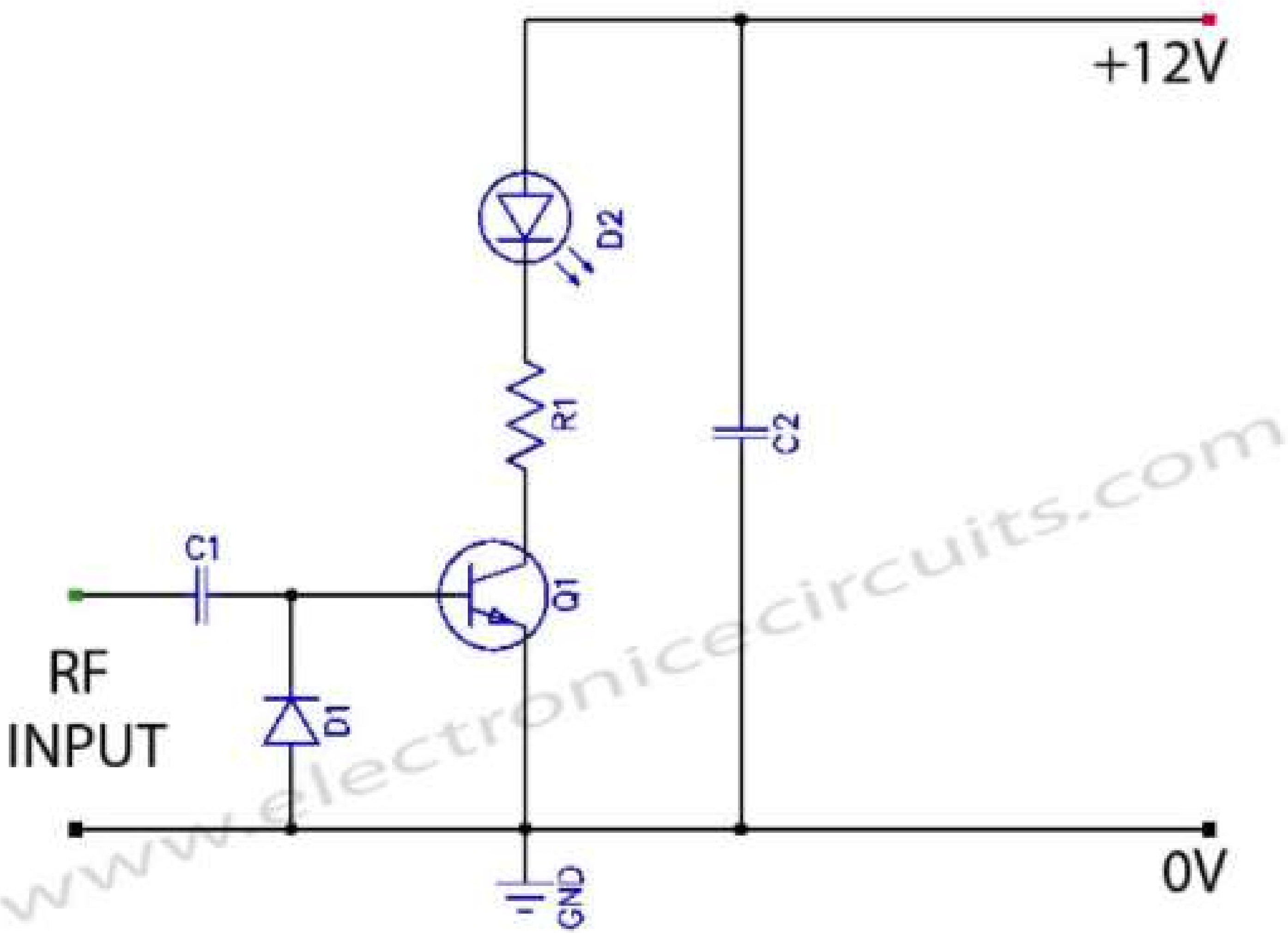

0:29 / 3:58
HD

previous next image 2 of 2 Transmitter RF Output LED Indicator Circuit close

2N3904
NPN General Purpose Amplifier



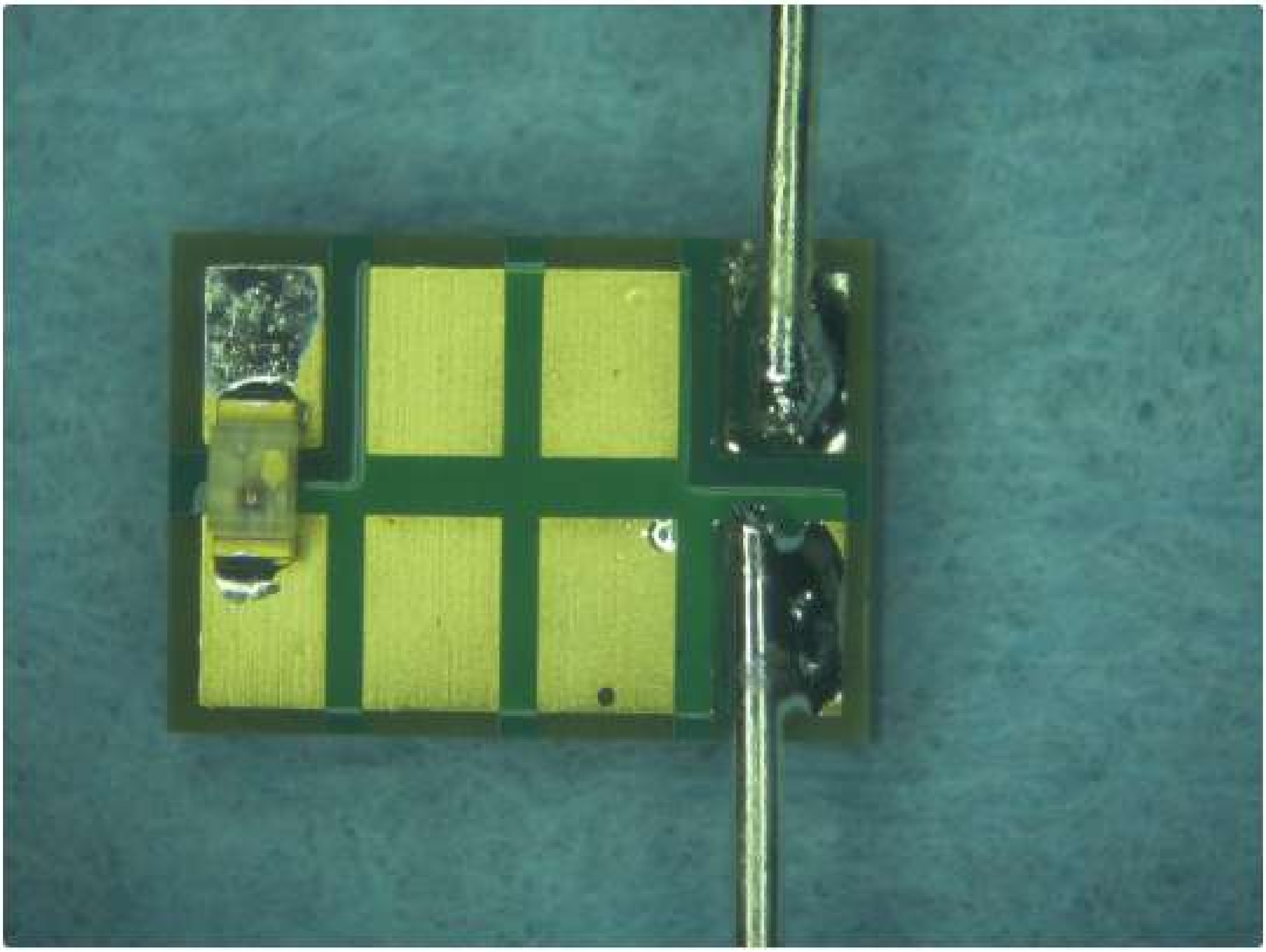
E = EMITTER
C = COLLECTOR
B = BASE



PARTS LIST	
R1	560Ω
C1	330pF
C2	0.1µF
D1	1N34 or 1N60 or ECG-109 or NET-109
D2	LED
Q1	2N3904

previous next image 1 of 2 Radio frequency LED Output Indicator Circuit close

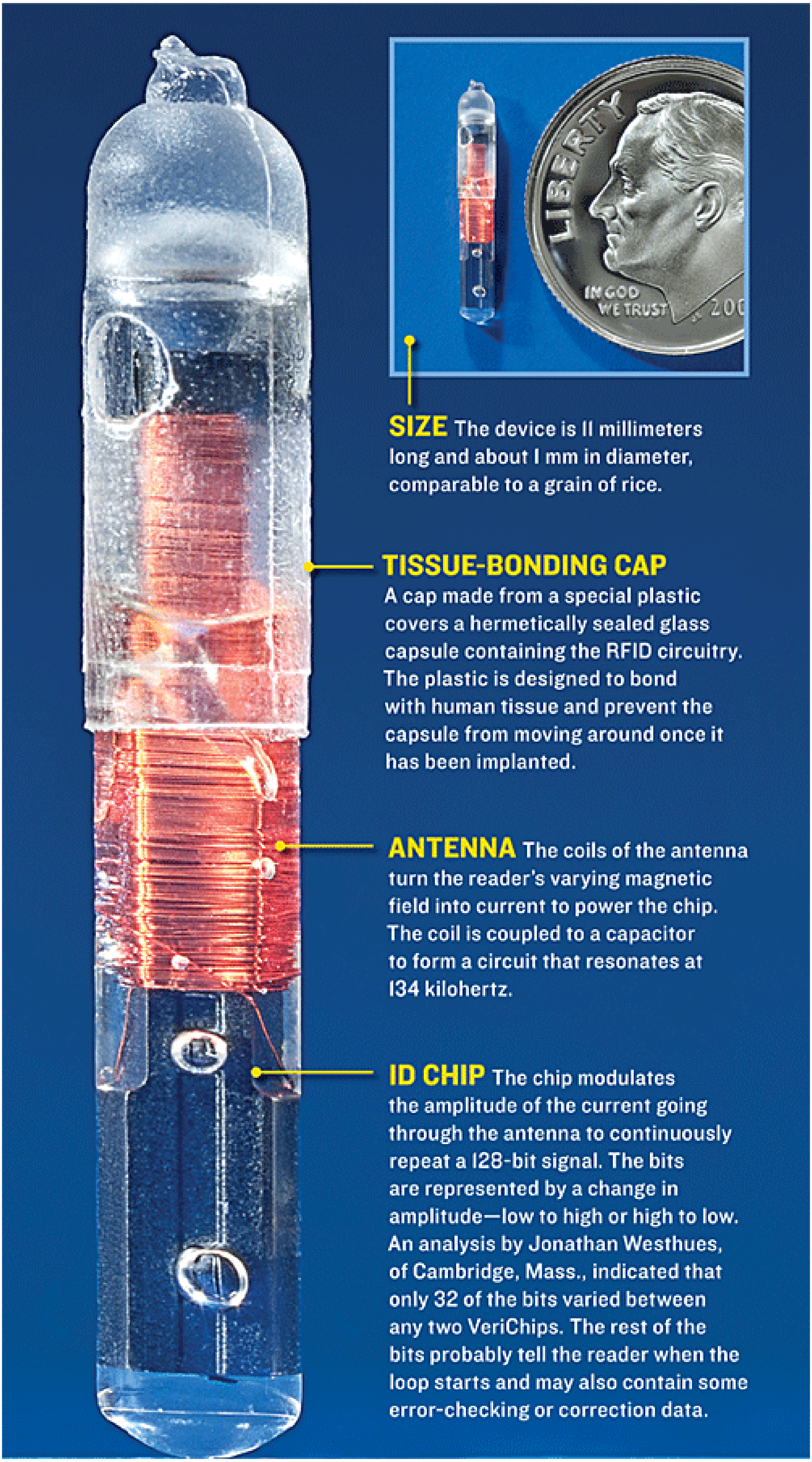
Step 1: Assembly Instructions



Cut the resistor wires off next to the resistor. These are just the right size at 1 1/8" long for a 2.5GHz dipole. Throw away the resistor and keep the wires.

Put solder paste on the module at pins 1 & 8 and at pins 4 and 5.Place the wires on pins 4 and 5 and solder carefully using tweezers to hold the wires (it will burn you otherwise). Solder at the lowest soldering temperature possible to avoid damaging the module. If the iron is too hot then you may damage the internal connections inside the module. Use a minimum of time for soldering (<10secs). The wires work as a dipole antenna to collect the 2.5GHz energy into the RF (Radio Frequency) Input of the module.

Place the LED with the anode (positive side) onto pin 1 and the cathode (negative side) on pin 8 and solder carefully. For those not familiar with LEDs, the triangle symbol of the diode should point to the ground pin of the module (pin 8). Your final microwave harvester should look like figure 2


LIBERTY
IN GOD WE TRUST
SIZE The device is 11 millimeters long and about 1 mm in diameter, comparable to a grain of rice.
TISSUE-BONDING CAP A cap made from a special plastic covers a hermetically sealed glass capsule containing the RFID circuitry. The plastic is designed to bond with human tissue and prevent the capsule from moving around once it has been implanted.
ANTENNA The coils of the antenna turn the reader's varying magnetic field into current to power the chip. The coil is coupled to a capacitor to form a circuit that resonates at 134 kilohertz.
ID CHIP The chip modulates the amplitude of the current going through the antenna to continuously repeat a 128-bit signal. The bits are represented by a change in amplitude—low to high or high to low. An analysis by Jonathan Westhues, of Cambridge, Mass., indicated that only 32 of the bits varied between any two VeriChips. The rest of the bits probably tell the reader when the loop starts and may also contain some error-checking or correction data.

Materials:

1. Fluorescent Lamp Protector Sleeve – used to make the two Leyden jars.
2. Staircase Balusters – these will be the supports for the rotating disks.
3. 1/8" Bronze Brazing Rod – will be used to fabricate all of the conductors. If you can't find this at your local hardware store look for a welding supply shop, they are sold by the pound and are incredibly useful for many things even if you don't own an oxyacetylene torch.
4. Fiberglass Driveway Marker Rod – Make sure it's round and 5/16" in diameter; these will be the shafts and insulated supports.
5. 3/8" OD Thin Wall Brass Tubing – one 3' section.
6. Knick-Knack Shelf Kit – approximately 24" by 6". You can use any ¾" board you desire, the shelf included has a nice rail that will add to the overall look of the project.
7. Inline Skate Replacement Wheels – Quantity 2.
8. Lamp Parts – You will need a selection of lamp parts which may vary depending on what is available at your particular store. Pictured here are pull chains, finials, and ball nuts used to make parts of the charge collector combs and discharge electrodes. Also pictured are cabinet knobs which were not used in this project but would make good alternatives. See the charge collector construction step for details.
9. 1" Copper Pipe Hangers – These you'll find in the plumbing section, they are copper plated steel.
10. Solder wick (not pictured) – for the neutralizing brushes, you might have to visit Radio Shack for this.
11. Rubber feet – Quantity 6.
12. Clothes Line Pulleys – must be plastic.
13. 3/16" Acrylic Glazing – enough to cut (2) 14" circles from. Polycarbonate will work too and is easier to work with but costs more than twice as much.
14. Aluminum tape (not pictured) – found with the duct tape and HVAC supplies, get the kind with the peel off paper backing.
15. Rubber O-ring belts (not pictured) – available from McMaster-Carr, part number: 94115K259 about $15 for a package of eight.

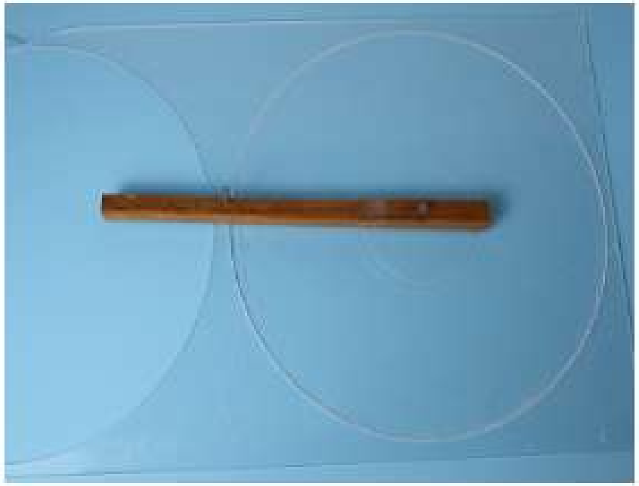
The total cost of purchasing the materials new is about $100. However, these are all relatively common items

Disks and Drive Components:

wimshurst-circle-cutter-inset.jpg

Make the cutting tool:

1. To cut the two 14" acrylic circles we will first need to make a tool. Cut a 12" length of wood ¾" square. Pine will work but hardwood is preferable.
2. Drill a pilot hole near one end and press or drive a #6 penny nail through the stick so the point sticks out about ¼".
3. Drill a second hole exactly 7" from the first and insert another #6 penny nail into it.
4. Use a fine metalworking file to shape the point of the second nail as shown. You want to make a chisel point with a slight undercut on the leading face.



wimshurst-circle-cutter.jpg

Cut the acrylic disks:

1. Lay out your circles with a compass to be sure they will both fit on your sheet of acrylic.
2. Drill a 1/8" hole in the center of your circle. Be gentle when drilling acrylic, it cracks easily. Polycarbonate is quite a bit tougher.
3. Working on a carpeted floor, insert the unmodified nail in the center and begin scoring your circle. Cut about a quarter of the way with each stroke and work your way around the circumference.
4. If the cutter sticks, lift it out and move to a different spot.
5. When you think you've gone about halfway through, flip the acrylic sheet over and cut from the other side. You may end up flipping the sheet several times before the circle pops free.
6. Clean up the edge of the circle with some 400 grit sand paper and set them aside.

Cut belt grooves in the skate wheels:

wimshurst-skate-wheel-groove.jpg

1. Gently clamp or strap your drill to a workbench as pictured.
2. Assemble a mandrel from a 5/16" bolt and some large (fender) washers, when assembled the entire wheel must spin, not just the bearings.
3. Chuck the assembly into the drill. The wheel should turn toward you and the speed should be fairly fast.
4. With a crosscut bastard file make a ¼" wide flat on the wheel and then switch to a rat-tail file to cut the grove. Apply light and even pressure to the file.

Attach the skate wheels to the disks:

wimshurst-skate-wheel-mount.jpg

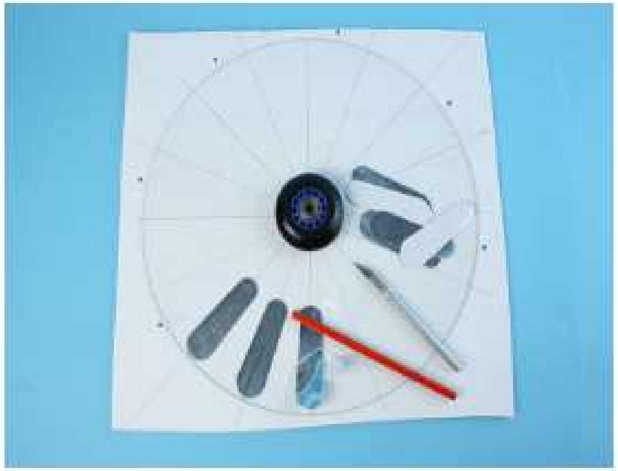
1. Use a step drill bit like the one pictured to increase the size of the hole in the acrylic disk to 5/16". Remember, be gentle and go slowly because acrylic is easily cracked.
2. Remove the washers from the wheel and use the 5/16" bolt to center the wheel against the disk.
3. Drill (4) 1/8" holes through the disk, don't drill into the wheel.
4. Switch to a 3/32" bit and drill partway into the wheel in 4 places.
5. Finish the holes with a counter sink.
6. Now remove the 5/16" bolt and drill the center hole out to ½" or 5/8" using a step drill, you want the edges of the hole completely clear of the rotating parts of the wheel bearing.
7. Install (4) small counter sunken screws, tighten these so they *just* touch the disk, the disk must remain as flat as possible.

Cut the sectors:

wimshurst-sector-cutting.jpg

1. Decide how many sectors you are willing to cut. I'm rather lazy and opted for fewer sectors, 16 per disk. If you decide to make 24 or even 32 sectors you'll have to make them smaller but you will be rewarded with longer sparks.
2. The sectors are cut from aluminum tape. Make a template from a piece of plastic milk jug and trace each sector. Cut them individually, don't be tempted to stack multiple layers of tape; the cut will end up ragged and will bleed charge away into the air.
3. Tip: I found it easiest to use an X-acto knife and straight edge to cut the long sides and then switch to scissors for the curved ends.

Attach the sectors:



wimshurst-affix-sectors.jpg

1. Lay out a circle on a piece of foam board.
2. Draw radial lines to correspond with the number of sectors you've chosen
3. Place your template centered at 6 o'clock and trace it. The large end should face out and be about ¼" from the edge of the disk.
4. Set the disk on the foam board and insert push pins around the circumference so it turns in place.
5. Carefully peel and stick the sector in place. It's a good idea to make some extra sectors and practice this operation first. A length of fiberglass rod makes an excellent burnishing tool.
6. Turn the disk one line to the left and repeat. Always index the line to the first sector you stuck down, this will help make the spacing as even as possible.

Prepare the drive pulleys:

wimshurst-drill-pulley.jpg

1. Remove the pulleys from their cages by drilling out the rivets.
2. Use the step drill to enlarge the holes to 5/16". Drill from one side, then the other to enlarge the full depth of the hole in the pulley. Note: The use of the step drill is especially important here because of its self-centering characteristics.
3. Cut (2) 7" lengths of fiberglass rod, slightly bevel the ends with a file to prevent chip out. Be careful of the glass fibers, they can be really irritating!
4. Drill the splines out of the window crack bore with a regular 5/16" drill bit. Clamp the crank in a vise and go slowly; making sure the bit is in line with the axis.

Cut and drill the supports:

wimshurst-drill-upright.jpg

1. Cut 12" off of each of the staircase balusters. Choose the end that you think looks best. On my prototype machine I used both ends of the same baluster and thus had two different style supports.

2. Clamp the two supports together as shown and drill 5/16" holes 3 ¼" inches from the bottom (square end) and 11" inches from the bottom.

3. The lower hole will need to be reamed out so that the fiberglass axle turns freely in it. Use a slightly larger drill or rat-tail file for that. You can also drill it larger and insert plastic bushings for smoother operation. Alternatively you can bore it out with a step drill to match the diameter of a pair of skate bearings – this works exceptionally smoothly and is what I ultimately did to my own machine.

wimshurst-screw-uprights.jpg

Attach the supports to the base:

1. Draw a line parallel to the back of the base 2 ½" in, this is not quite to the center. Draw a second line perpendicular to the first on the center of the base.
2. Cut a 1 ¼" gap in the rail on the center line, as pictured.
3. Drill (2) 3/8" inch holes through the base on the center line 5/8" from the front and back edges.
4. Use 2" drywall screws and large washers to attach the supports to the base. The combination of the large washer and 3/8" hole will allow you to adjust and align the position of the rotating disk precisely.
5. Drill (2) 5/16" holes on the line parallel to the long dimension and 7 5/8" from the centerline on each side – these holes need to be straight up and down so drill carefully, use a small carpenter's square to line up the drill.

Charge Combs and Neutralizing Bars:

wimshurst-solder-balls.jpg

Prepare the charge collectors:

1. Use a hacksaw to cut off the nail ends of the pipe hanger. The overall length should be 5".

2. You'll find small brass ball cap nuts in the electrical section at the hardware store; they are most commonly used to secure the top of brass outdoor lighting fixtures.

3. Place the small brass ball nuts on the ends of the hanger, heat them with a small torch and apply just enough solder to fill the joint. Note: Be careful not to overheat the pipe hanger, it is copper plated steel and it you heat it too much the solder may not adhere.

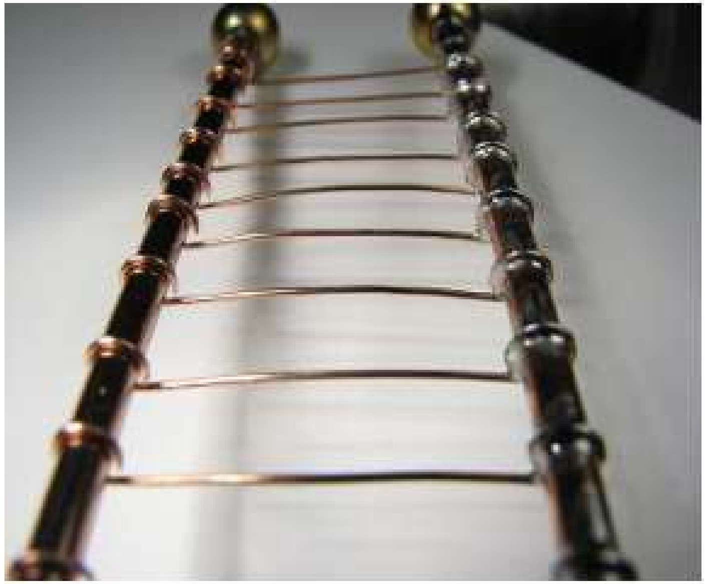
The torch pictured is a Lenk LSP-180 butane torch/soldering iron and it is a marvelous tool.

Attach the collector comb prongs:

wimshurst-prongs-progression2.jpg

1. You need to make 8–12 pointy prongs down each side of the collector comb. I stripped the conductors out of a 3' section of telephone wire to make them.
2. Wrap the copper wire around the pipe hanger as shown in the left-most example. I made 11 turns.
3. Cut away the center portion of the wire on one side only and bend the cut ends around the pipe hangers.
4. Spread the prongs out evenly along the portion of the charge collector that will be opposite the sector.

Solder the prongs:



wimshurst-solder-prongs.jpg

1. Crimp the ends tightly around the pipe hanger.

2. Use a large soldering iron to solder each joint. Apply sufficient solder so that when you take the soldering iron away solder flows down to fill the gap at the end of each length of wire. We want to avoid any points other then the prongs themselves.

3. Once you've soldered all of the joints cut down the center of the wires but don't trim them to length until it's time to install the combs.

Charge collector mount:

wimshurst-collector-assembly.jpg

I made a couple of different collector mounts using various lamp parts and cabinet knobs. This was the simplest, but you may have to improvise if you can't find these particular lamp parts at your local hardware store.

Pictured here right to left:

- 3/8" OD thin wall brass tubing 6" long
- 3/8" threaded collar
- 3/8" lamp "nipple" 1" long
- Lamp washer nut (threaded)
- Rubber flat washer
- 3/8" brass washer
- 3/8" threaded lamp finial
- #8-32 screw

Prepare the collector mount:

1. Using the step drill, bore out one half of the threaded collar.
2. Screw the nipple halfway into the collar and insert the brass tubing into the opposite end and solder it in place.
3. Drill one hole straight down into the top of the finial and thread with a #6-32 tap. Use the drill size written on the tap.
4. Drill a 1/8" hole through the body of the finial as pictured, this is for the discharge electrode.
5. Cut a ½" length from the extra you trimmed off of the pipe hanger earlier and solder it to the brass washer, this will allow the assembly to clamp and hold the charge collector perpendicular to the support.
6. Test assemble the mount and then disassemble and set aside.

wimshurst-discharge-assembly.jpg

Prepare the discharge electrodes:

1. Cut two 15" lengths of brazing rod and bend them as shown. I bent mine by hand but you could bend a 30" length around a five gallon pail and then cut it in the center for a neater appearance.

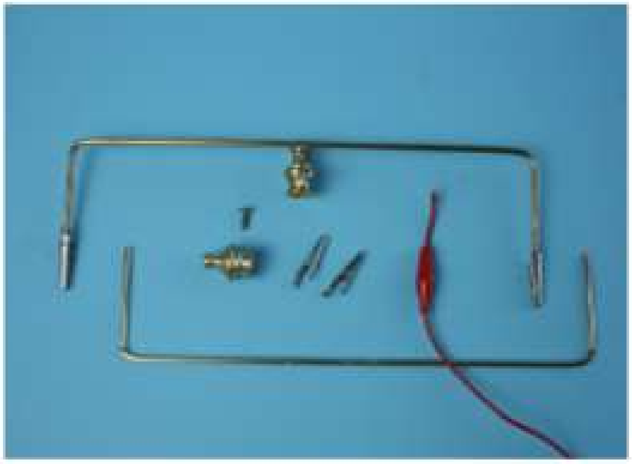
2. The balls for the discharge electrodes come from some more lamp finials, cut them off just below the ball with a hacksaw. These balls are about ½" in diameter.

wimshurst-discharge-ball-cut.jpg

3. Solder the discharge balls to the electrodes; fill the hole with solder so it makes a smooth transition to the rod.

wimshurst-discharge-ball-solder-prep.jpg

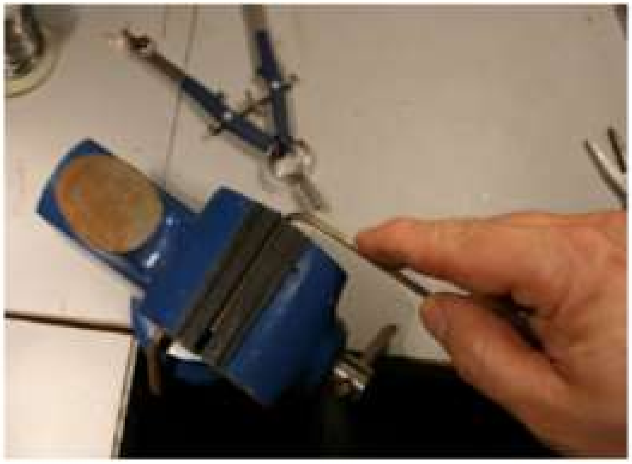
Note: do not solder the small ball nuts in place!



wimshurst-neutralizer-bar-parts.jpg

Fabricate the neutralizing brushes:

The neutralizing brushes are made with more brazing rod, alligator clips salvaged from a pair of clip-leads, and yet another type of lamp finial.



wimshurst-neutralizer-bend.jpg

Bend the brush support:

1. Cut a length of brazing rod 14" long and mark it 2" from either end.

2. Make (2) 90 degree bends in the rod at the 2" marks.

Solder the brush support to the brush boss:

wimshurst-neutralizer-hub.jpg

1. Drill a hole for a set screw in the base of the finial and tap with the #6-32 tap.

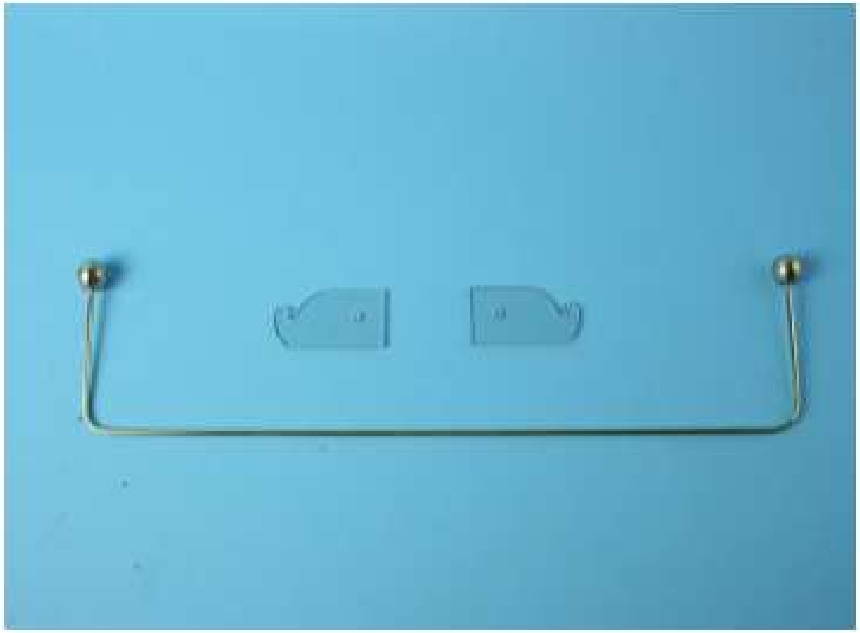
2. File a groove in the top of the lamp finials, these particular finals have a 3/8" threaded hole in the bottom and a small hole in the top. I think they are made for ceiling fixtures that have a center pull string.

3. Center the neutralizer bar on the finial and prop it so its parallel to the workbench top and solder it in place.

Attach the brush clips to the support:

wimshurst-neutralizer-clip.jpg

1. Crimp the alligator clips on to the ends of the neutralizer bar and solder.



wimshurst-layden-shunt.jpg

Fabricate the Leyden jar shunt:

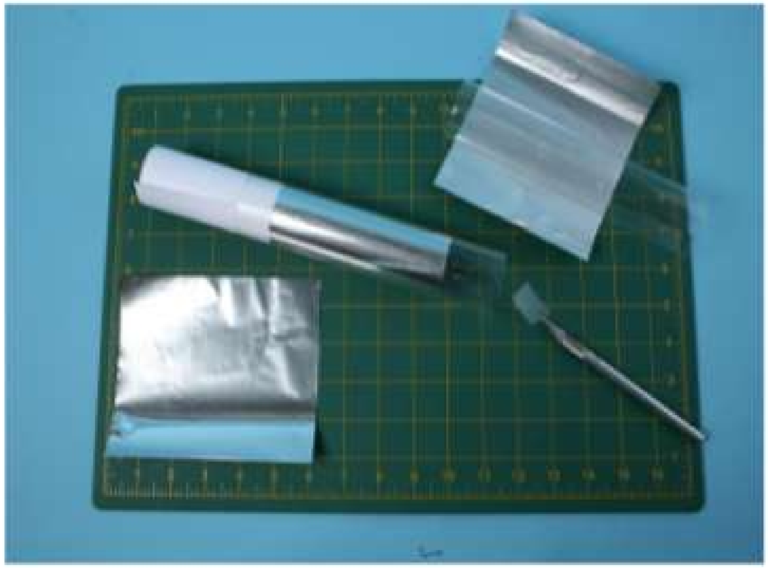
1. Cut a 22" length of brazing rod.
2. Make 90-degree bends, 3 ½" in from each end.
3. Solder two brass balls to the end. These are the large brass lamp chain pull balls, smaller finial balls or cabinet knobs would work here, too. If you use knobs be sure to remove any lacquer finish.

Cut the Leyden jar body:

wimshurst-layden-cut-tube.jpg

1. Using the miter box and fine tooth hacksaw, cut two 7 1/2" lengths from the fluorescent lamp protector sleeve.

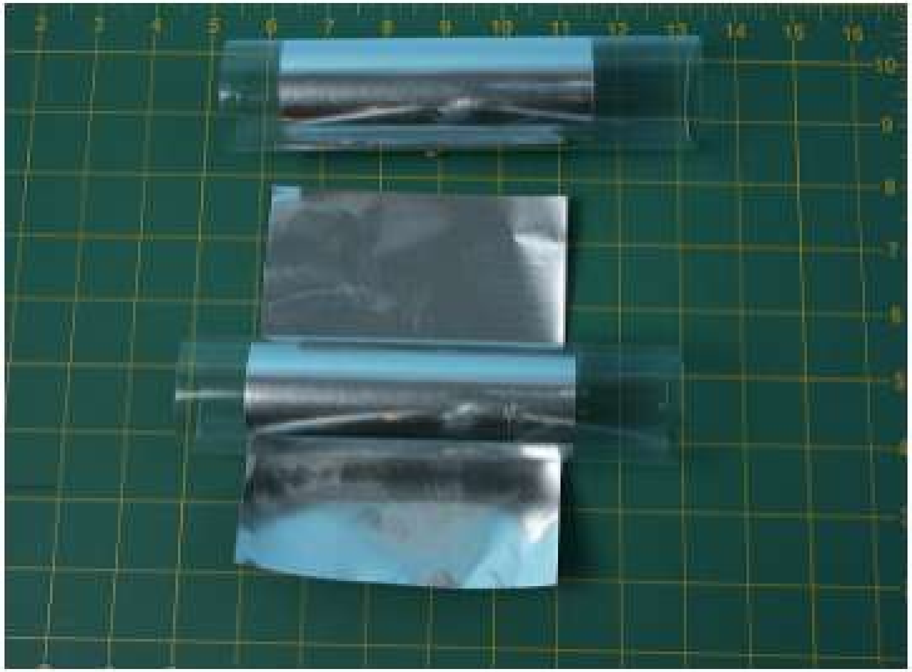
Cut and affix the inner plate:



wimshurst-layden-plate-inner.jpg

1. Cut (4) 5" by 6" sheets of heavy duty aluminum foil.
2. Form one sheet by wrapping it around the tube and then rolling it so it can be inserted. Roll along the 6" axis so the foil cylinder ends up being 5" high.
3. Insert the foil into the tube so that it is 1" from one end. Use a couple of rolled up sheets of paper to hold the foil firmly against the inside of the tube while you tape it in place. The tighter you can make it to the inside of the tube the better.

Affix the outer plate:



wimshurst-layden-plate-outer.jpg

1. Wrap another piece of aluminum foil around the outside and tape it in place. Again, the tighter the better, but don't wrinkle the foil.

wimshurst-layden-plate-bottom.jpg

Make the bases:

1. Snap the tube ends onto the opening that is 1" from the foil

2. Make the Leyden jar bases from a pair of plastic closet pole mounts. Drill out the center hole to 5/16".

Note: These are Stanley brand and I had to trim some reinforcing ribs off with an X-acto knife to make them slide into the tubes.

Mount the disks and drive line:

wimshurst-axle-collars.jpg

1. Slide the disk axle into a support and put on a 5/16" set screw collar, an O-ring belt, the two disks, the other belt, and another collar.

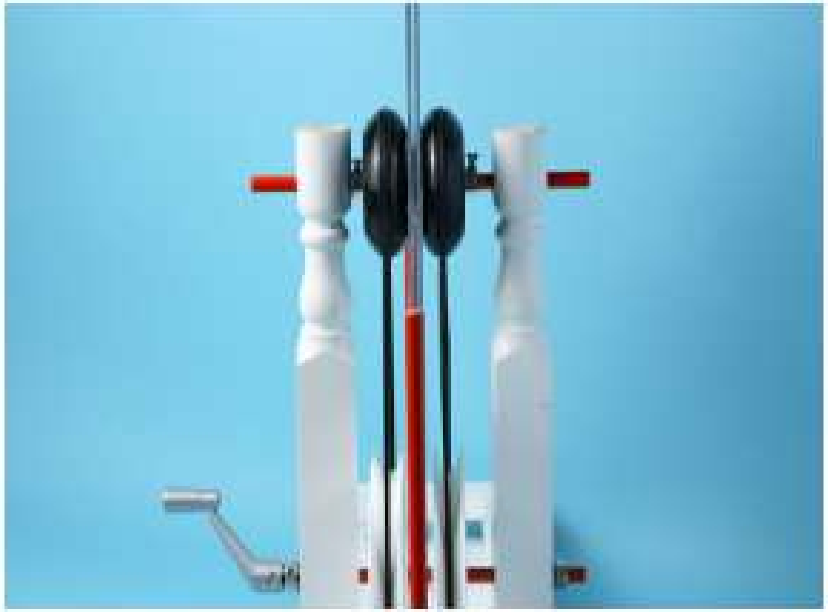
2. Attach the casement window crank to the drive shaft, insert the bushings in the supports if you are using them and slide the shaft through the pulleys. The pulleys should be a tight fit and you will have to twist the shaft back and forth to get it through. Don't forget about the belts hanging from the top shaft, one will need a twist so that the disks rotate in opposite directions. A collar goes on either end of the drive shaft.

3. Once both shafts are in place, stretch the belt around the pulleys. (In the picture, the belt with the twist is hidden behind the disk. What you are seeing is a reflection of the untwisted belt.)

Note: 5/16" set screw collars can be found at the hardware store but I made my own by drilling out a 5/16" nut and threading a #6-32 screw into the side.

Note: I found that my machine became difficult to turn once it was fully charged due to the electrostatic attraction of the disks. I cut a 2 ½" washer from a plastic milk jug and placed it on the shaft between the disks to remedy this problem.

Align the disk and collector supports:



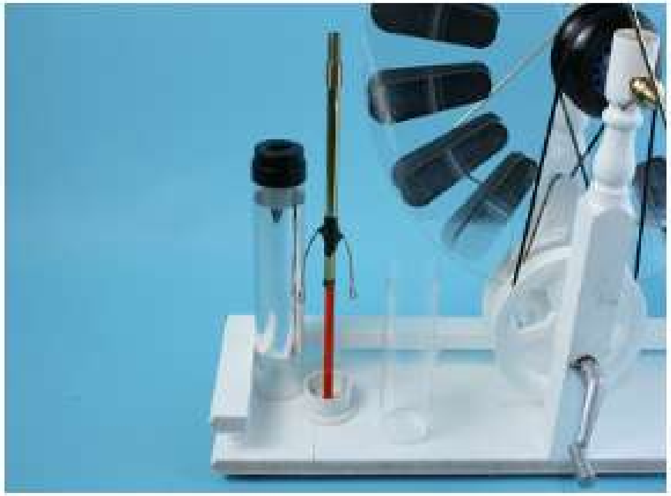
wimshurst-lineup-collectors.jpg

1. Cut two 11" lengths of fiberglass rod and press them into the holes made earlier in the base.

2. Loosen the screws that hold the two supports to the base and slide them around to adjust the disks so they line up with the charge collector supports.

3. Re-tighten the supports.

Install the Leyden jar base and inner plate contact:



wimshurst-layden-contact-inner.jpg

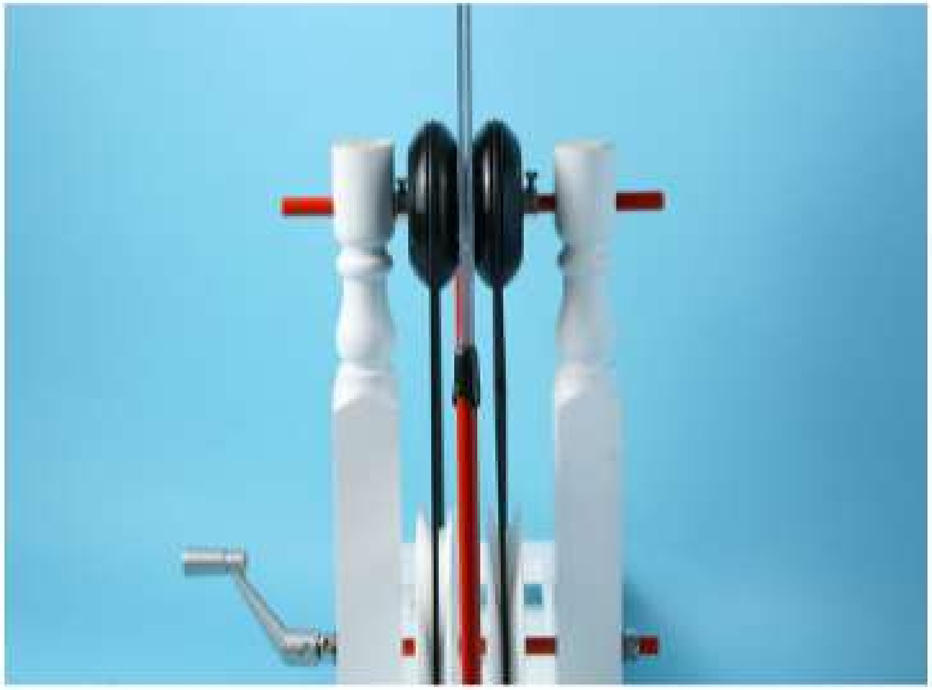
1. Slide the Leyden jar bases onto the fiberglass charge collector supports.

2. Slide the charge collector assembly over the fiberglass supports.

3. Using about 6" of 14 AWG solid copper wire, form the inner plate contact. Wrap it once around the brass tube and form two loops in the ends.

4. Using a scrap of the plastic tube as a guide, adjust the inner plate contacts so they apply even and gentle pressure. You want good contact with the foil but you don't want to rip the foil when you install the Leyden jars.

Epoxy the charge collector assembly in place:



wimshurst-collector-epoxy.jpg

1. Apply epoxy to the end of the rod and slide the brass charge collector assembly down onto the fiber glass support rod.

2. Set aside while the epoxy cures.

Install Leyden jar and assemble collector:

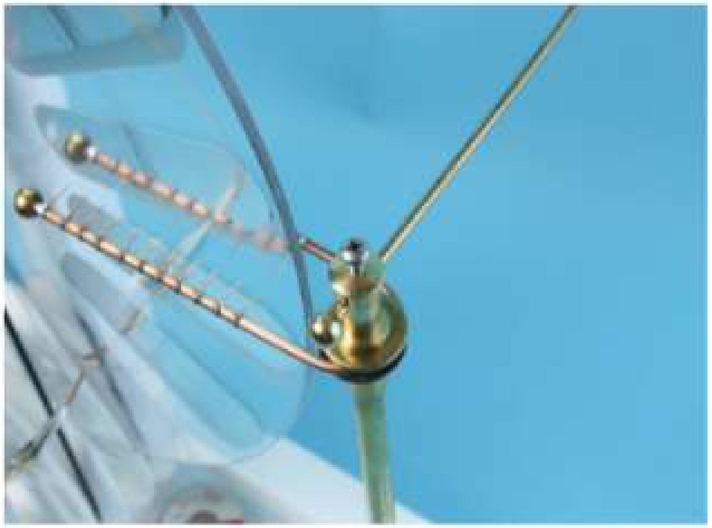
wimshurst-layden-complete.jpg

1. Slide the Leyden jar onto its base, being careful not to tear the foil as makes contact.

2. Line up the charge collector comb and trim the prongs. Test spin the disks to see if there is any wobble and trim the prongs to come as close as possible to the disks without touching.

3. Assemble the charge collectors.

Install discharge electrode:



wimshurst-collector-inplace-2.jpg

1. Insert the discharge electrodes into the lamp finial on the charge collector and tighten the screw to hold it in place.

2. The finial should be tight enough to hold the collector comb but allow the discharge electrode to move back and forth. If it's too tight, or not tight enough, the support rod can be twisted in the base to accommodate.

3. Wrap a small bit of tape around the end of the electrode and screw on one of the small ball nuts; this will prevent charge from bleeding off the sharp end.

Install neutralizing brushes:

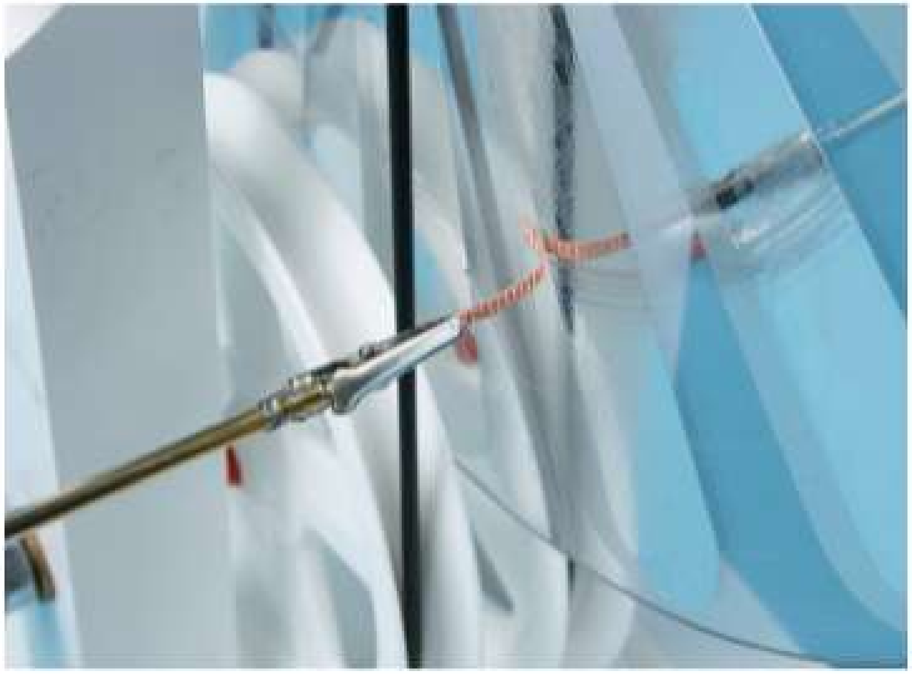
wimshurst-neutralizer.jpg

1. Slide the neutralizing bars onto the upper shaft and adjust them to be about 45 degrees from the collector combs.

2. Sectors should pass through a charge collector, encounter a neutralizing bar after about 1/6 of a rotation, and then encounter the other charge collector after a further 1/3 of a rotation.

3. Tighten the set screw to secure.

Position brushes:



wimshurst-neutralizer-brush.jpg

1. Clip (2) 1 ½" lengths of Solder Wick™ to the ends of the neutralizing rods so they make good contact with the disk.

Mount the Leyden jar shunt and add optional finials:

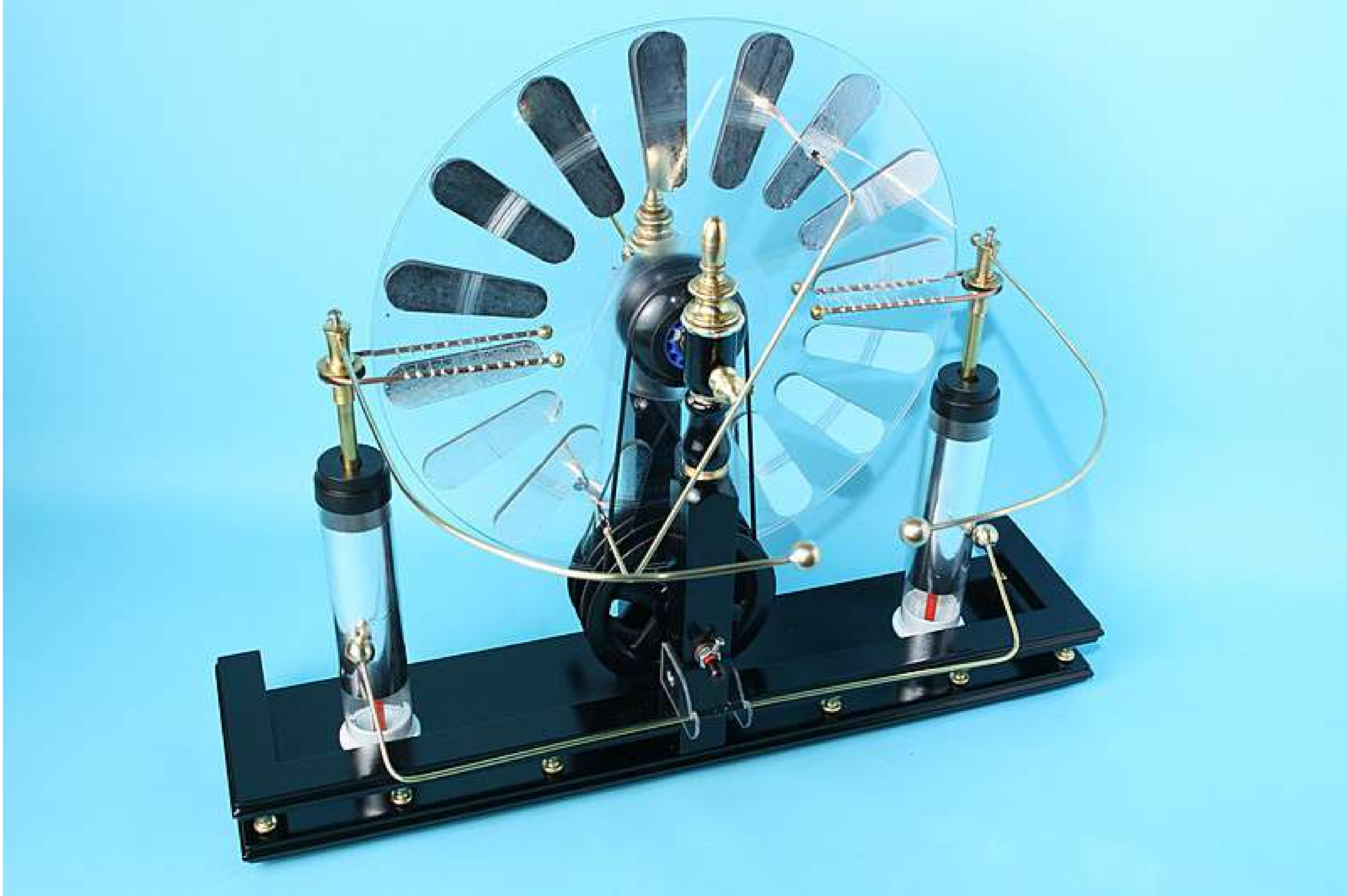
wimshurst-complete-front.jpg

1. Use small brass wood screws to attach the (2) acrylic brackets to the front disk support, leave them a little loose at first.

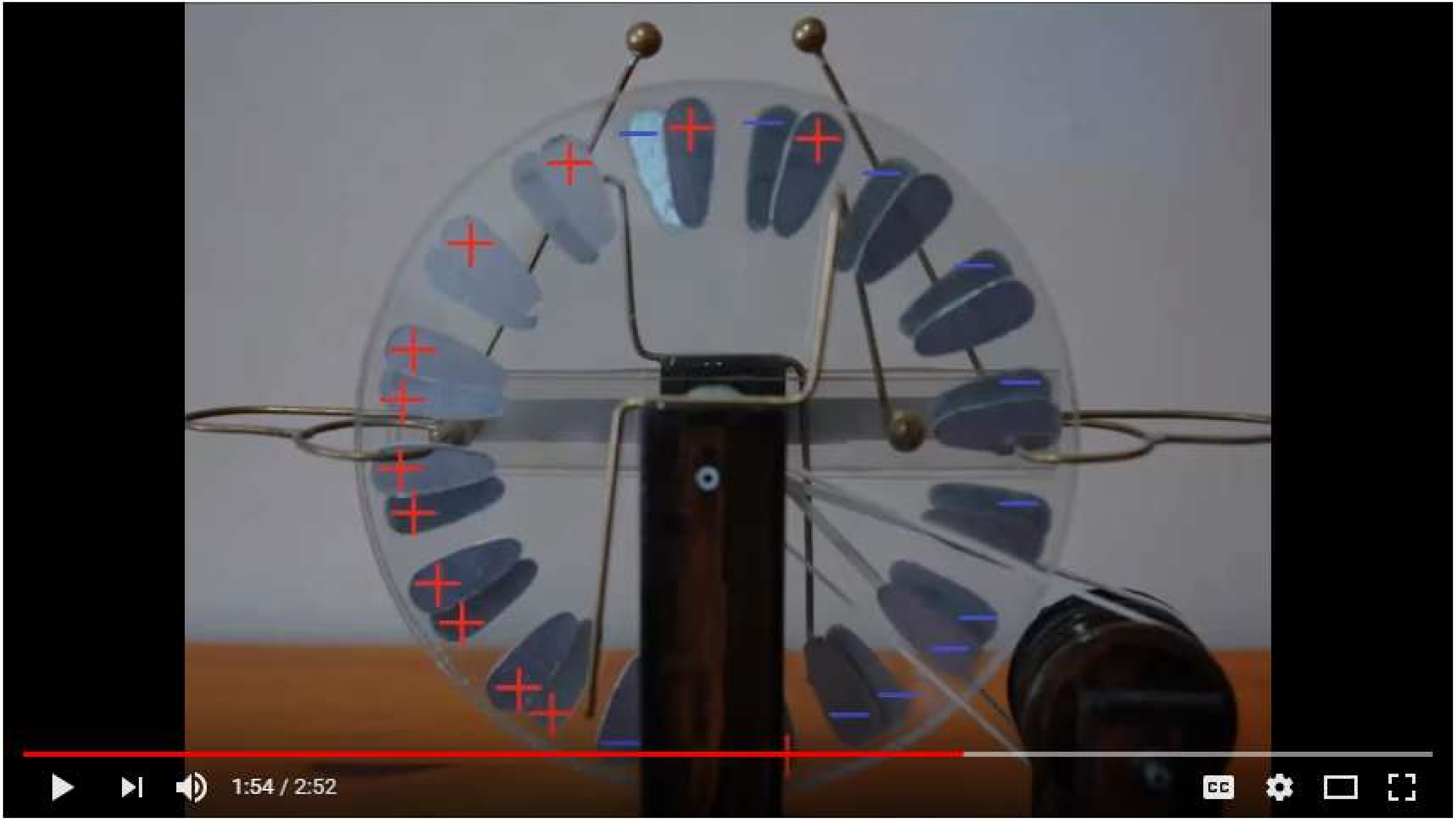
2. Place the Leyden jar shunt in the brackets and line them up so the balls on the shunt lean comfortable against the Leyden jars.

3. Tighten the brackets.

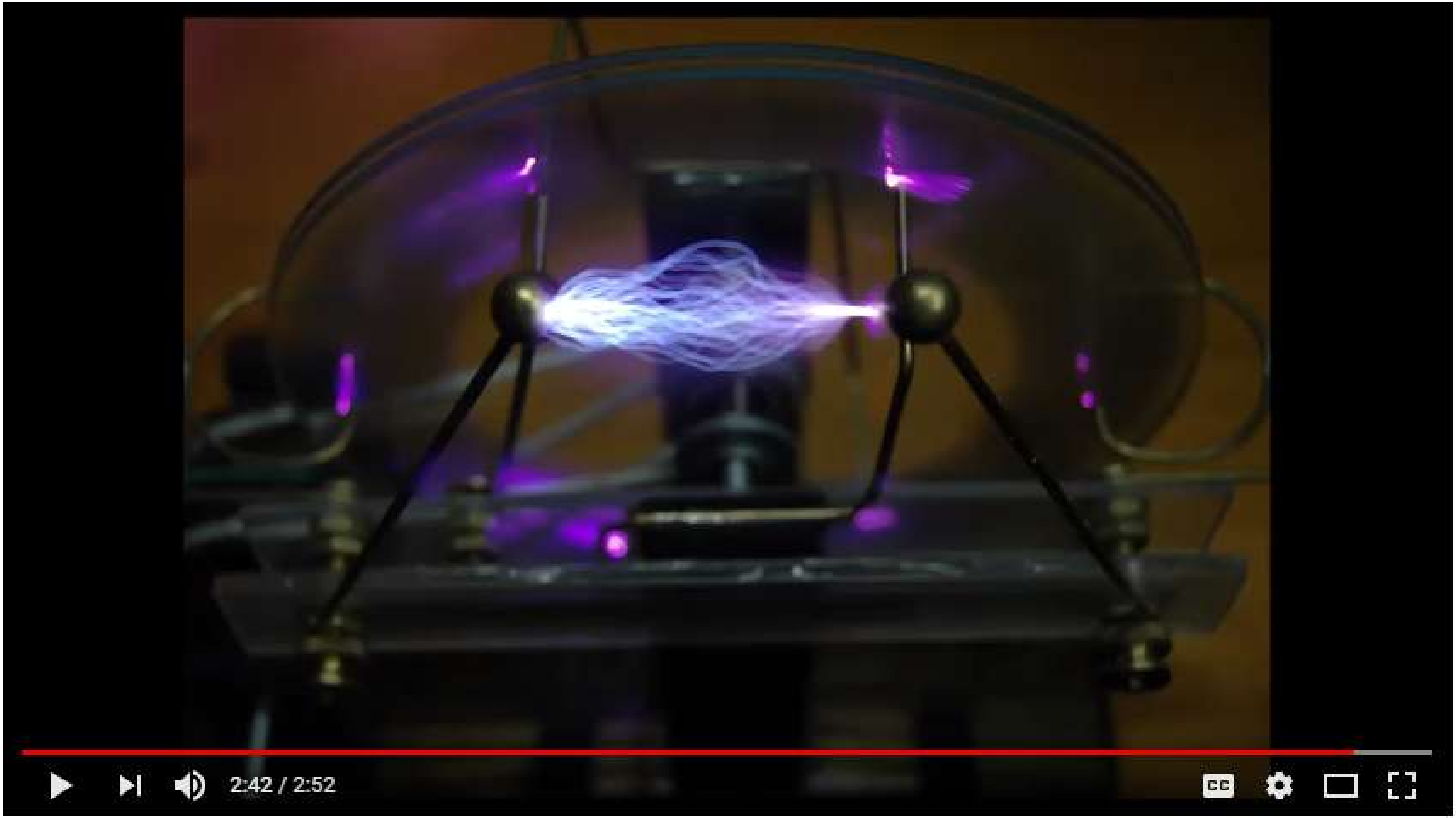
The two tops of the disk supports looked a little bare to me so I raided my junk box for more lamp parts and came up with these decorative finials. The wealth of finial and cabinet knobs at the typical home center means that there are infinite



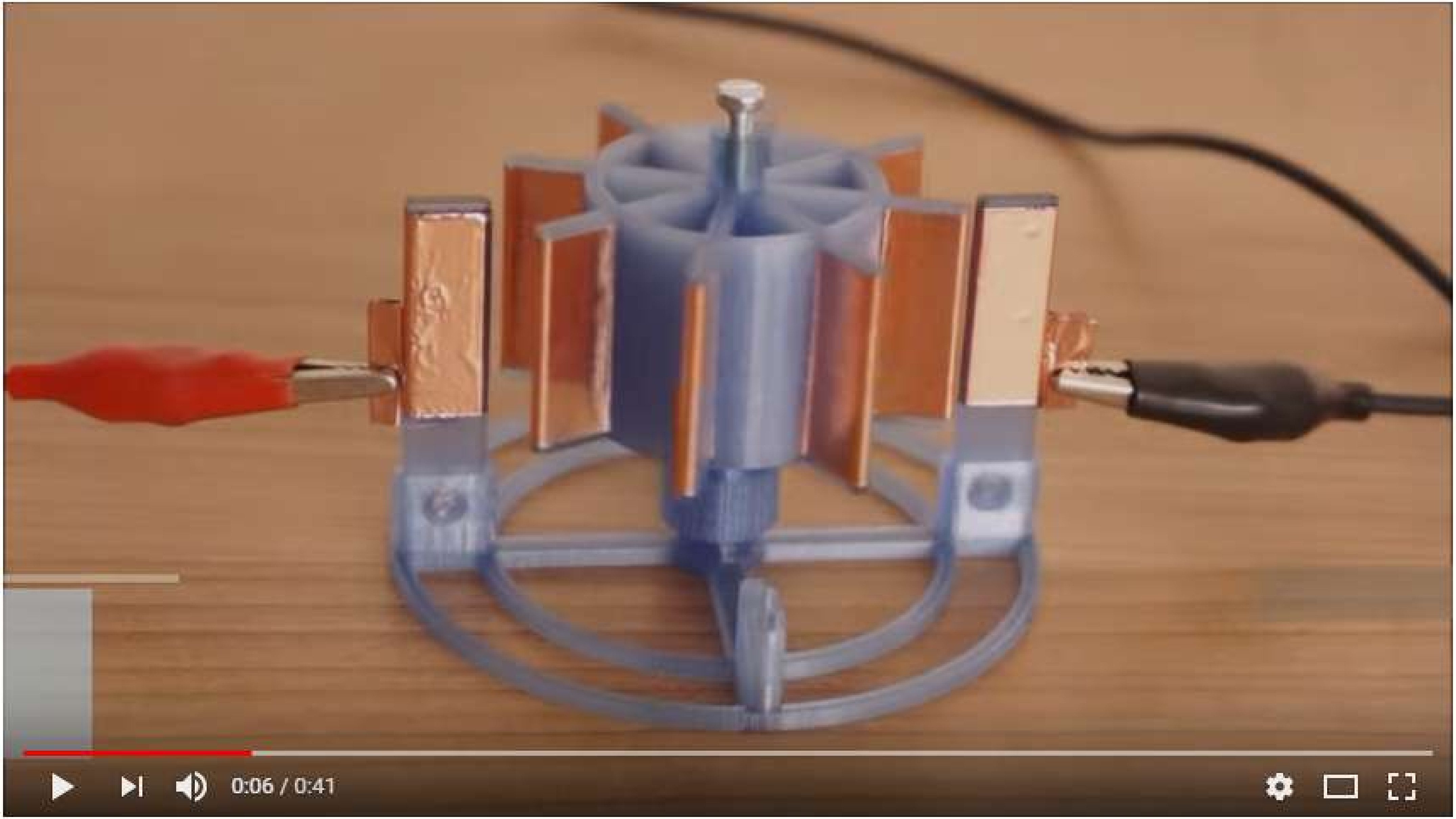
Attaching a small ball to the positive electrode will result in larger and more interesting sparks.
The small ball creates a plume of ionized air that helps the spark jump the gap.



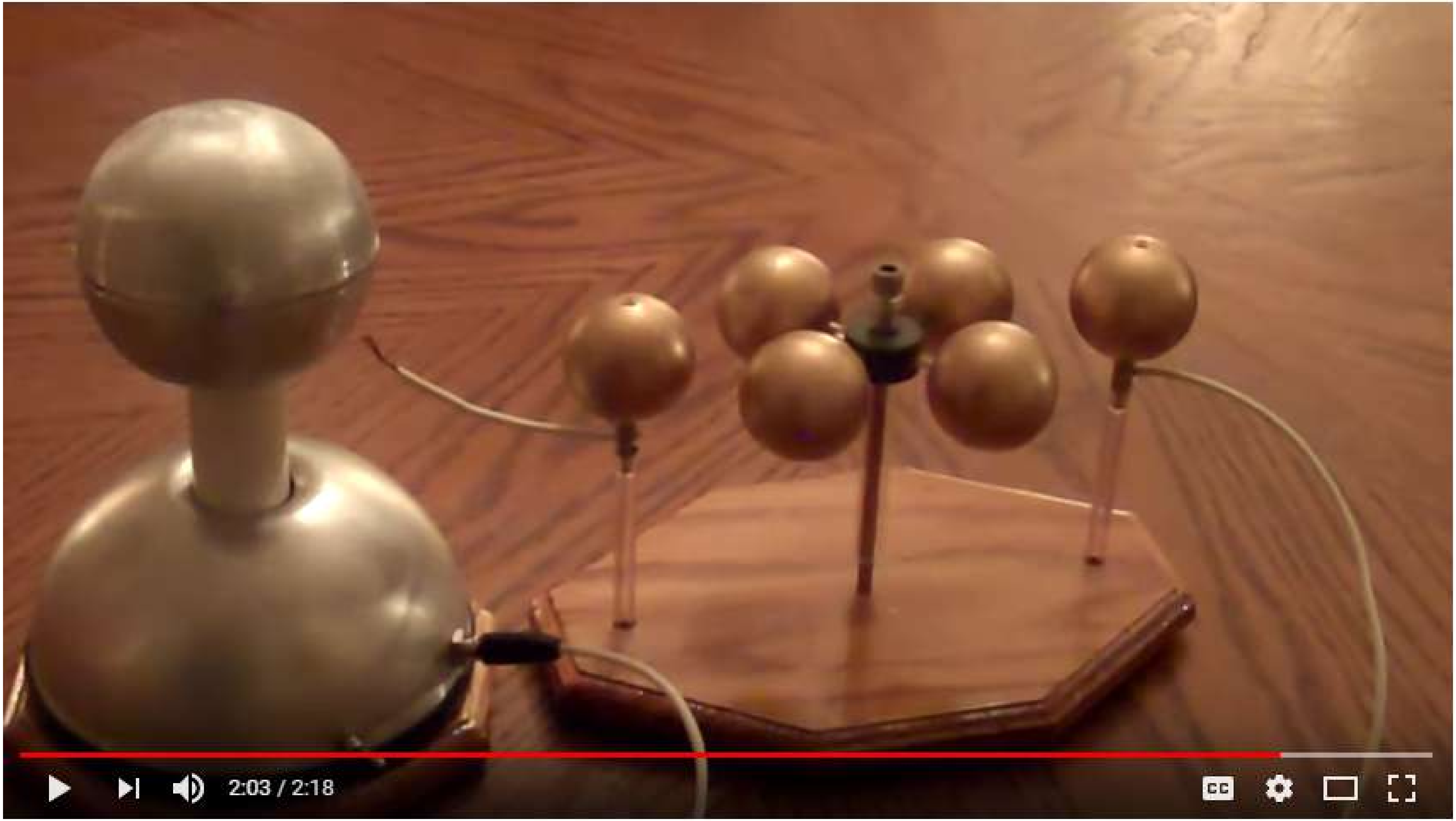
How the Wimshurst Works



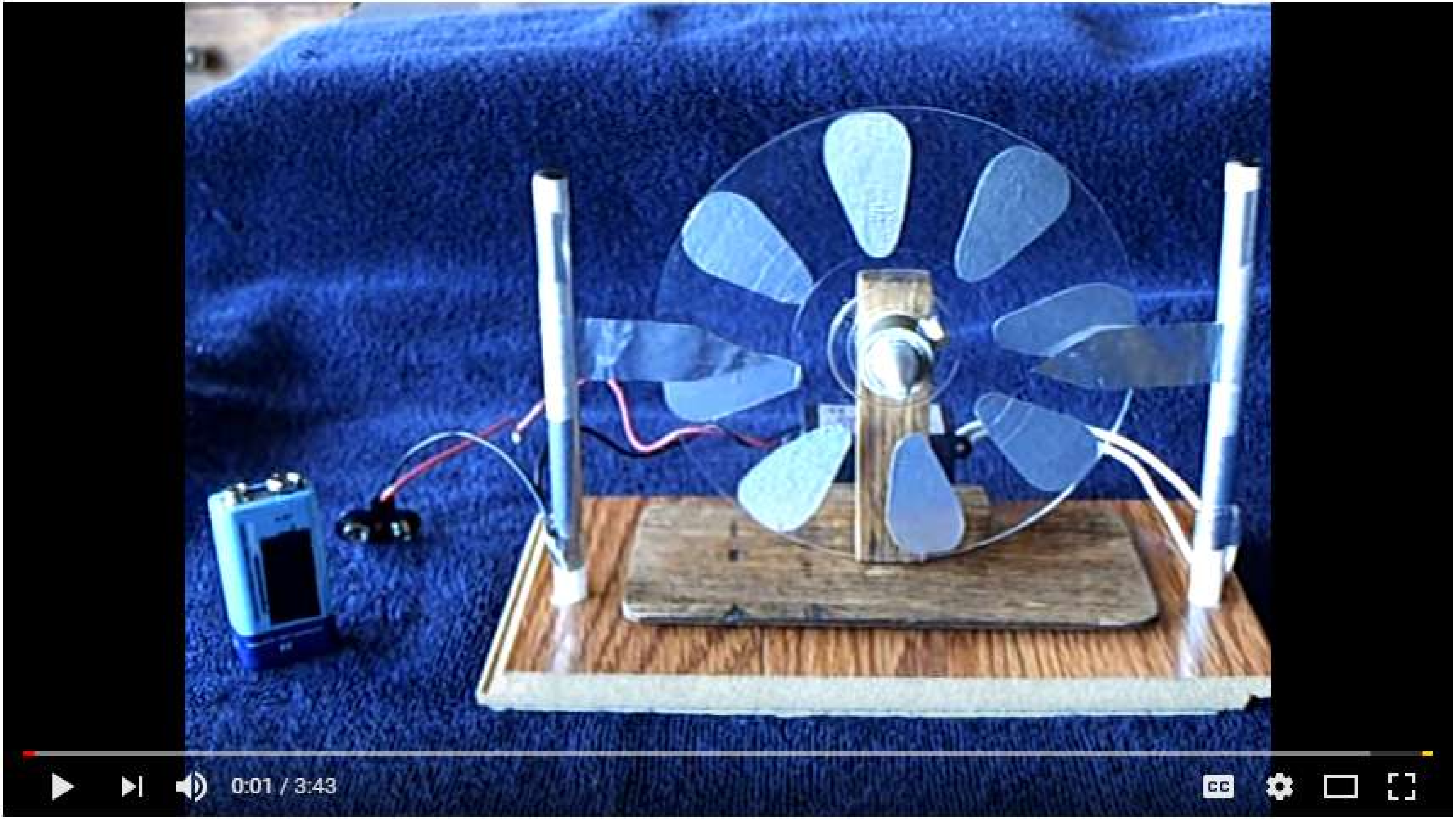
How the Wimshurst Works



Electrostatic Motor

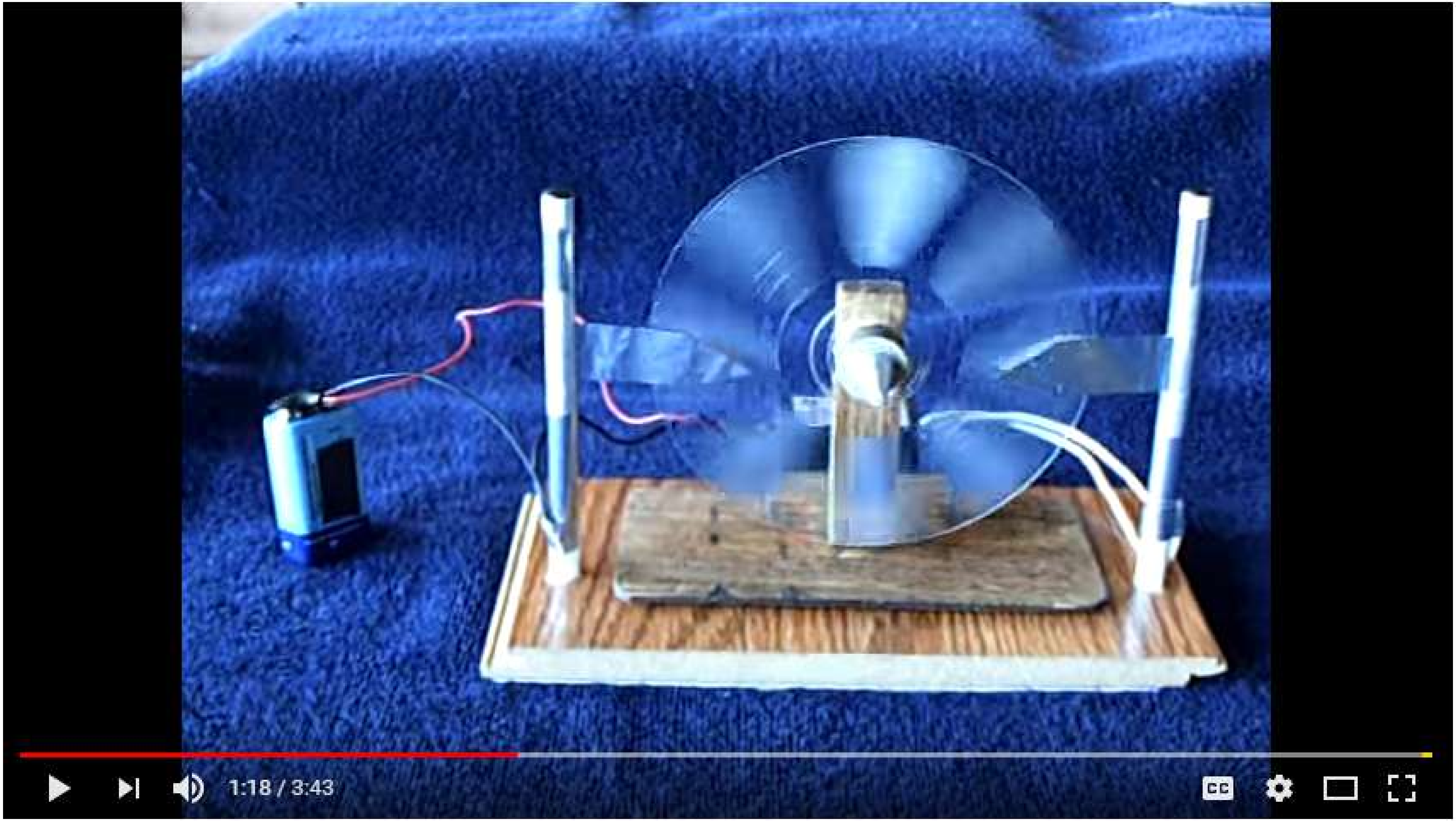


Home Made Electrostatic Motor



Clear Disk Electrostatic Motor


2:57 / 3:43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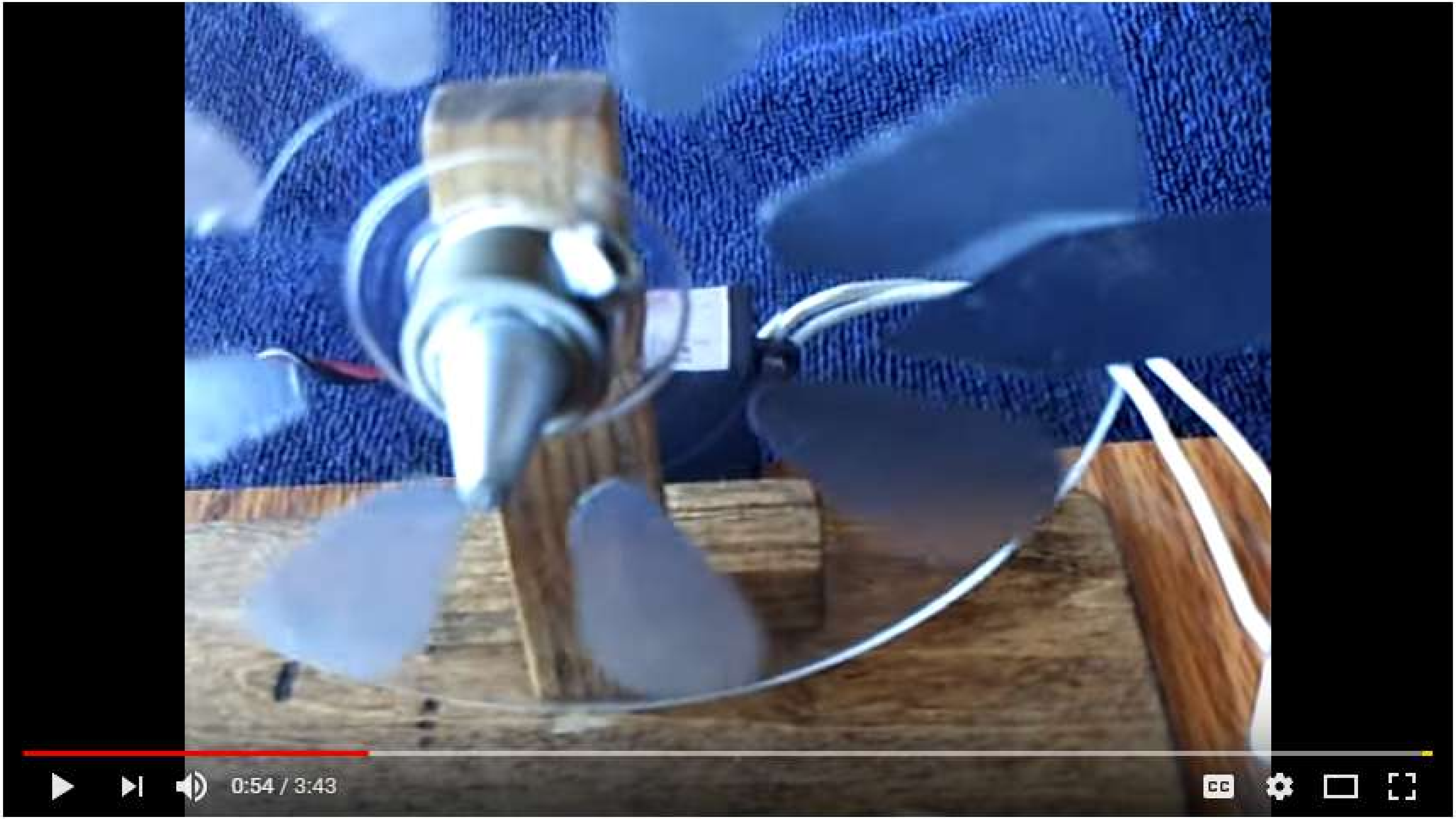
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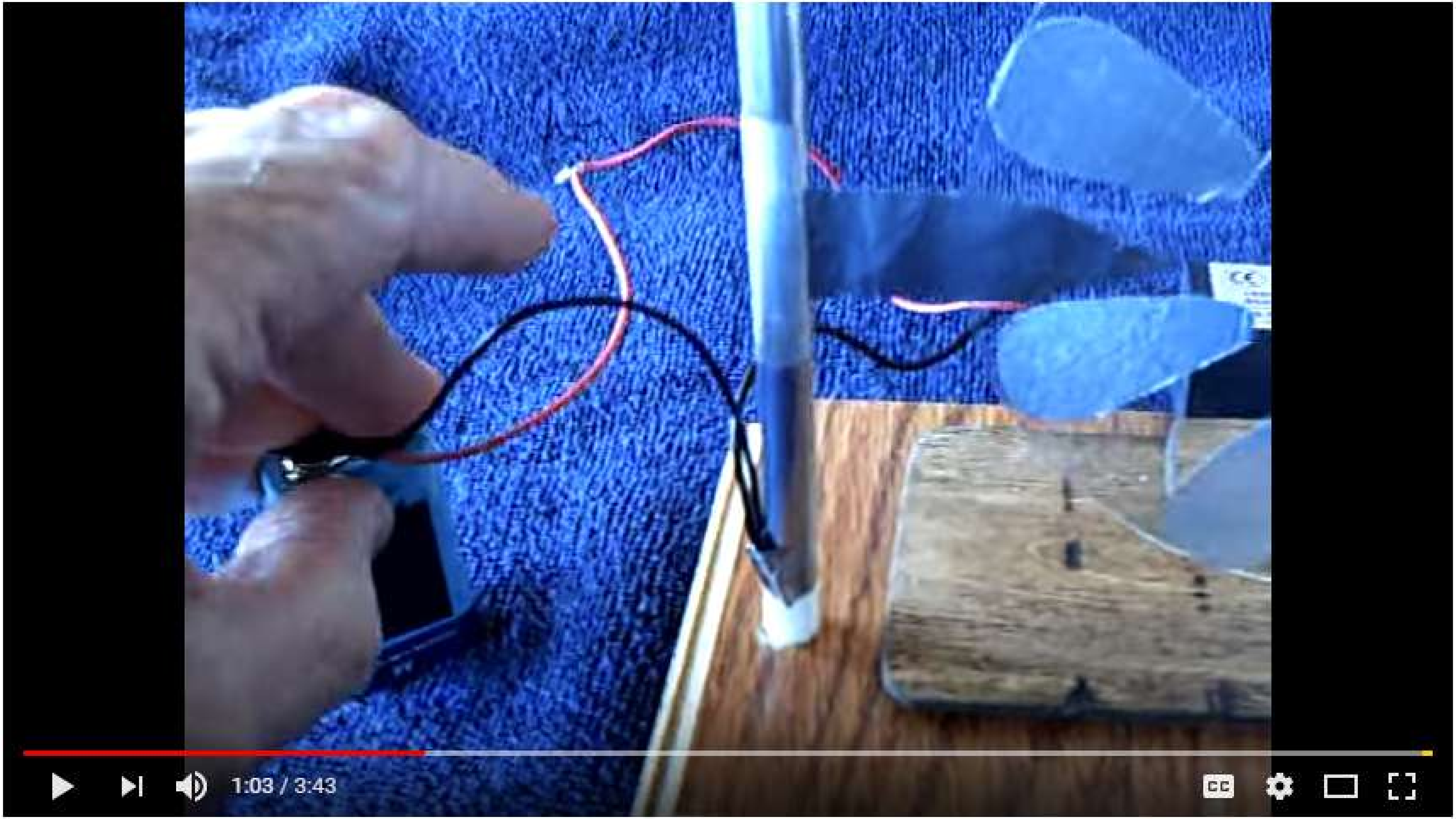
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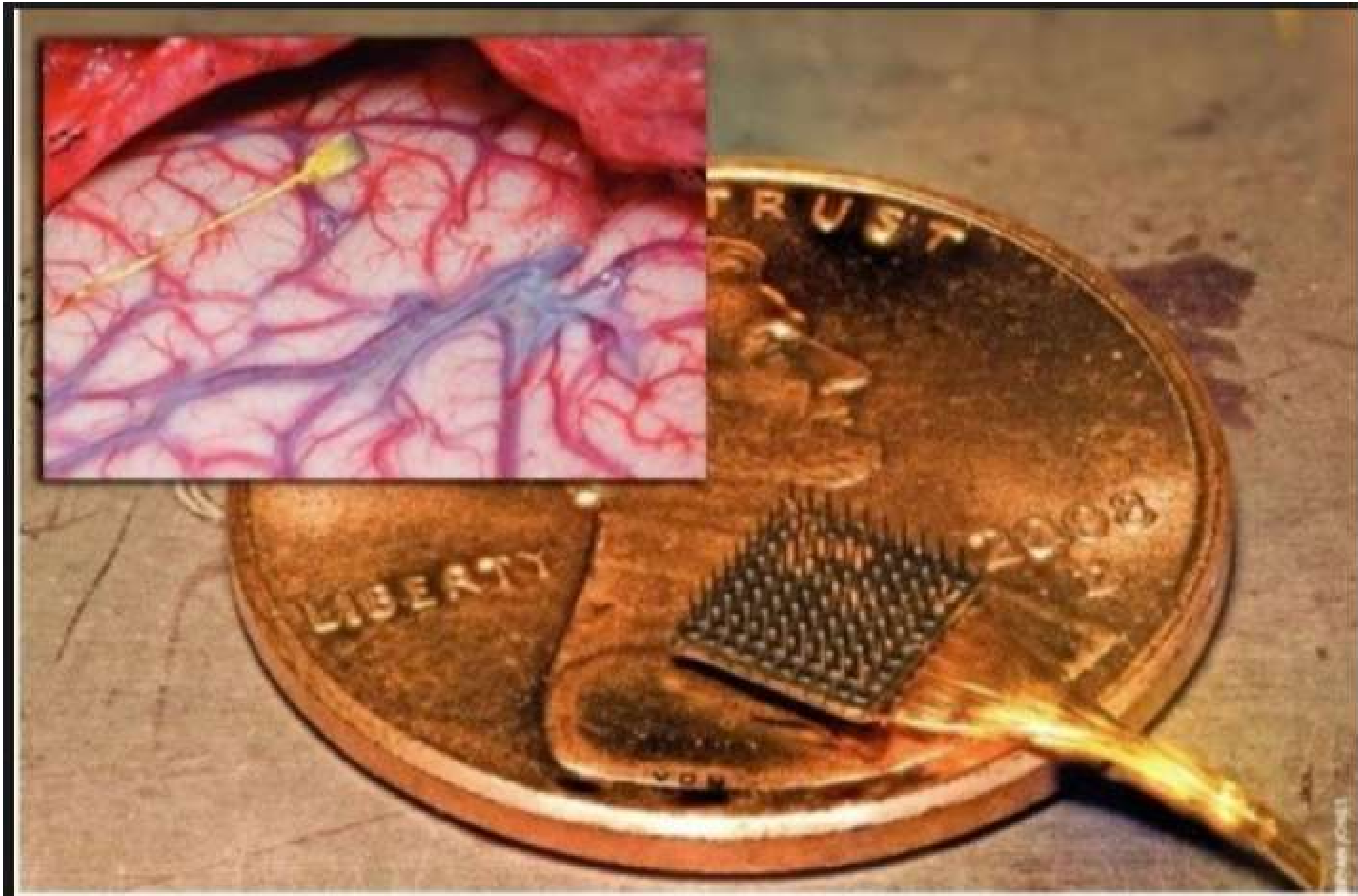
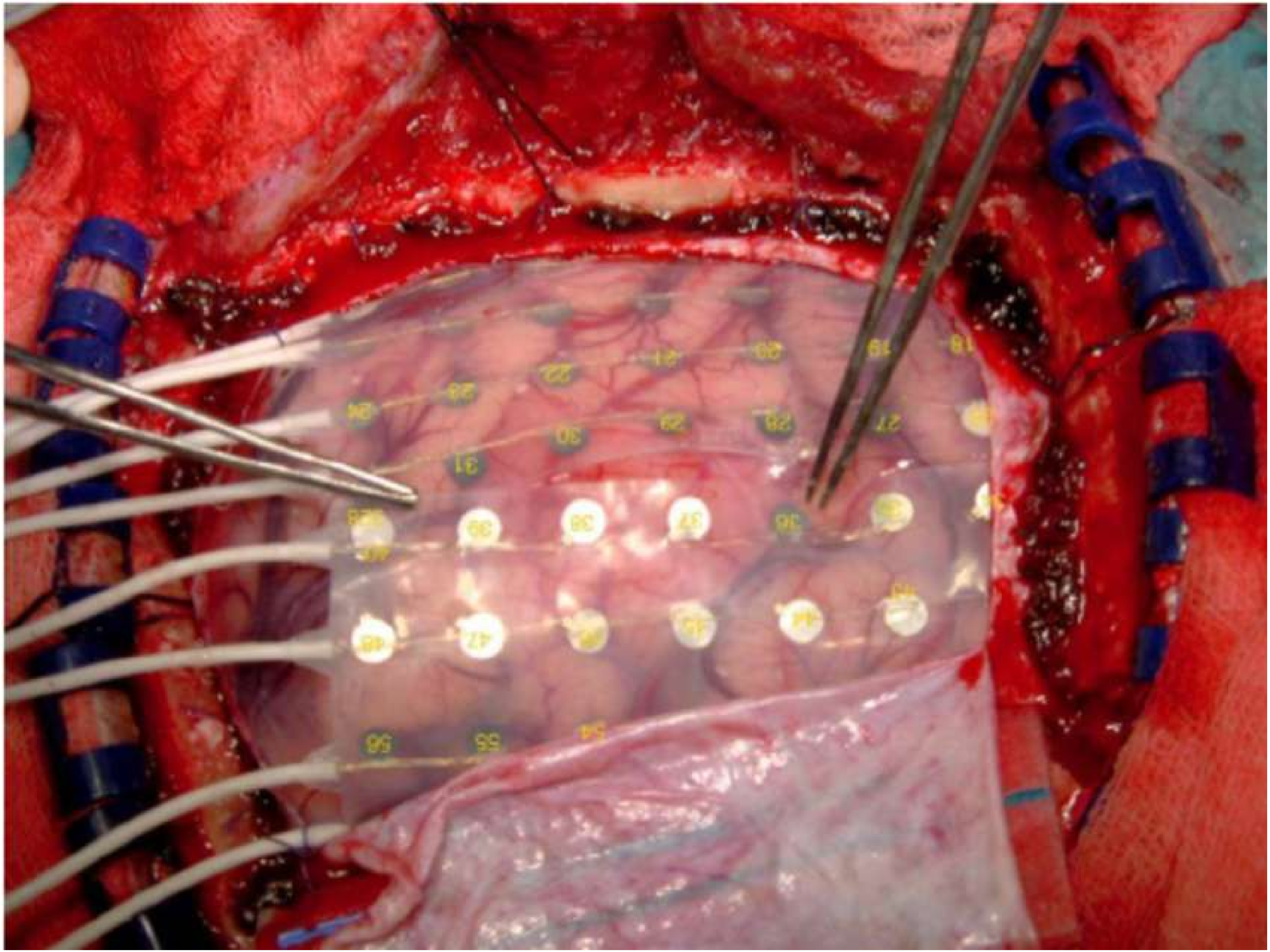
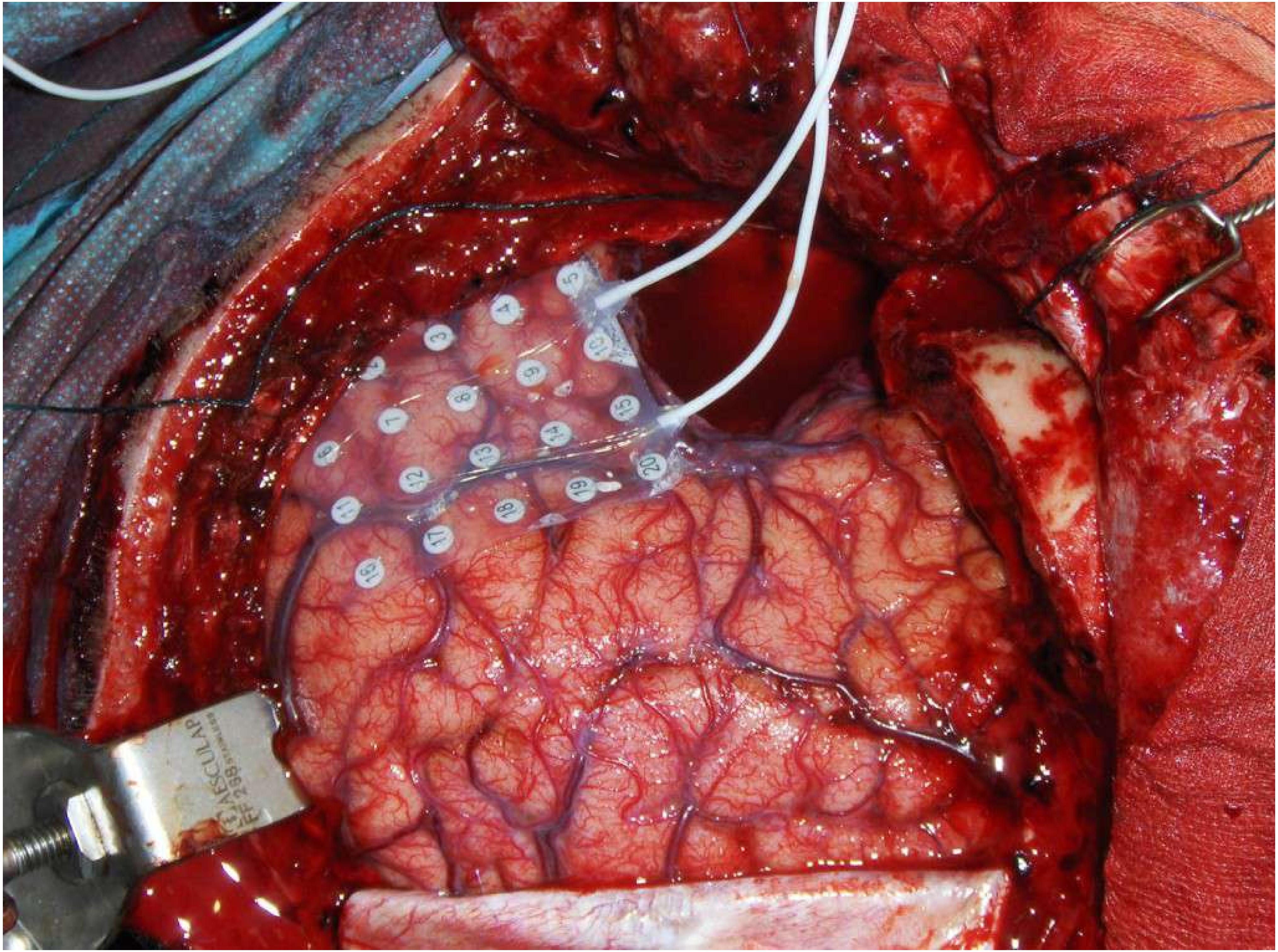


Thought control: The Utah Electrode Array can be implanted on a human brain. For a podcast and more photos, go to CityWeekly.net.

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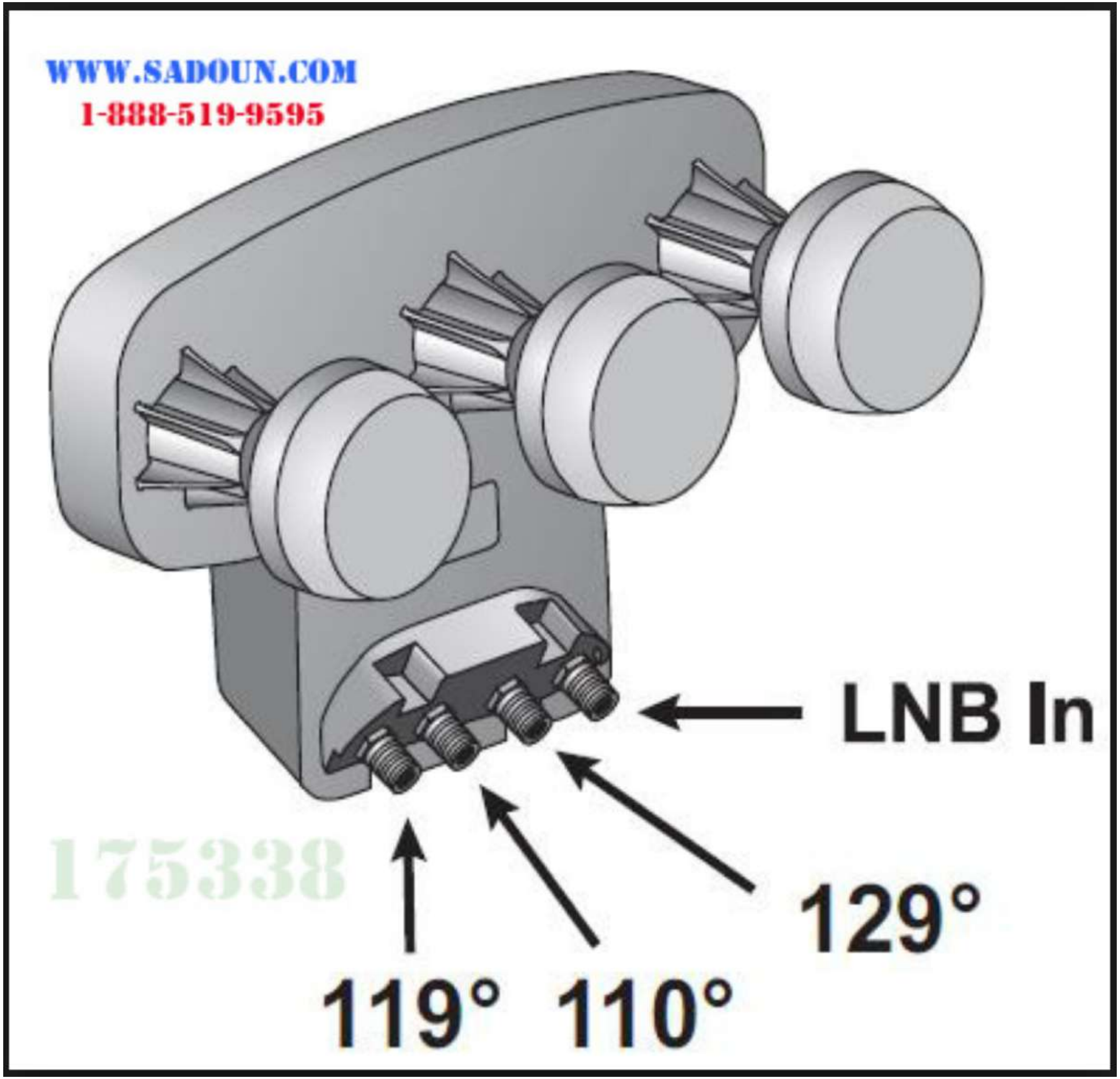
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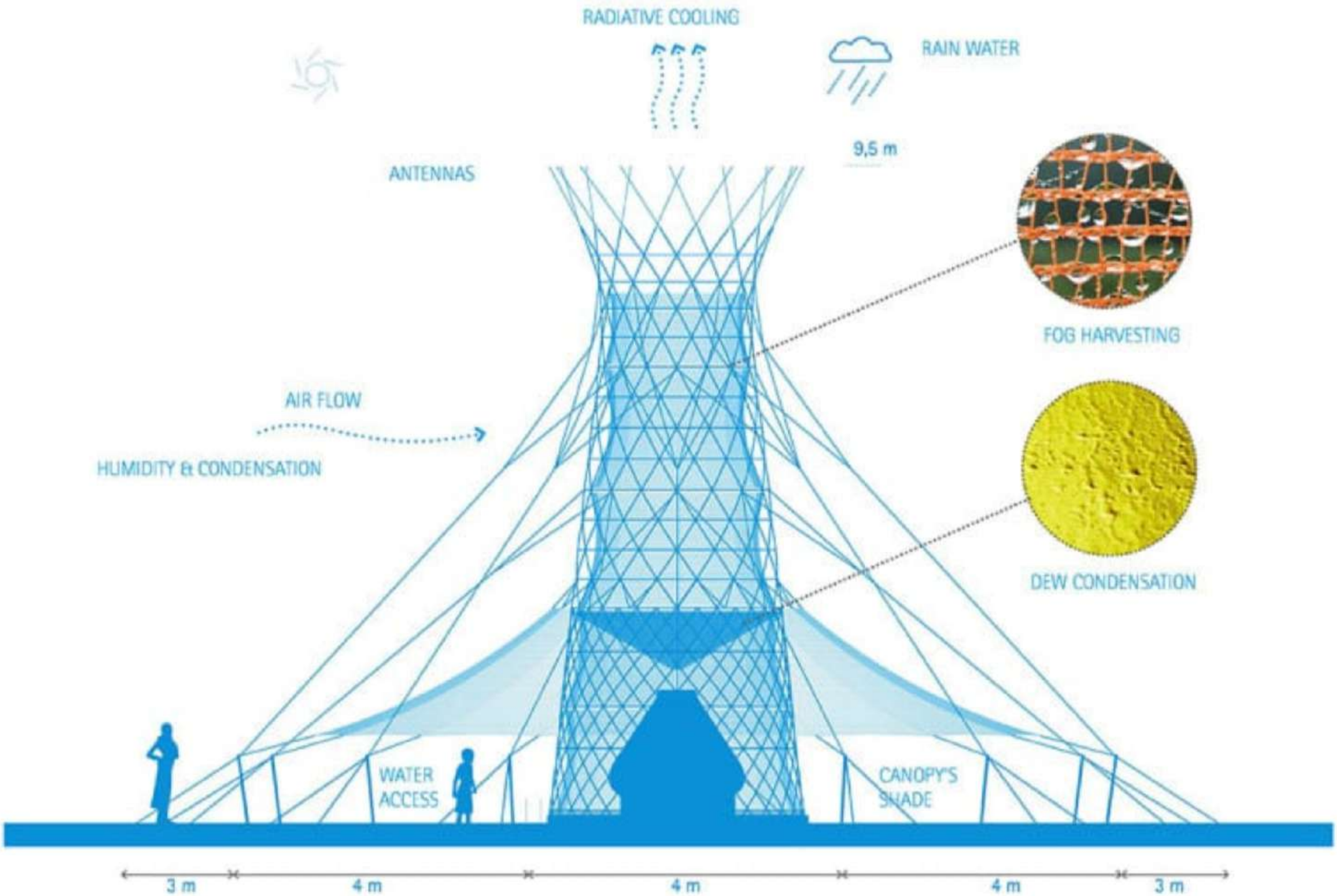
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4 m
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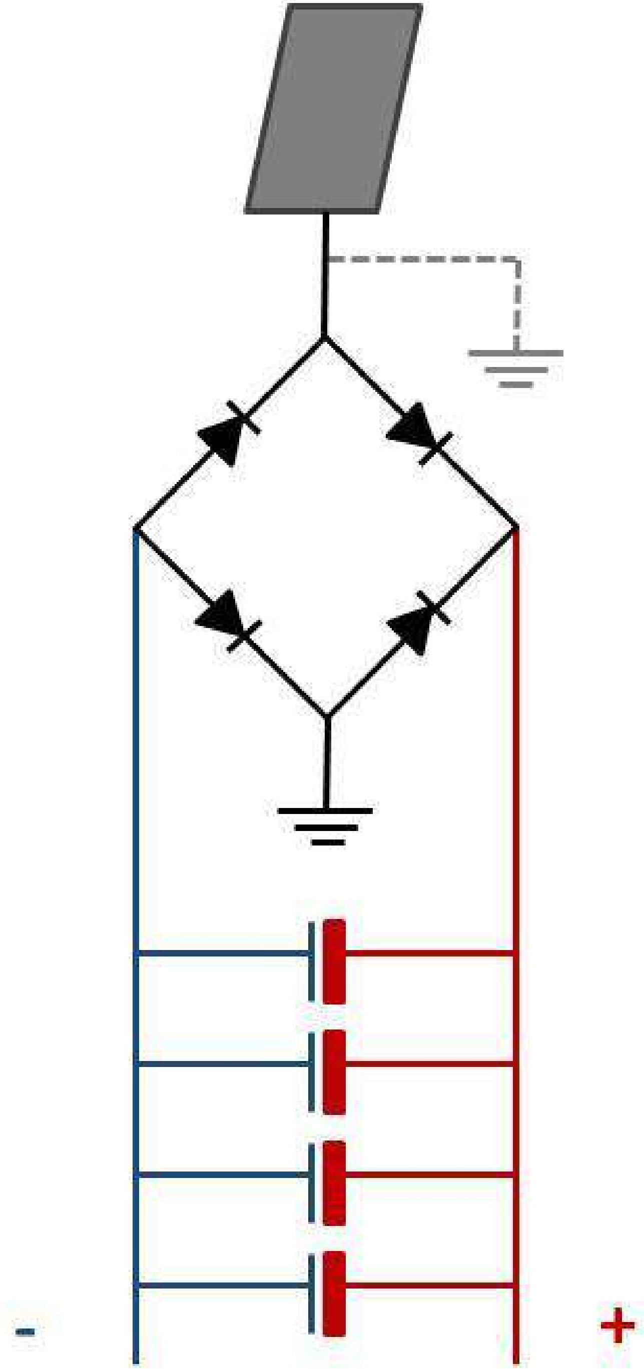


Insulated, polished aluminium plate high up in air

An extra direct earth connection might help

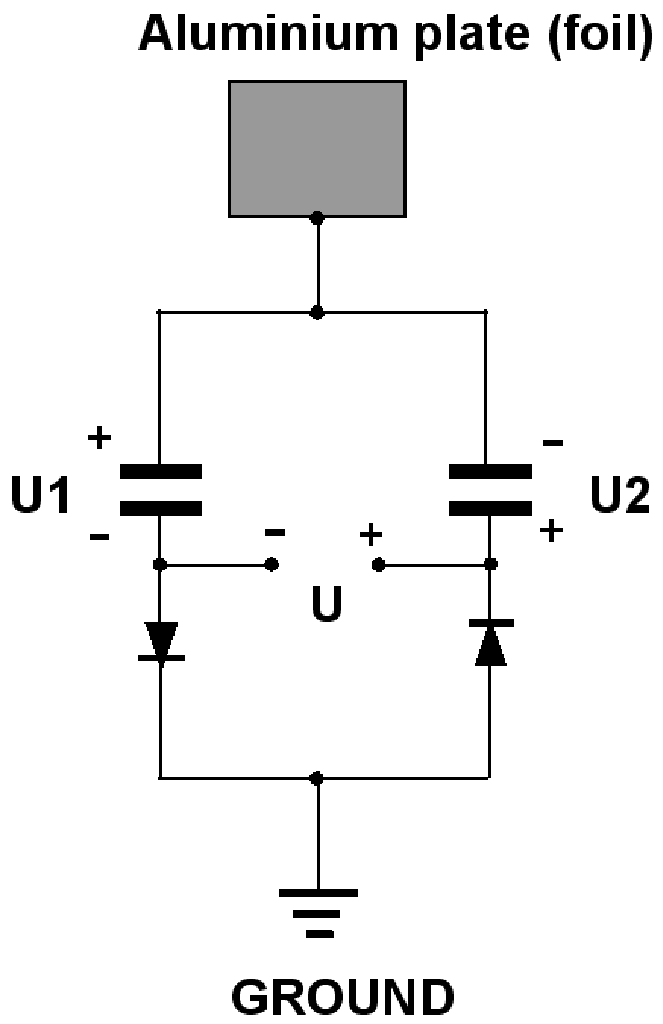
1N34a germanium diodes as full-wave bridge rectifier

4mm high load single core copper wire

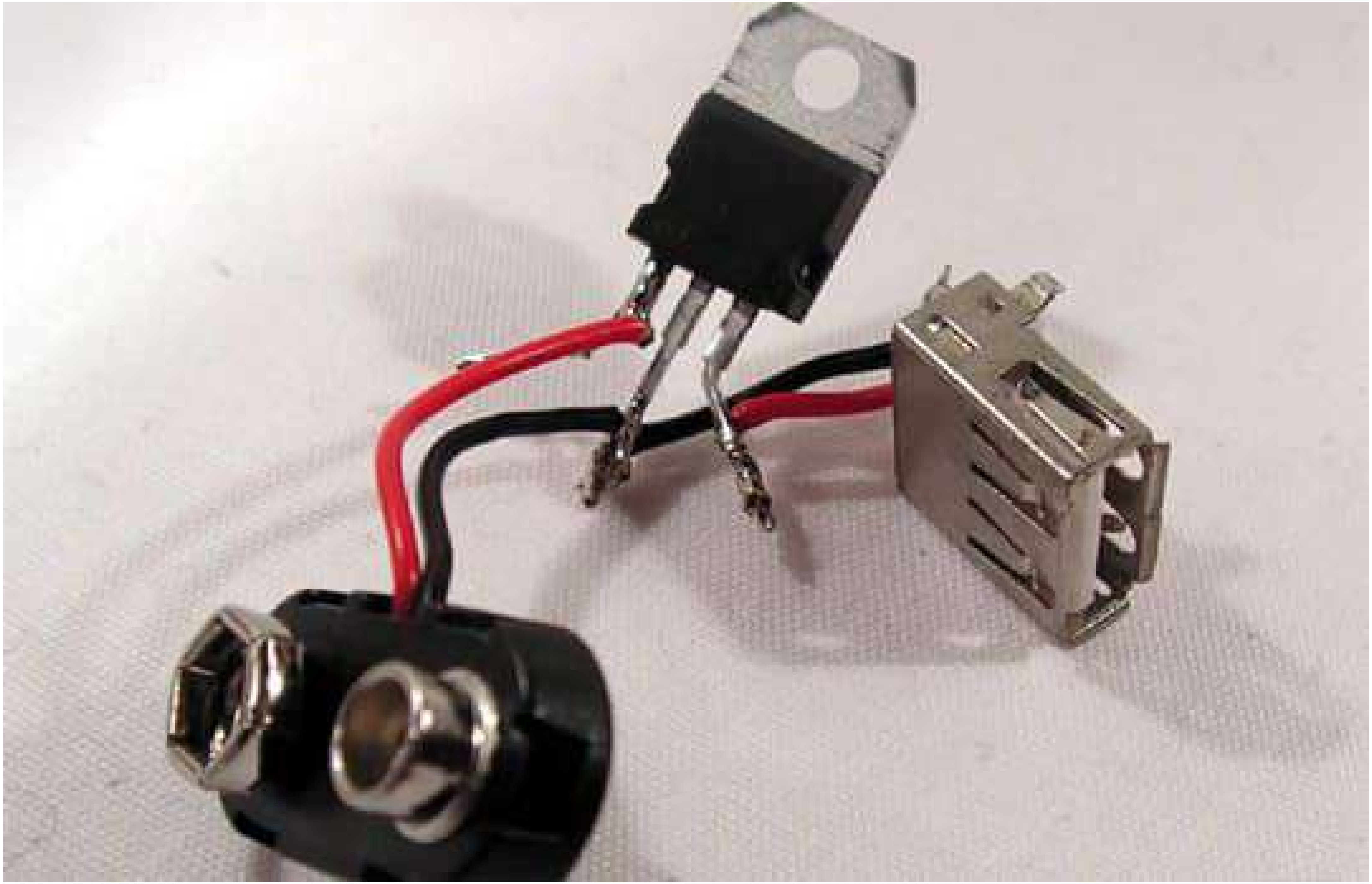
Earth is copper pipe 2 metres deep in moist soil

100uF 50V electrolytic capacitors in parallel

IMPROVEMENT OF RECEIVER:



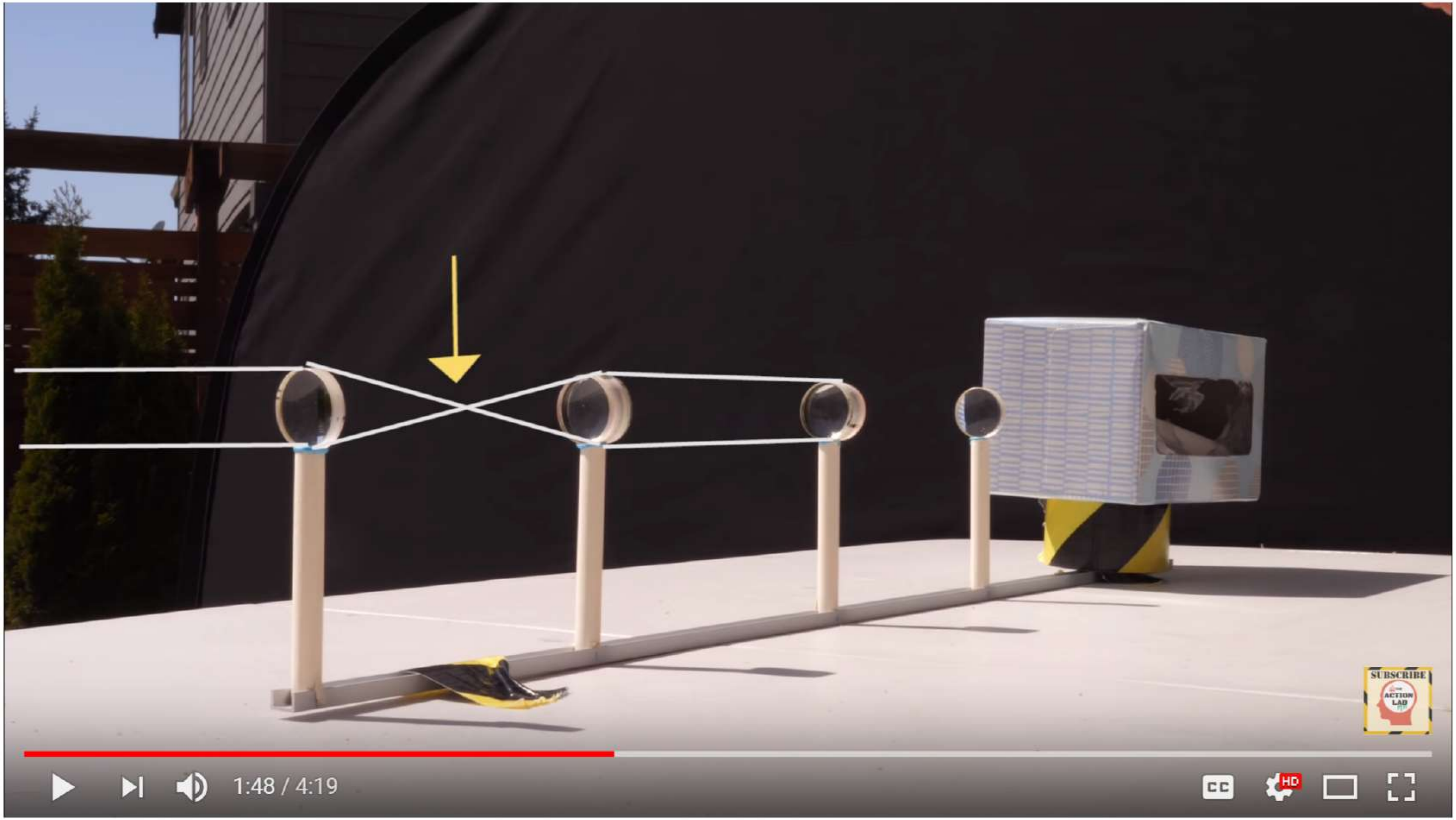
U = U1 + U2



Make Water Appear Frozen In Time Using Sound


24 Hz sound
makes water appear "frozen"
2:35 / 7:34
HD


f1=24.0 Hz
f2=23.0 Hz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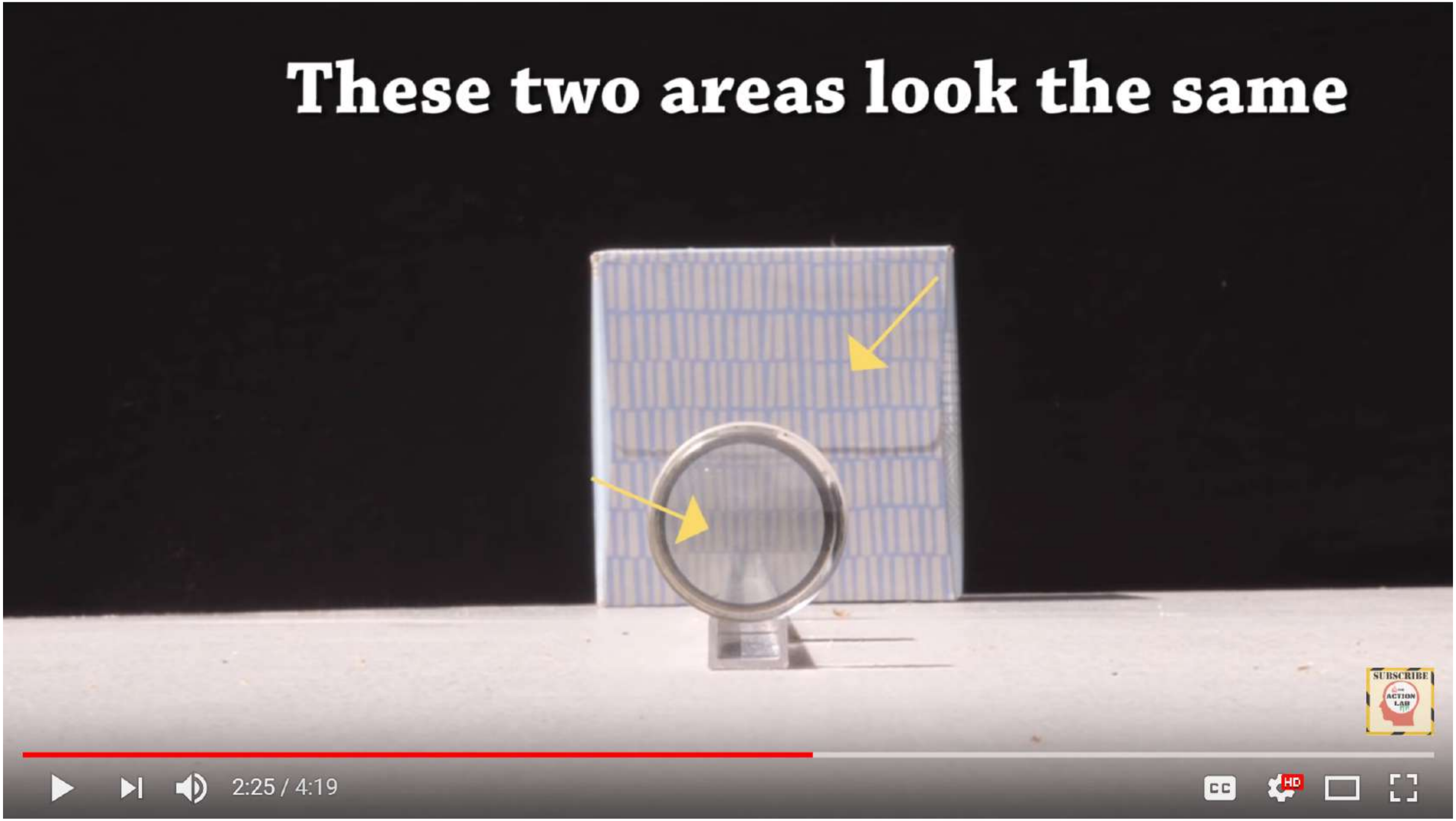
These two areas look the same
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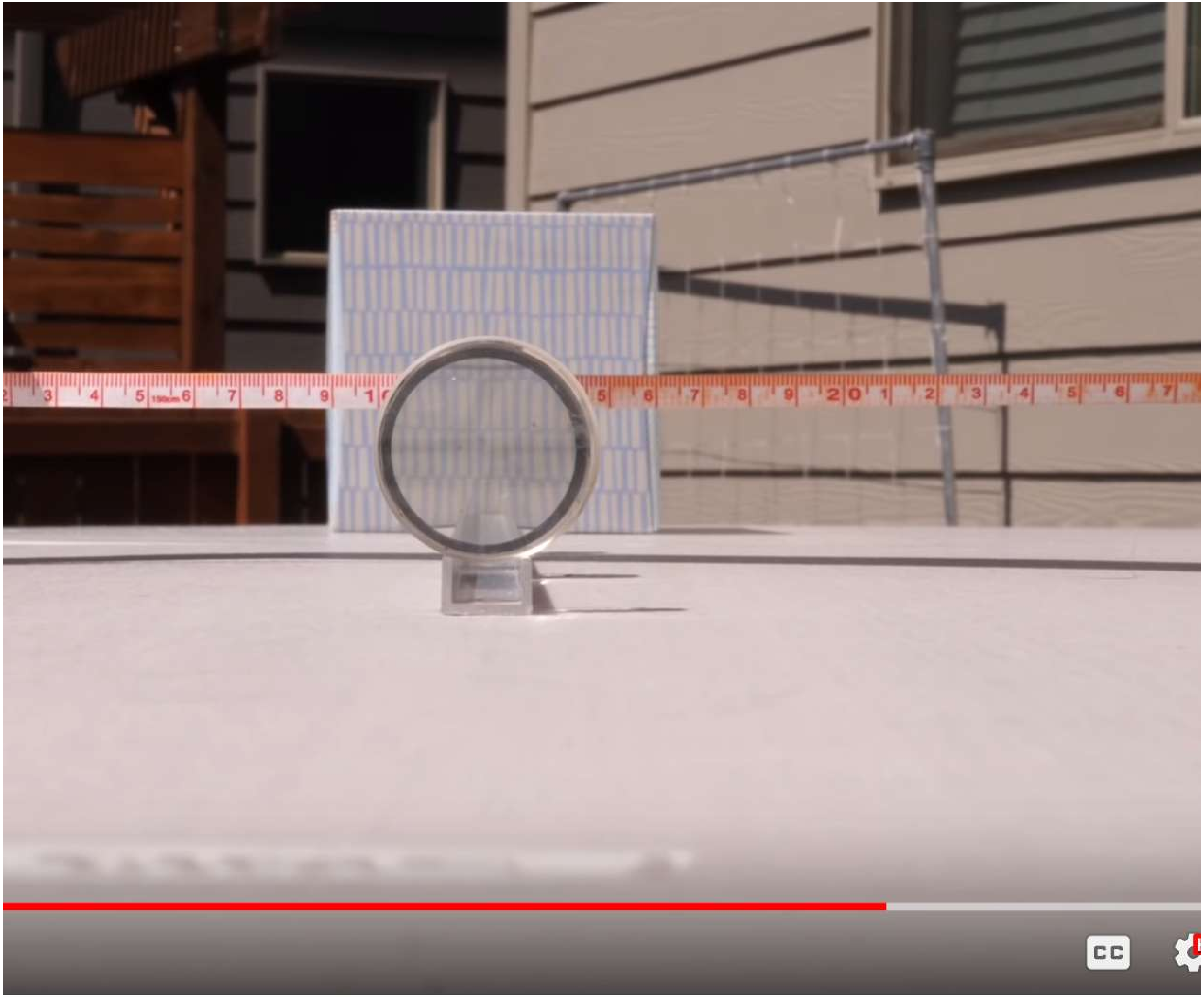
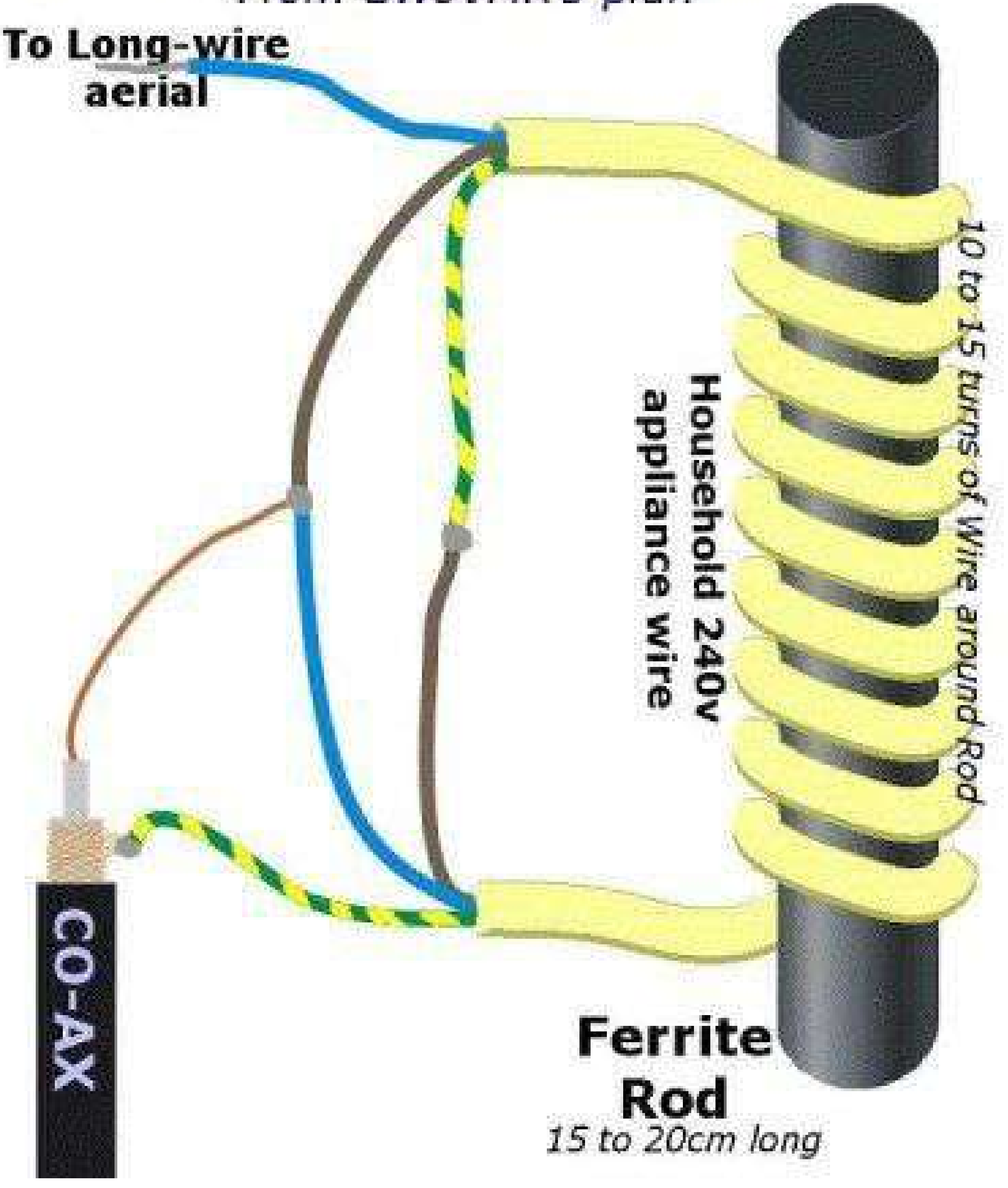
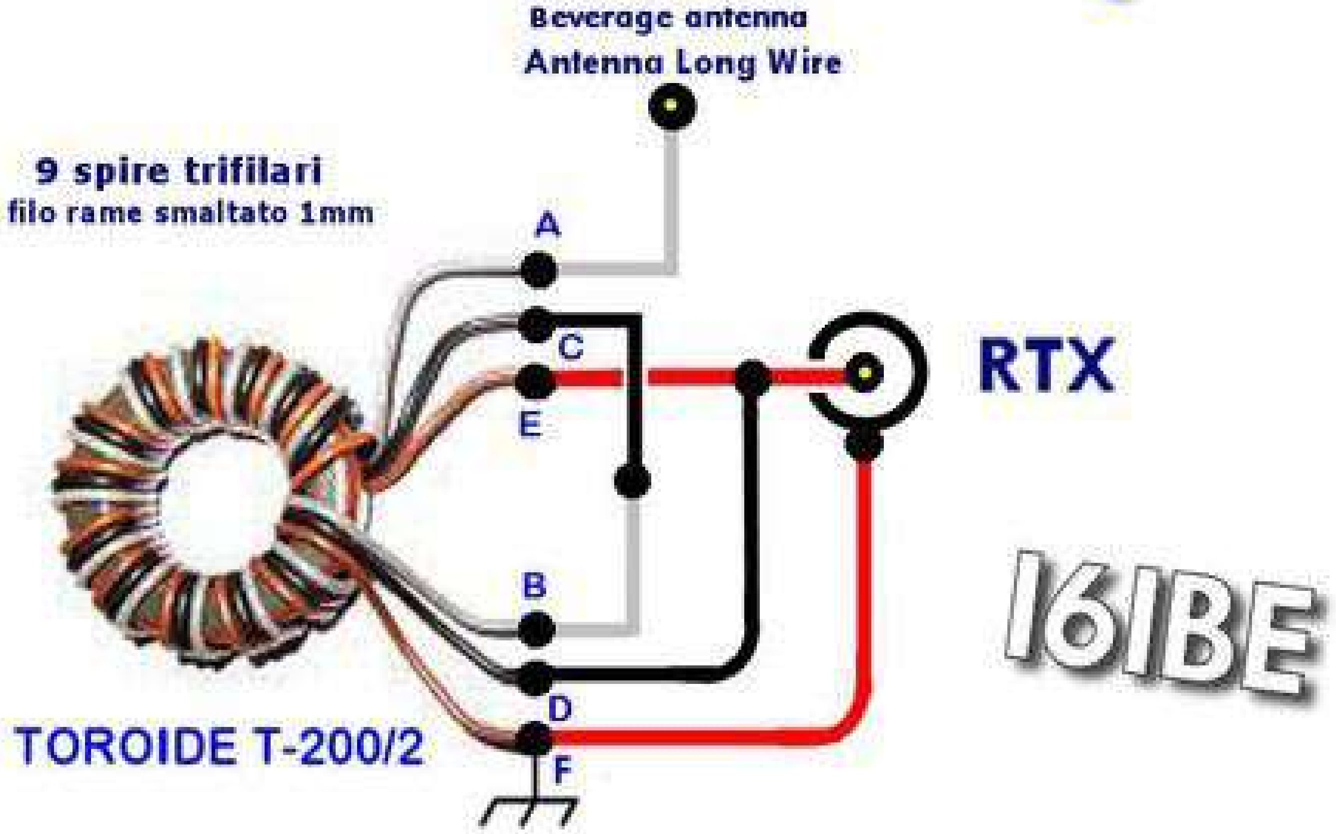


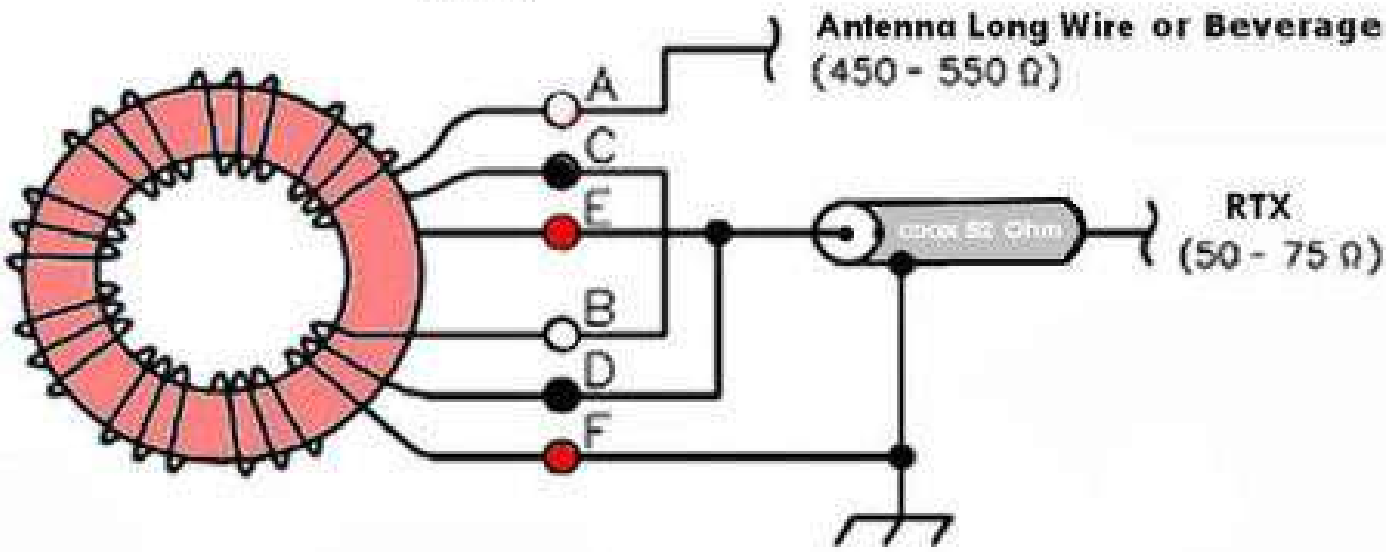
Voltage Balun / "Magnetic Balun"

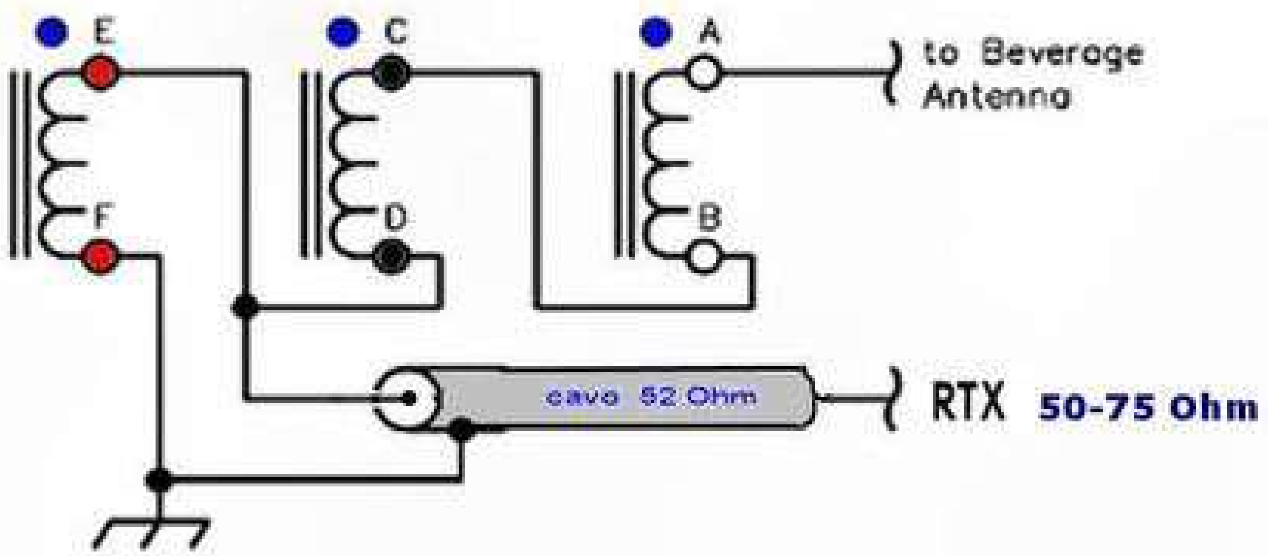
From GW0VMR's plan



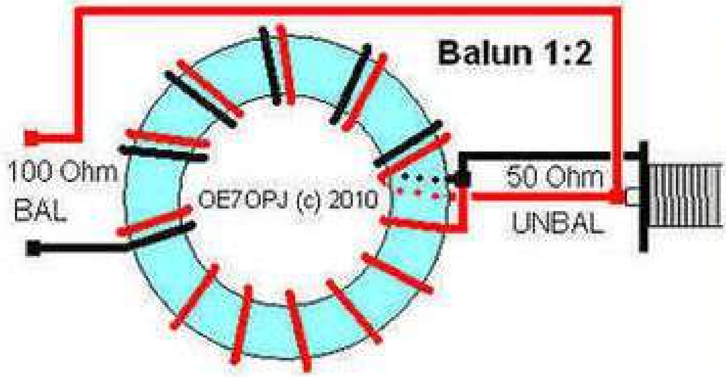
BALUN 9:1 Antenna Long Wire





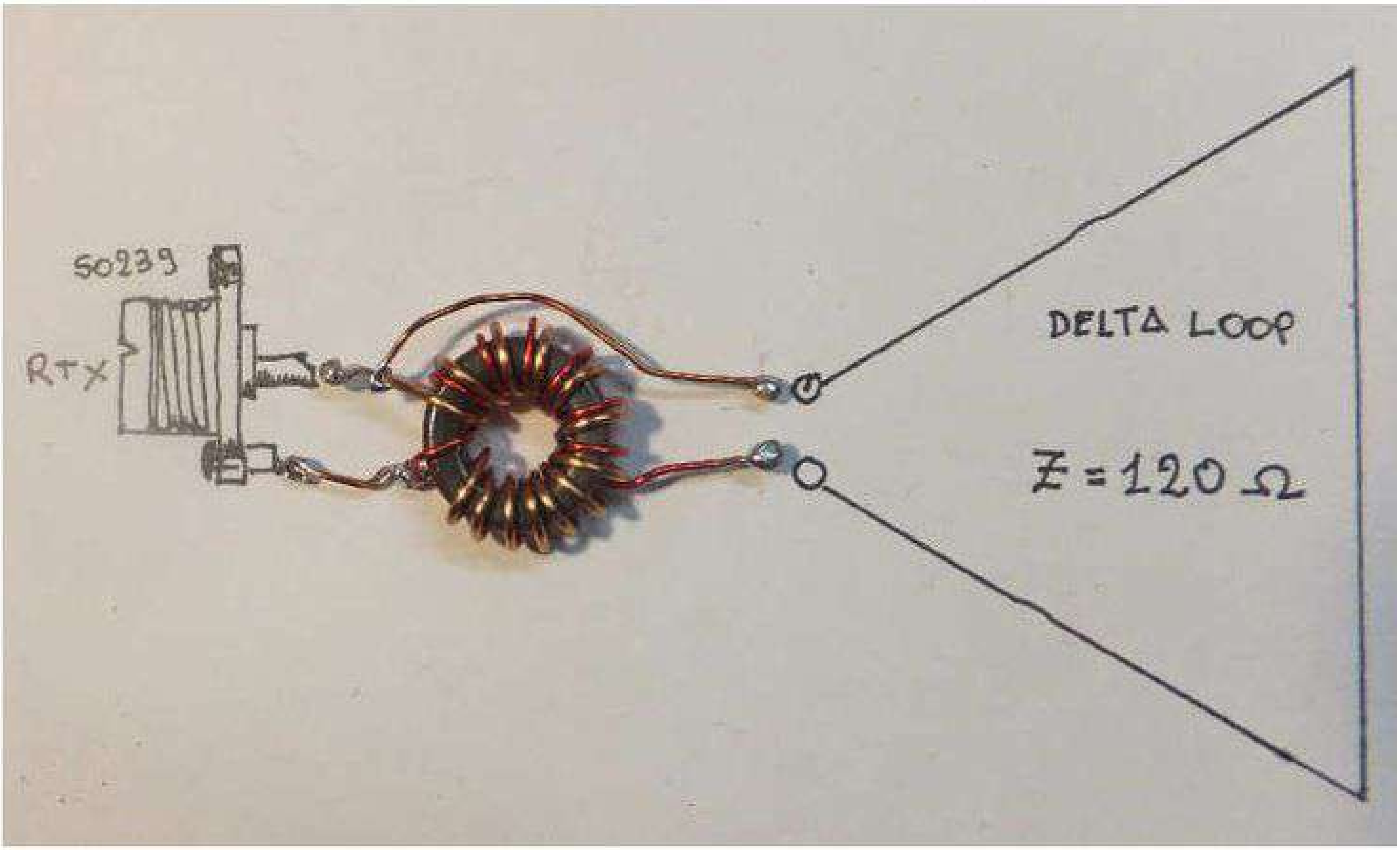


Bal-Un 2:1 per antenna DELTA-LOOP

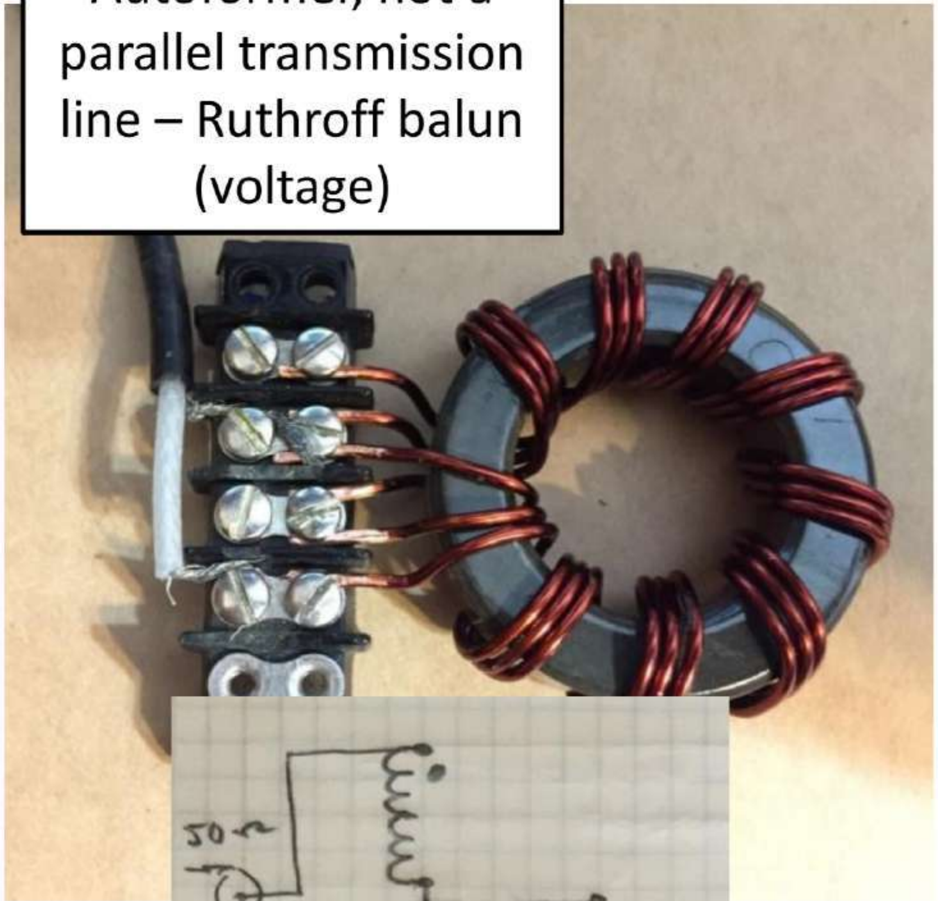


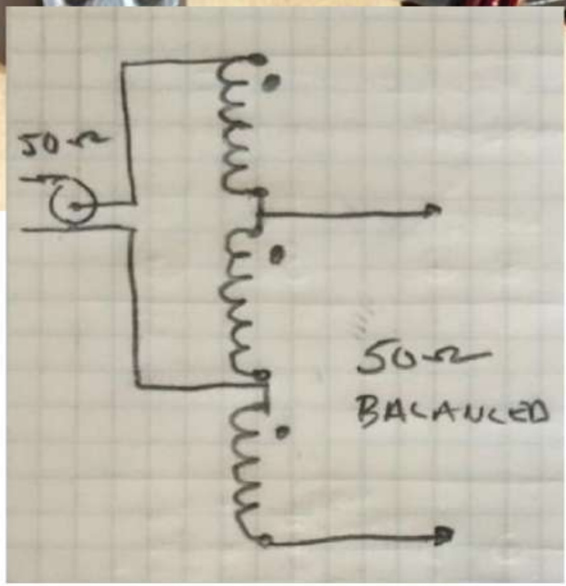
by OE7OPJ

Toroide	Numero di Spire	Potenza Supportata
T80-2	25	60 Watts
T106-2	16	100 Watts
T130-2	18	150 Watts
T157-2	16	250 Watts
T200-2	17	400 Watts
T200A-2	13	400 Watts
T400-2	14	1000 Watts



Autoformer, not a parallel transmission line – Ruthroff balun (voltage)

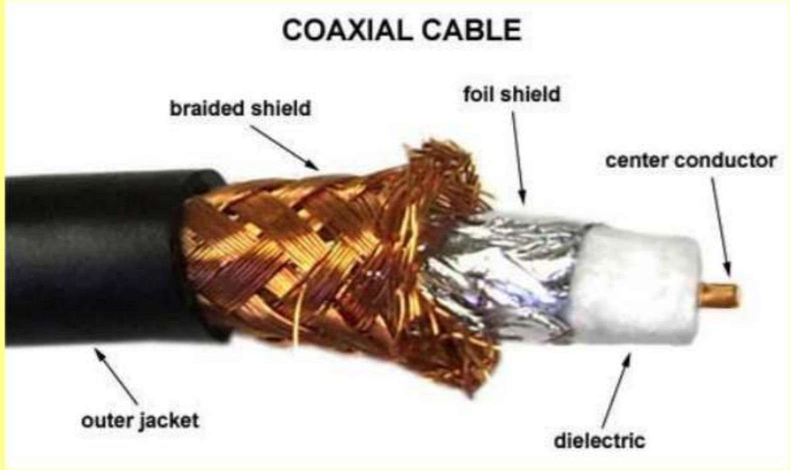




One or more parallel transmission lines, connected various ways – Guanella balun (current) – core is used solely for choking action

F/B: 0.00 dB; Rear: Azim. 120 deg, Elev. 60 deg

Coax is unbalanced …..



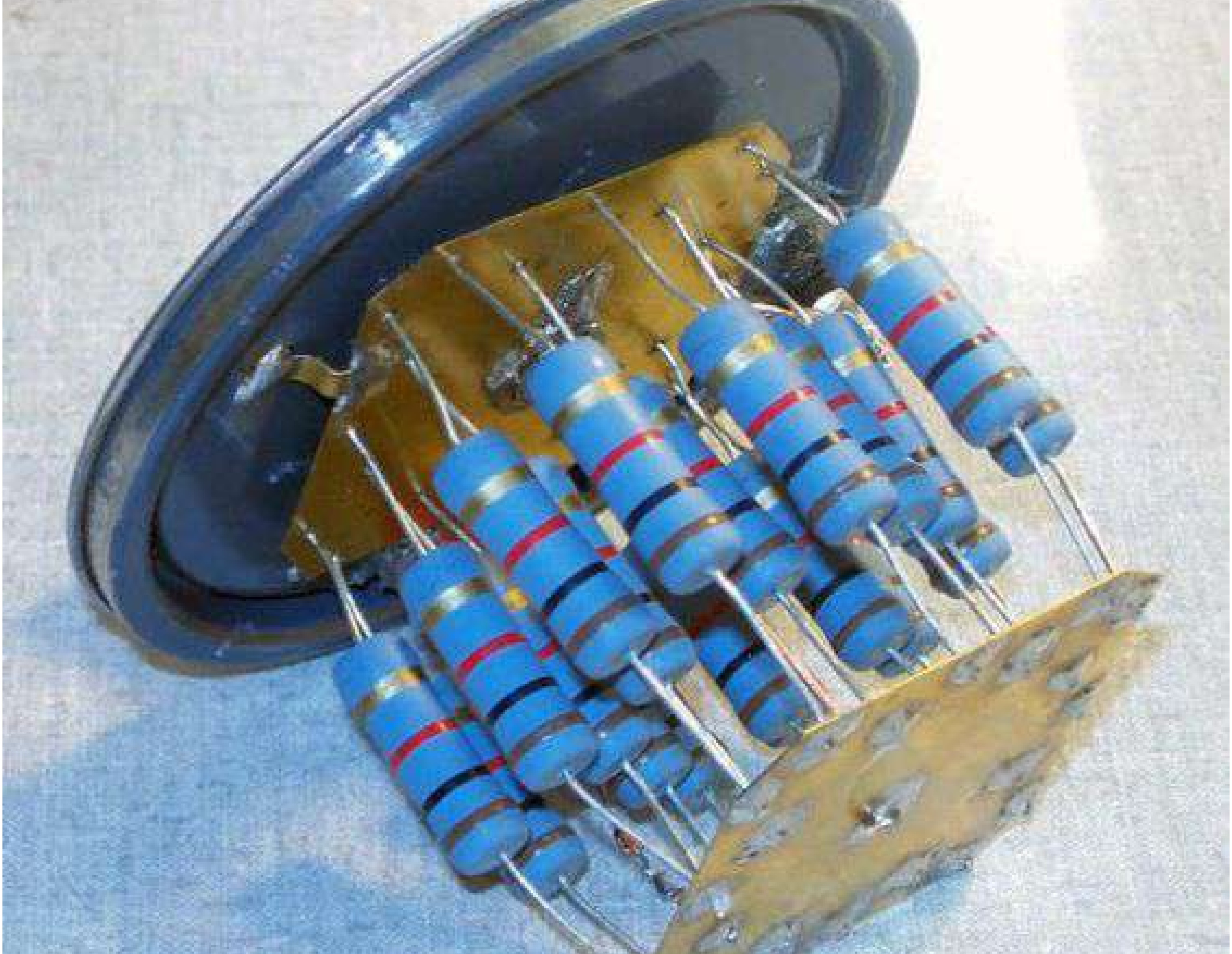
… Ladder line is balanced

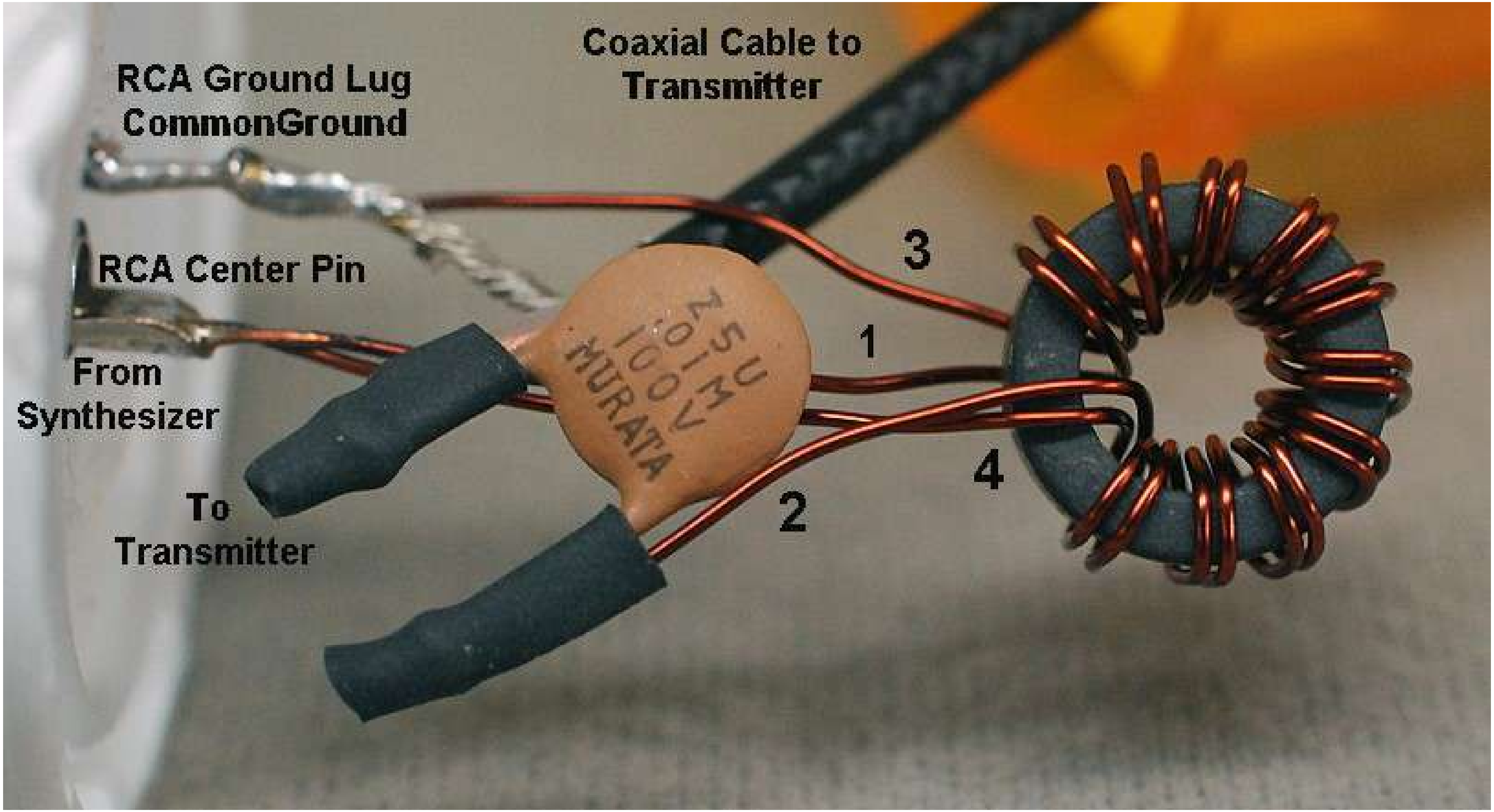
Coax is unbalanced, while ladder line and open wire feeder is balanced, as long as it is used properly and is kept away from metal and "earthy" materials

Convert parallel feedline to coax

Types of Parallel Line

- **Open Feeder** or **Ladder line**
  - Typ 450 and 600 ohm
- **Twin Lead**
  - Common for (old) outdoor TV antennas
- **Window line**
  - Commonly available today




Coaxial Cable to
Transmitter
RCA Ground Lug
CommonGround
RCA Center Pin
From
Synthesizer
To
Transmitter
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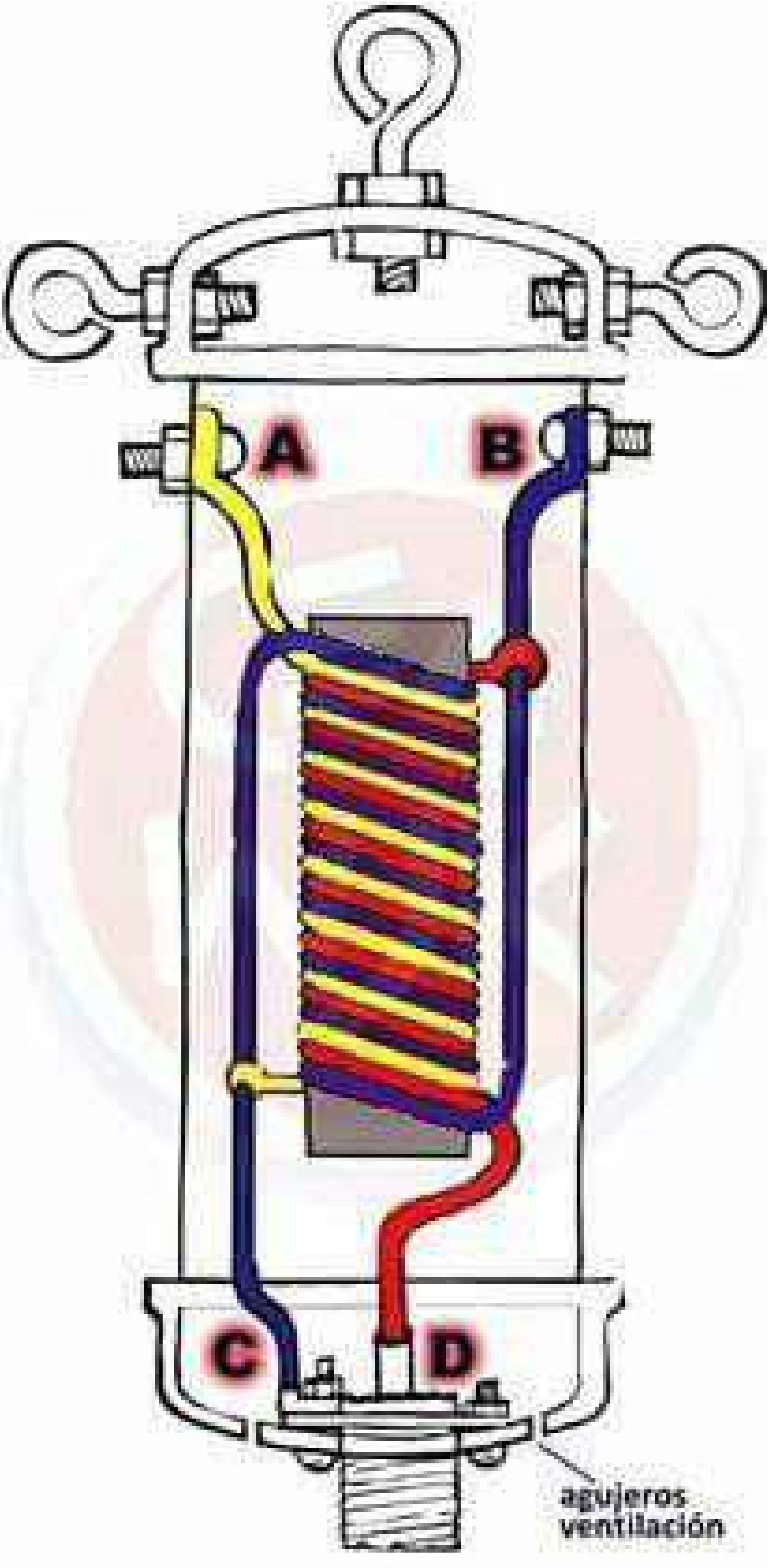
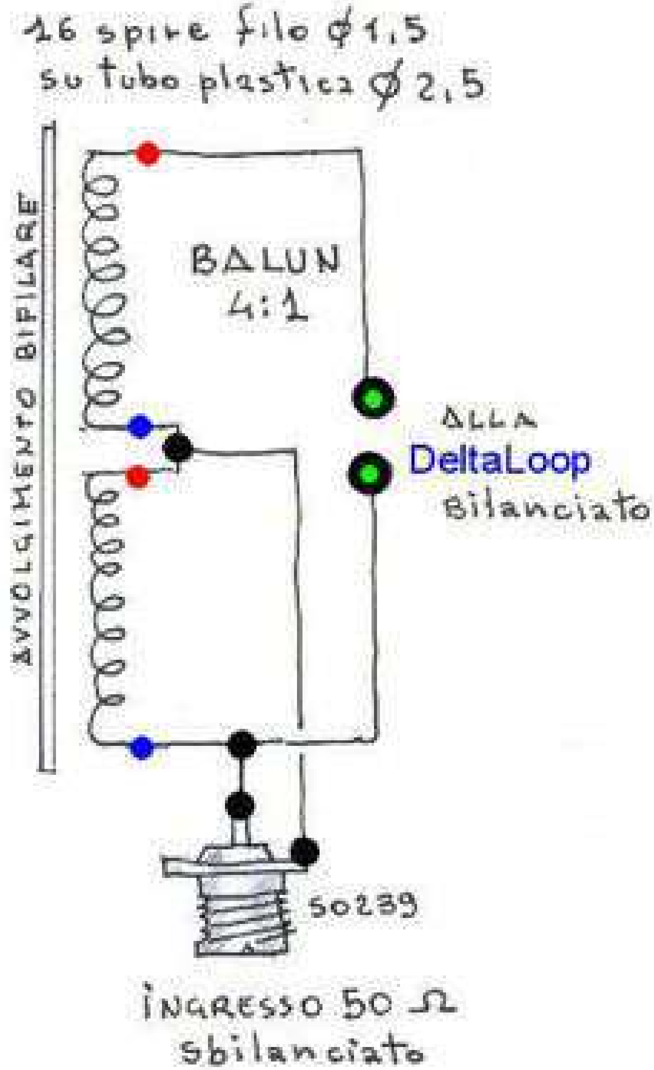
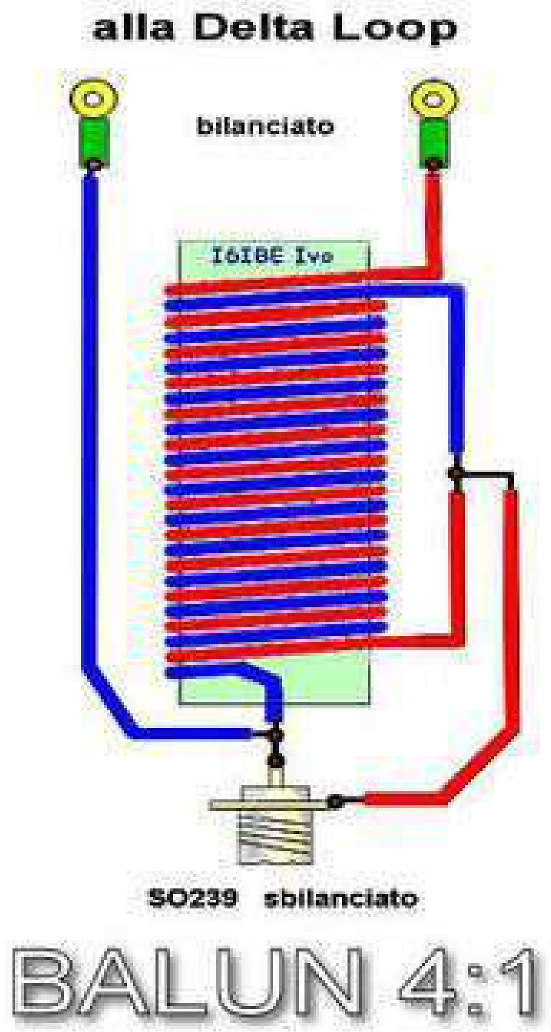
100V
MURATA


A
B
C
D
agujeros
ventilación

Formula LUNGHEZZA DELTA LOOP	Esempio 14.00 MHz (20 metri)	Lunghezza TOTALE del LOOP
Velocita'Luce : Freq MHz x 0.97= L	**299.8** VL **: 14.100** MHz x **0,97**	**20.624** metri totale loop
$L = \frac{300.000}{MHz} \times 0.97$	I6IBE	
Formula LUNGHEZZA Stub coax 75 Ohm	Esempio 14.00 MHz (20 metri)	Lunghezza TOTALE cavo 75 Ohm
Lunghezza LOOP x 0.66 : 4	**20.624** x **0.66** : **4**	**3.402** Metri coax RG-59





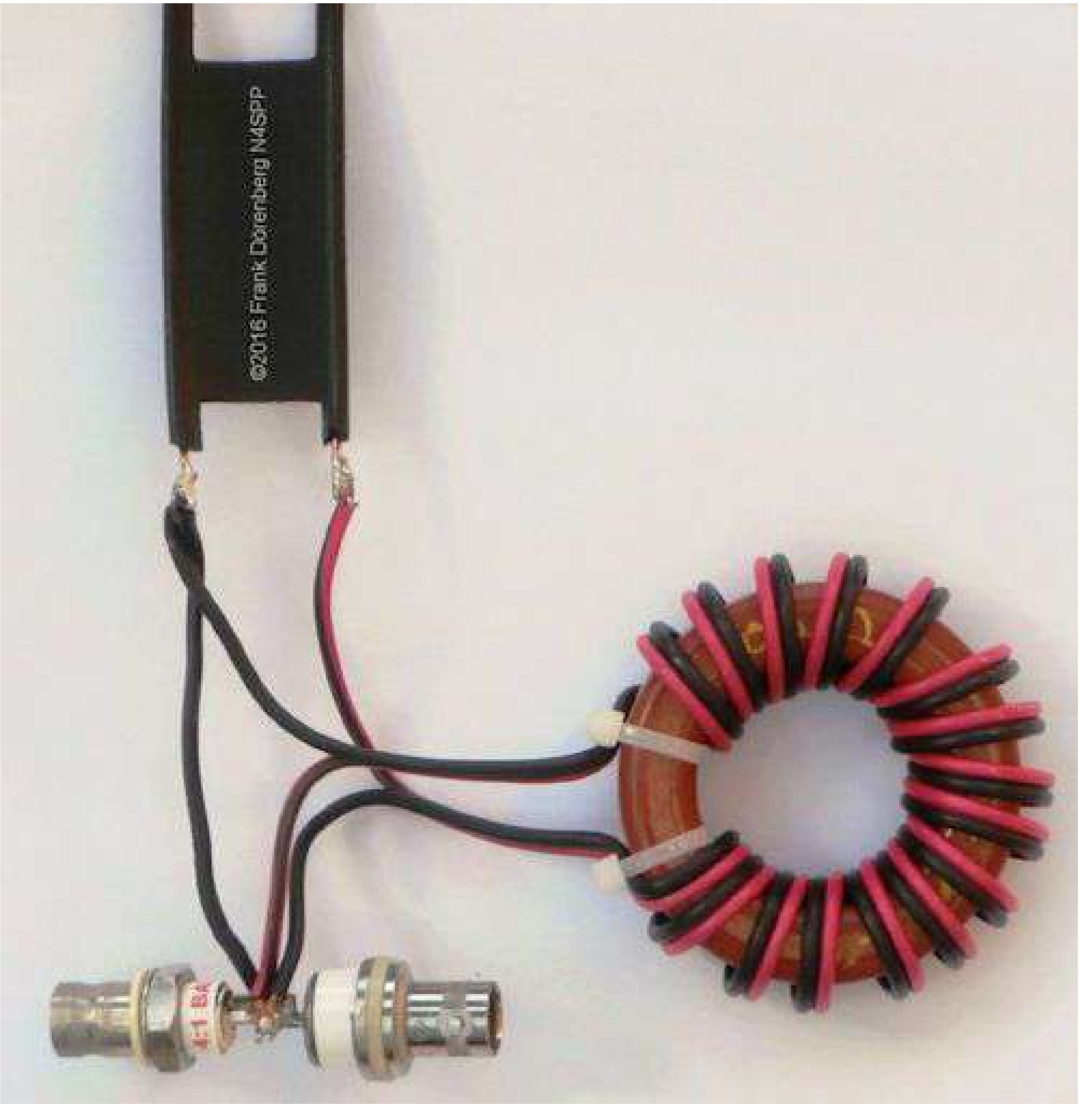

I6IBE
Choke RFI
toroide
cavo RG-58
5+5 spire
controfase
BOCCHETTONE
INGRESSO ANTENNA
SO-239

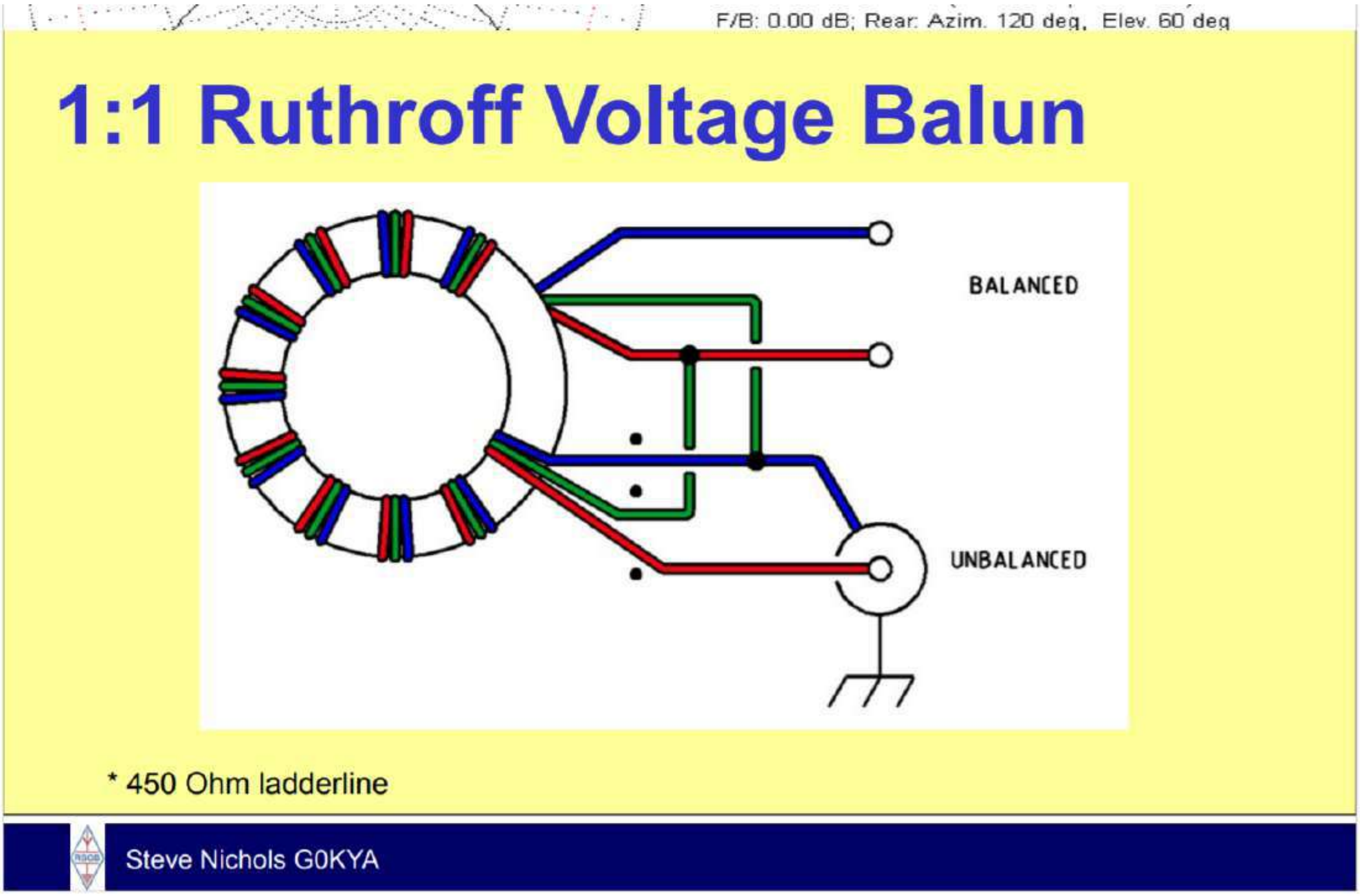
2. Insert metal electrodes and attach multimeter leads [copper (+), aluminum (-)] For measuring direct current voltage: set multimeter function switch to "DCV: 20" take a reading in volts DC. for measuring direct current: set multimeter function switch to "DCA: 20m" take a reading in milliamps (mA) DC.

Calculating Earth Battery Power (W = I * V)

EXAMPLE: A lawn battery in late summer (little rain) produces a 0.65V, 0.2mA current. A battery power calculation of 0.00013W (0.13mW).

Lawn battery (summer). INSET: Marsh mud battery. (Circles show position of electrodes.)

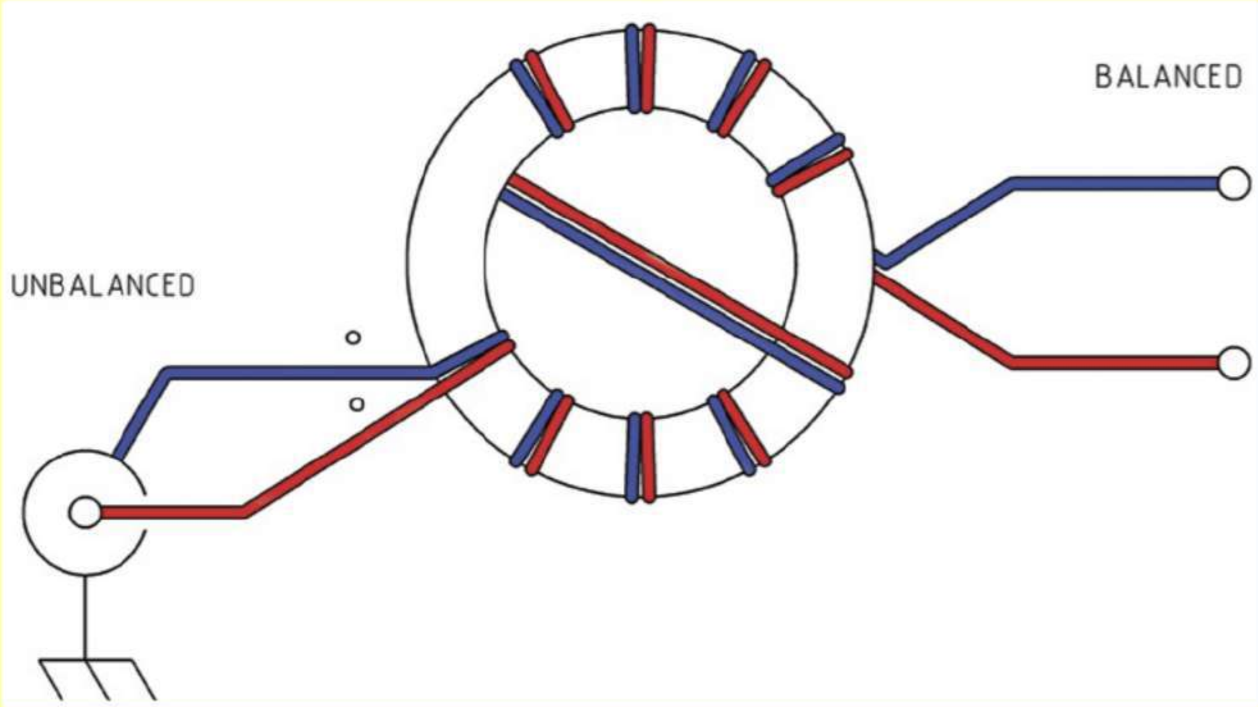

©2016 Frank Dorenberg N4SPP



The Ruthroff or voltage balun is another type. Voltage baluns balance the voltages. Current balance is considered to be superior to voltage balance. Voltage baluns should not be used in lines with high SWR. They have the narrowest impedance and frequency range of any balun type. Properly designed voltage baluns have low common mode impedance. Properly designed current baluns have high common mode impedance, and provide better balance. If you want to stop common mode currents flowing on your coax a current balun is a better choice. But in the Carolina Windom, which uses the vertical coax as a radiator you WANT common mode currents, so a Ruthroff voltage balun is better.

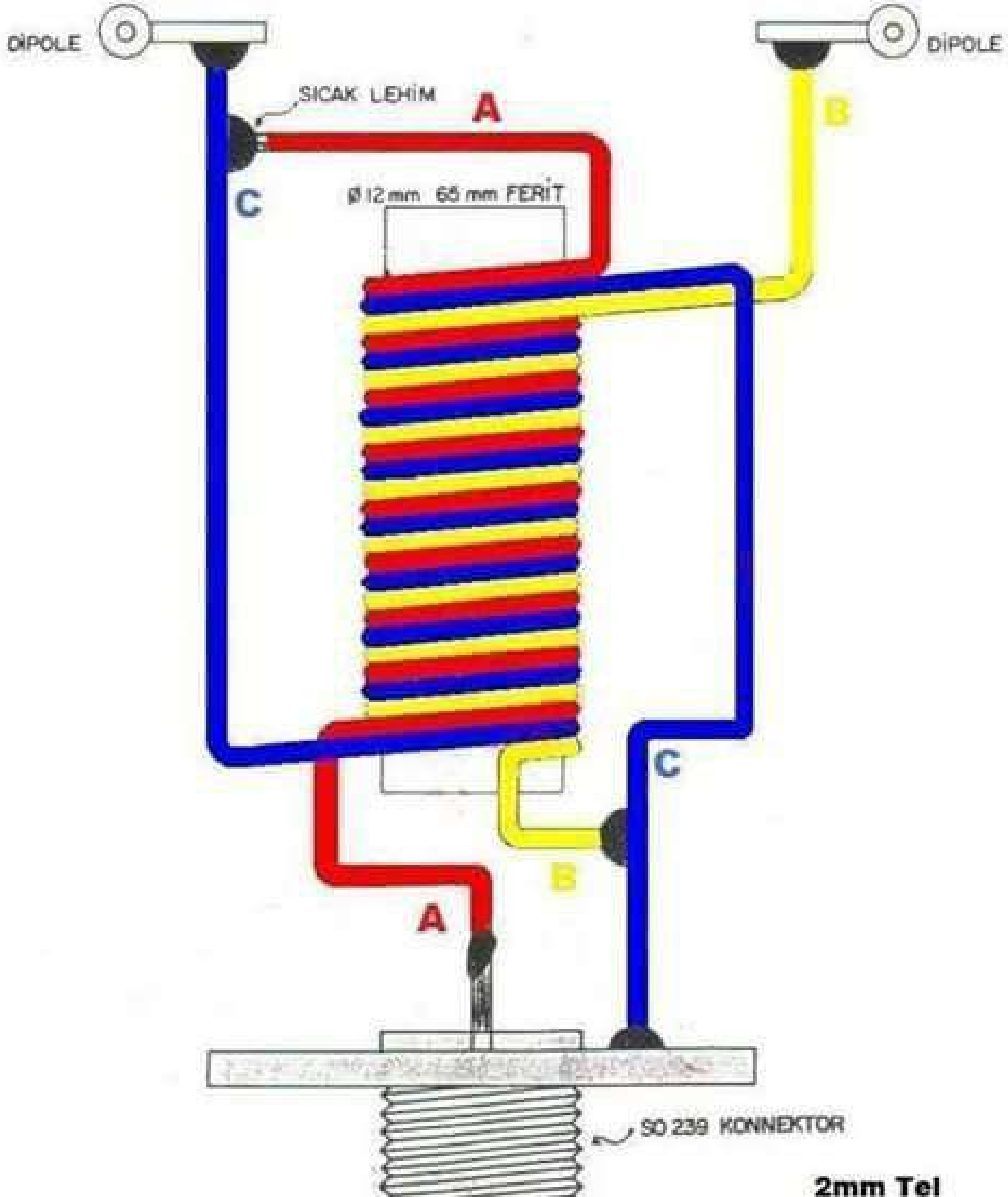
F/B: 0.00 dB; Rear: Azim. 120 deg, Elev. 60 deg

1:1 Guanella current balun



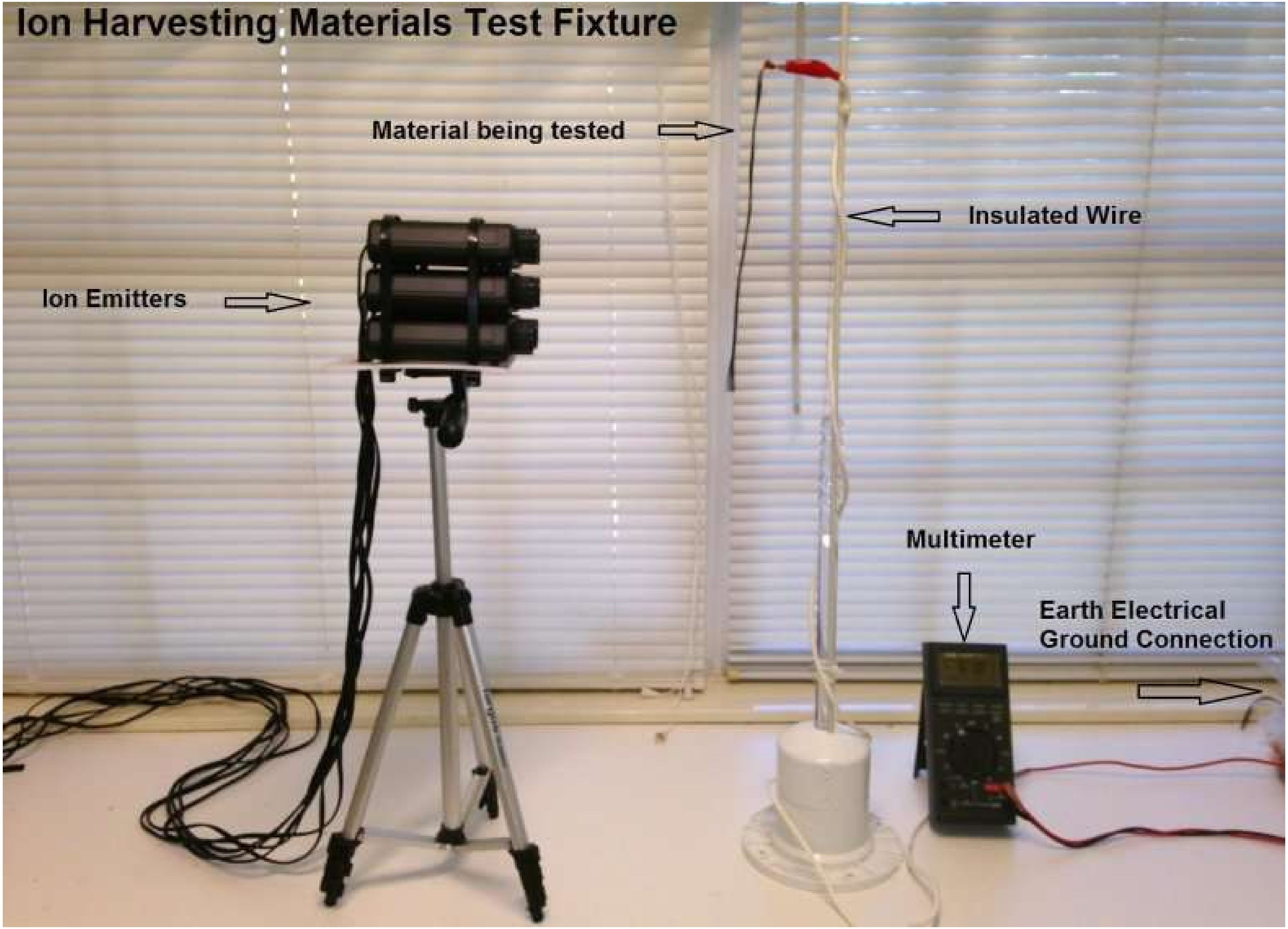
* 450 Ohm ladderline

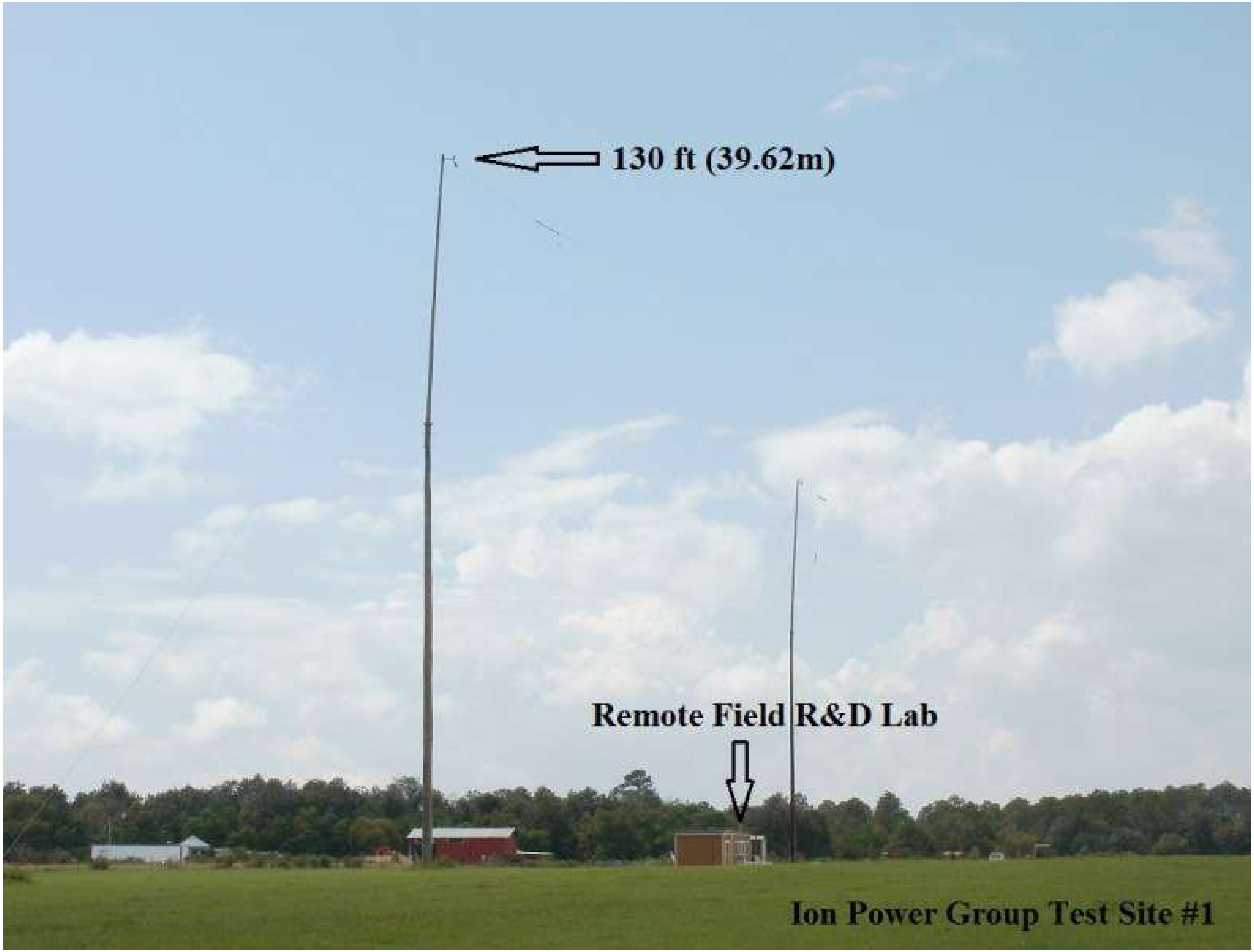
A Guanella or current balun is very common. Current baluns stop RF from coming back down the outside of the coax shield, and are so called that because they "force equal currents in each side of a dipole"



2mm Tel
8 Tur Sar

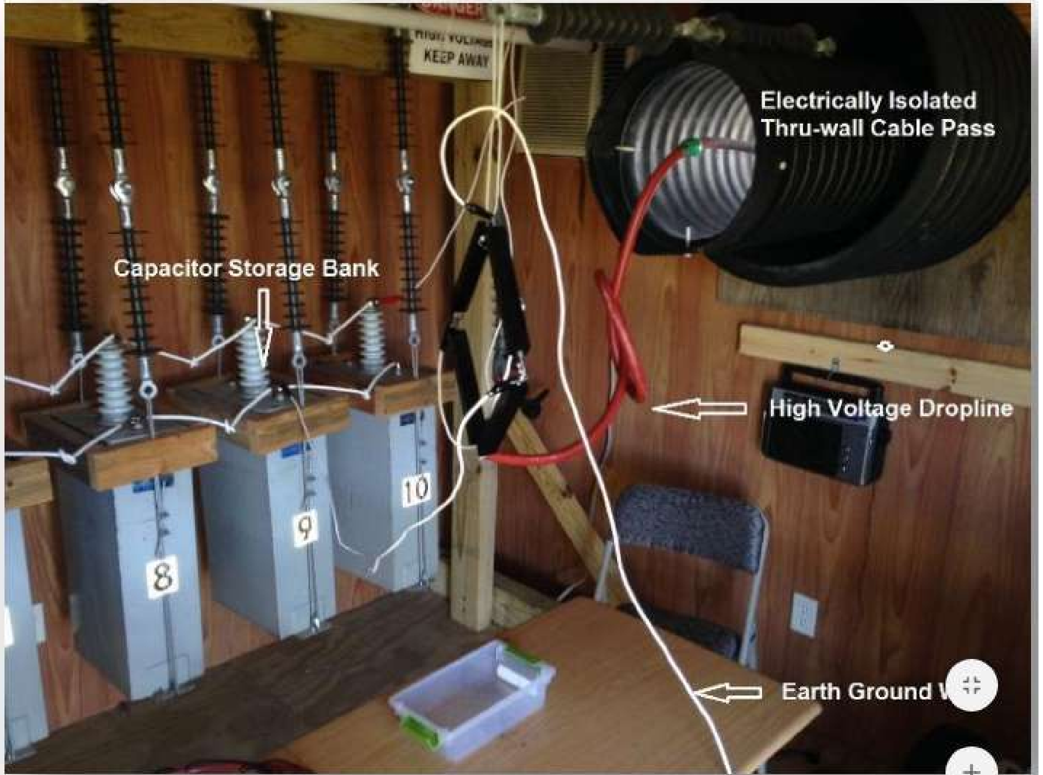

© Azega.com

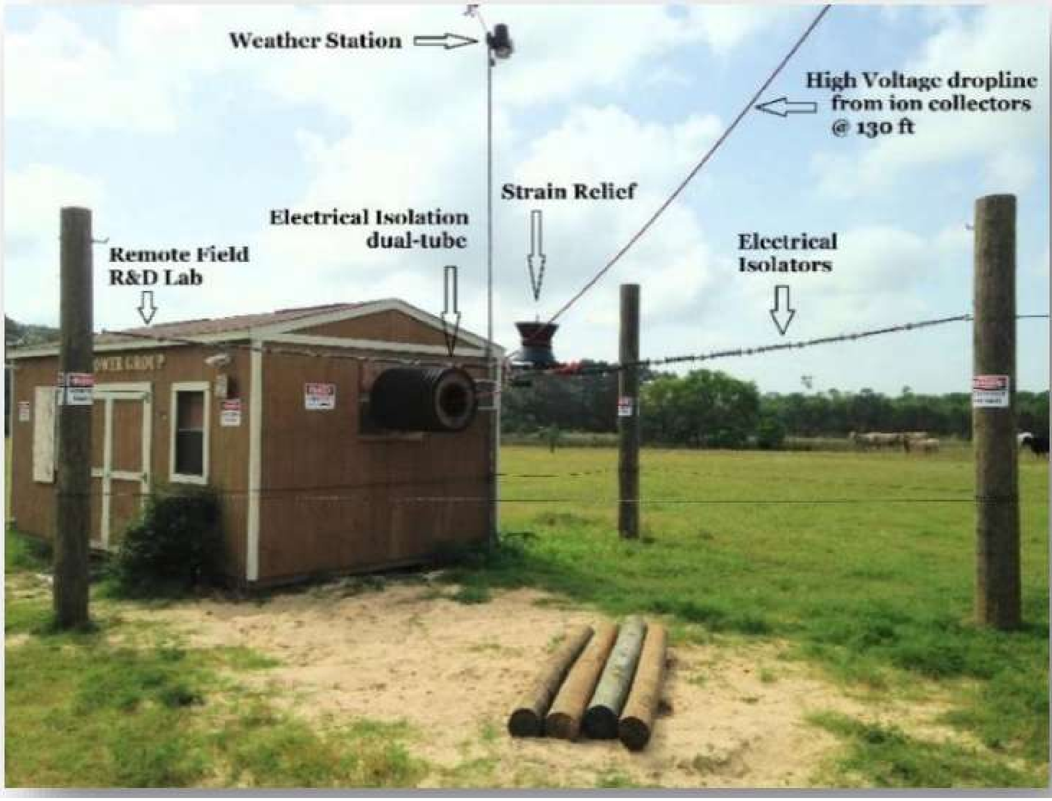

Ion Harvesting Materials Test Fixture
Material being tested
Insulated Wire
Ion Emitters
Multimeter
Earth Electrical
Ground Connection

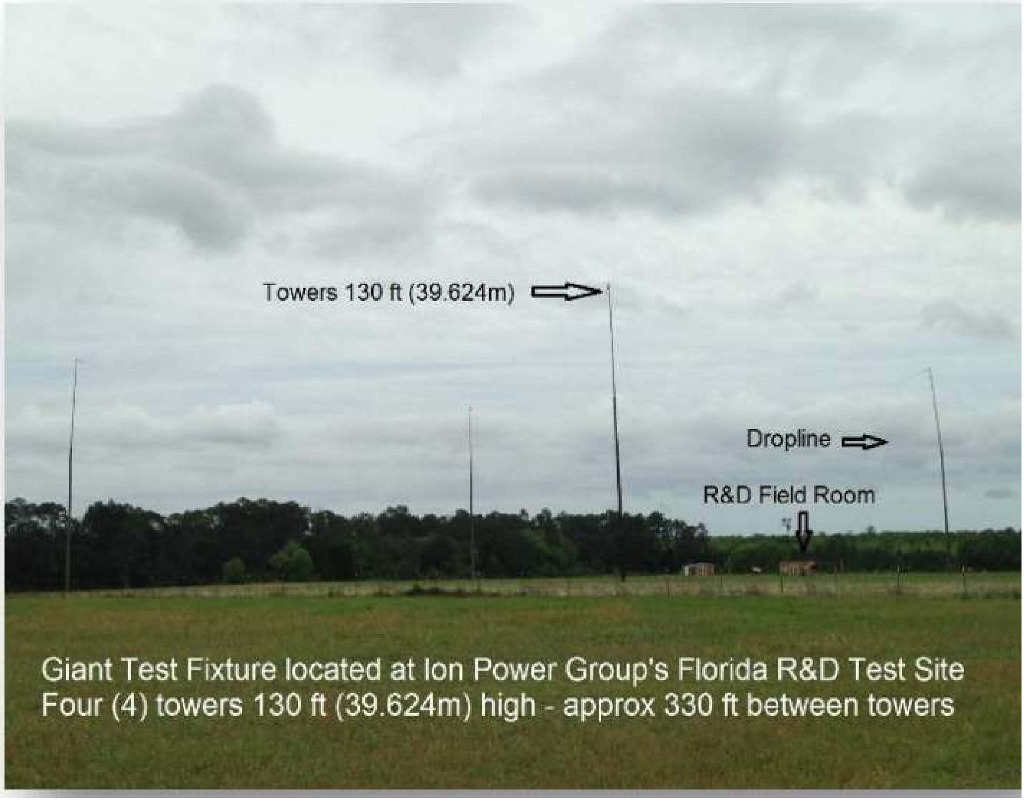

130 ft (39.62m)
Remote Field R&D Lab
Ion Power Group Test Site #1

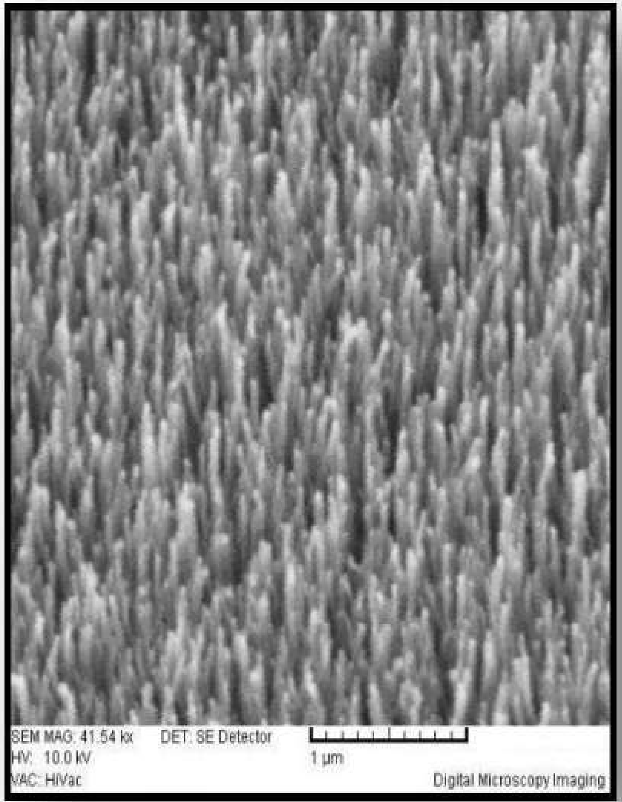

DANGER
HIGH VOLTAGE
KEEP AWAY
1
2
3
4
5
6
7
8
9
10


DANGER
HIGH VOLTAGE
KEEP AWAY
1
2
3
4
5
6
7
8
9
10
Ion Harvesting Electrical Storage
(10) General Electric capacitors in parallel
rated at 41.kV totaling 75.uf capacity


KEEP AWAY
Electrically Isolated
Thru-wall Cable Pass
Capacitor Storage Bank
High Voltage Dropline
Earth Ground
8
9
10


Weather Station
High Voltage dropline
from ion collectors
@ 130 ft
Strain Relief
Electrical Isolation
dual-tube
Remote Field
R&D Lab
Electrical
Isolators

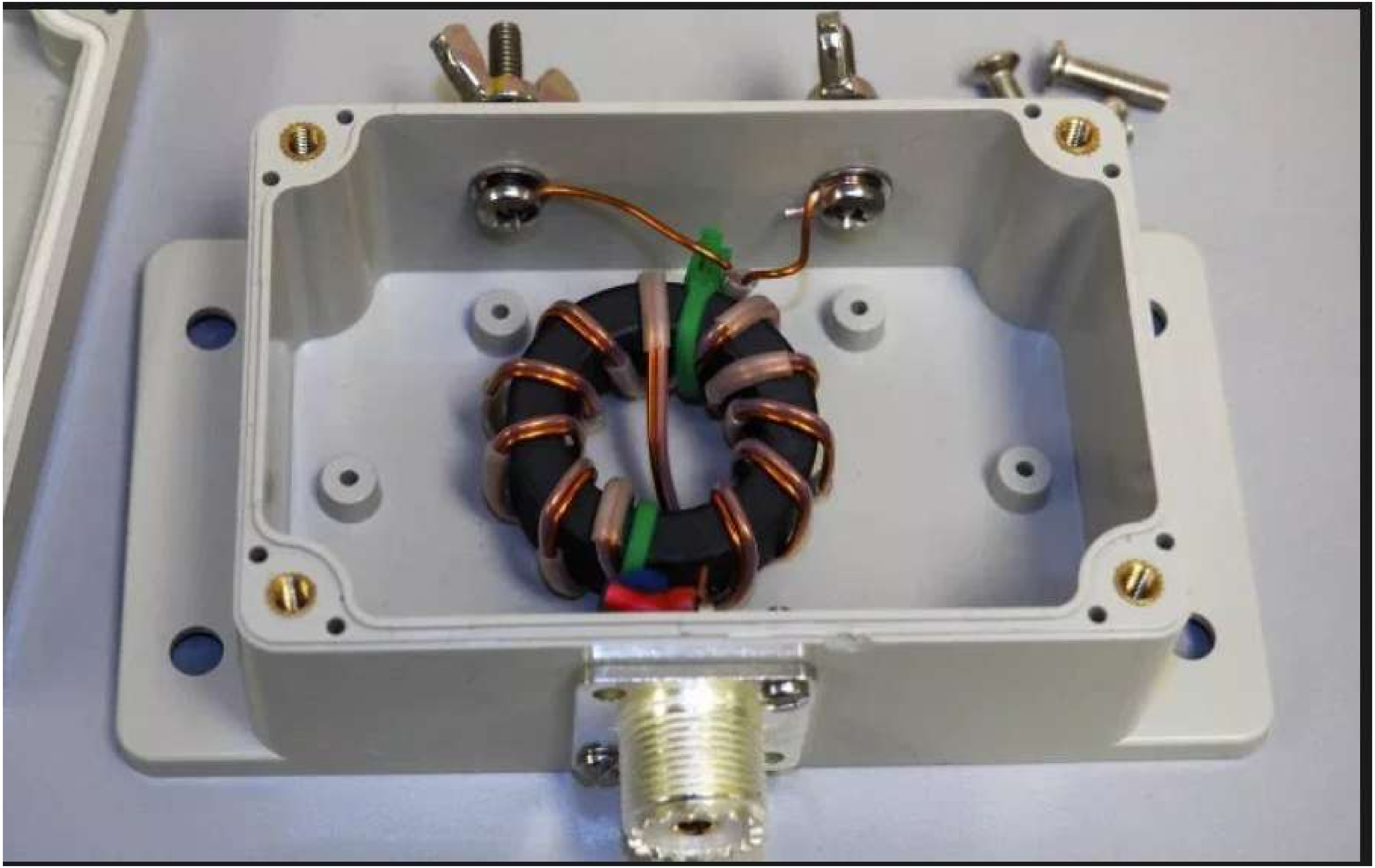

Towers 130 ft (39.624m)
Dropline
R&D Field Room
Giant Test Fixture located at Ion Power Group's Florida R&D Test Site
Four (4) towers 130 ft (39.624m) high - approx 330 ft between towers

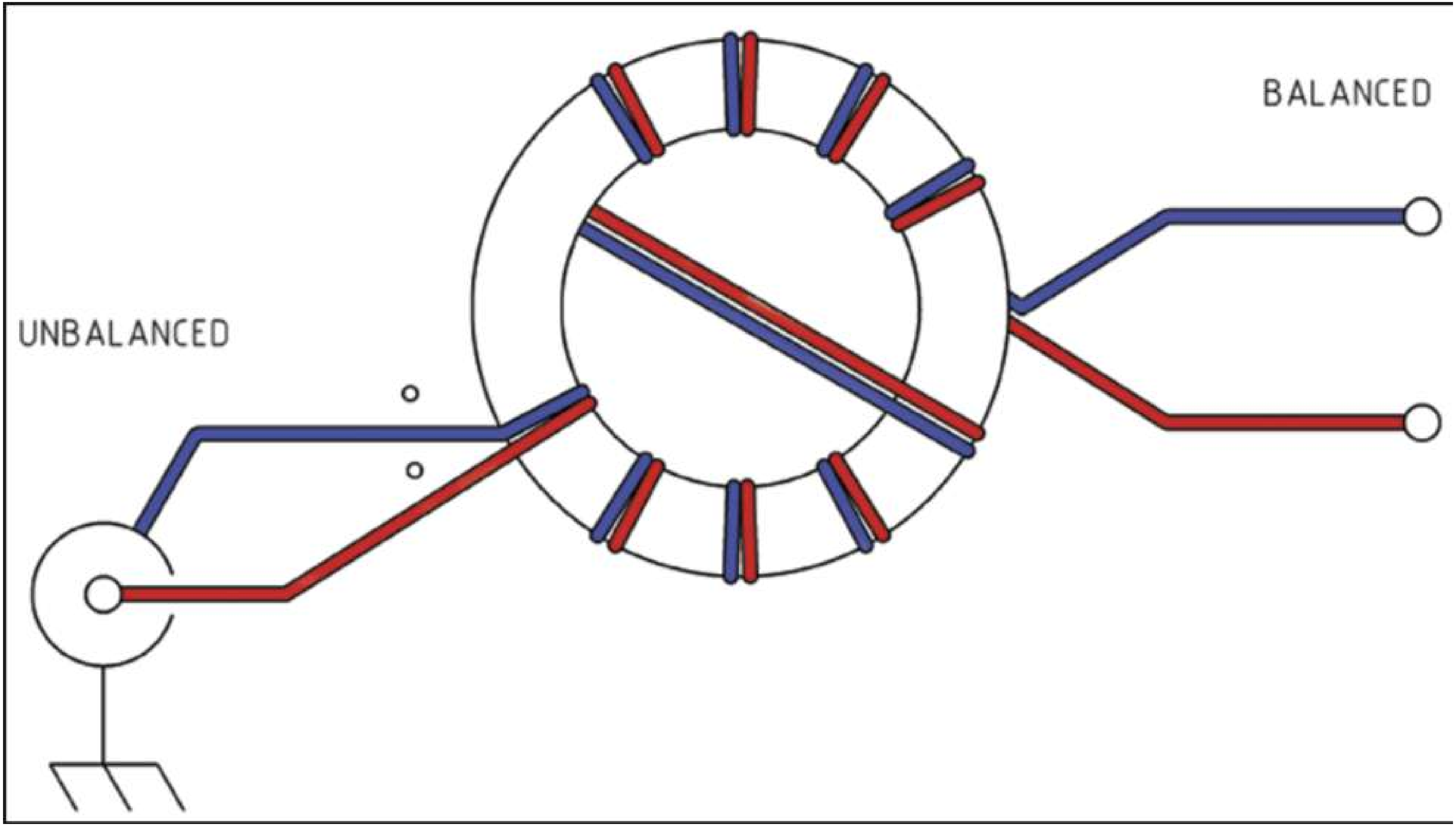


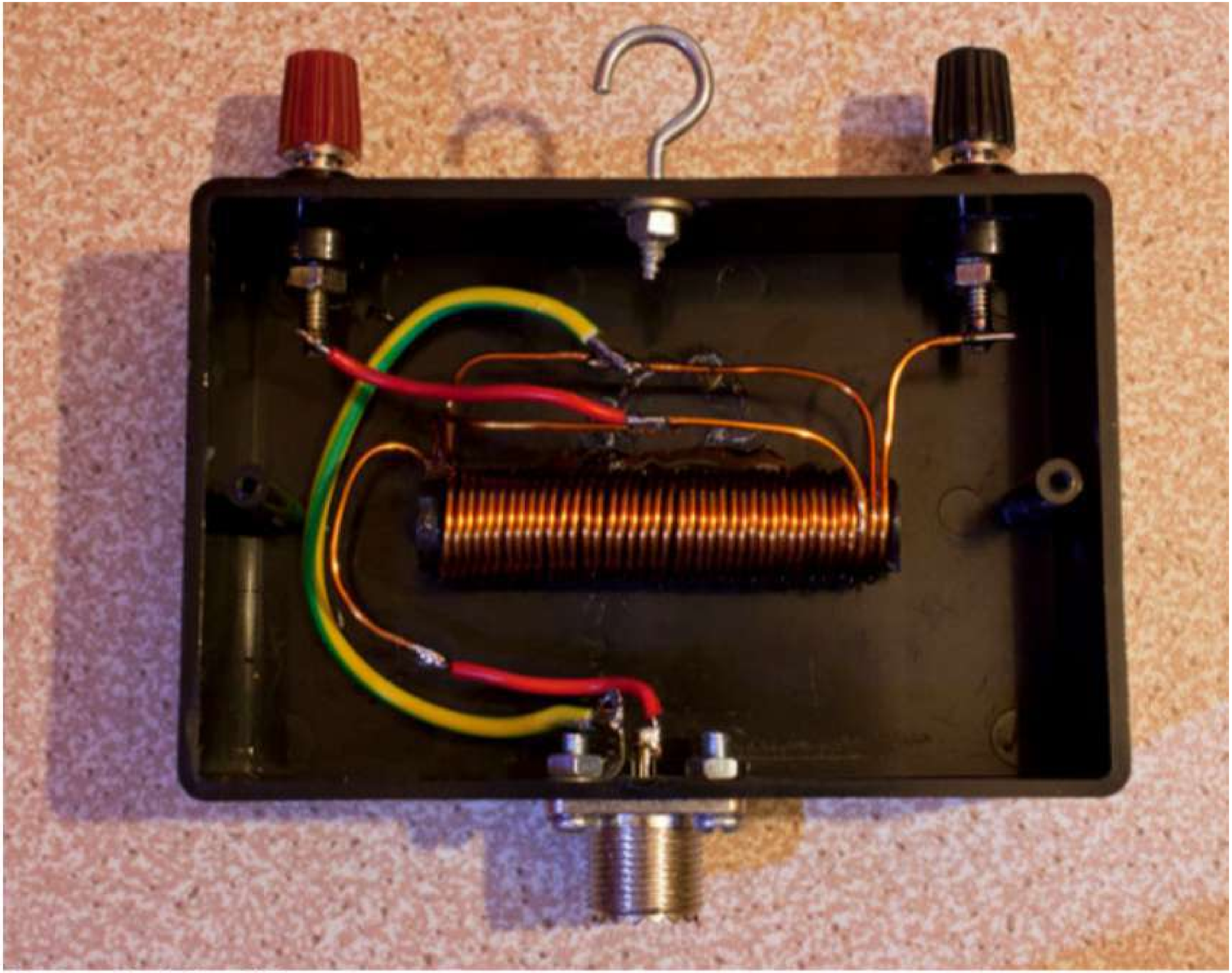
Ion Power Group's new method of coupling to atmospheric electricity is vastly different from all previous techniques by virtue of our patented breakthrough revealing that carbon nanomaterials such as **Graphite (and Graphene) microscopic shown at left, macroscopic shown at right are significantly more effective at coupling to airborne charge carriers (ions) than metal.** The use of carbon based nanomaterials distinguishes Ion Power Group from all other researchers.

I cut a hole in the side of the balun then cut the end off a piece of coax cable I had and soldered it to the contacts of the coax connection.

EXAMPLE: W1JR (Reisert) Cross-Winding Method

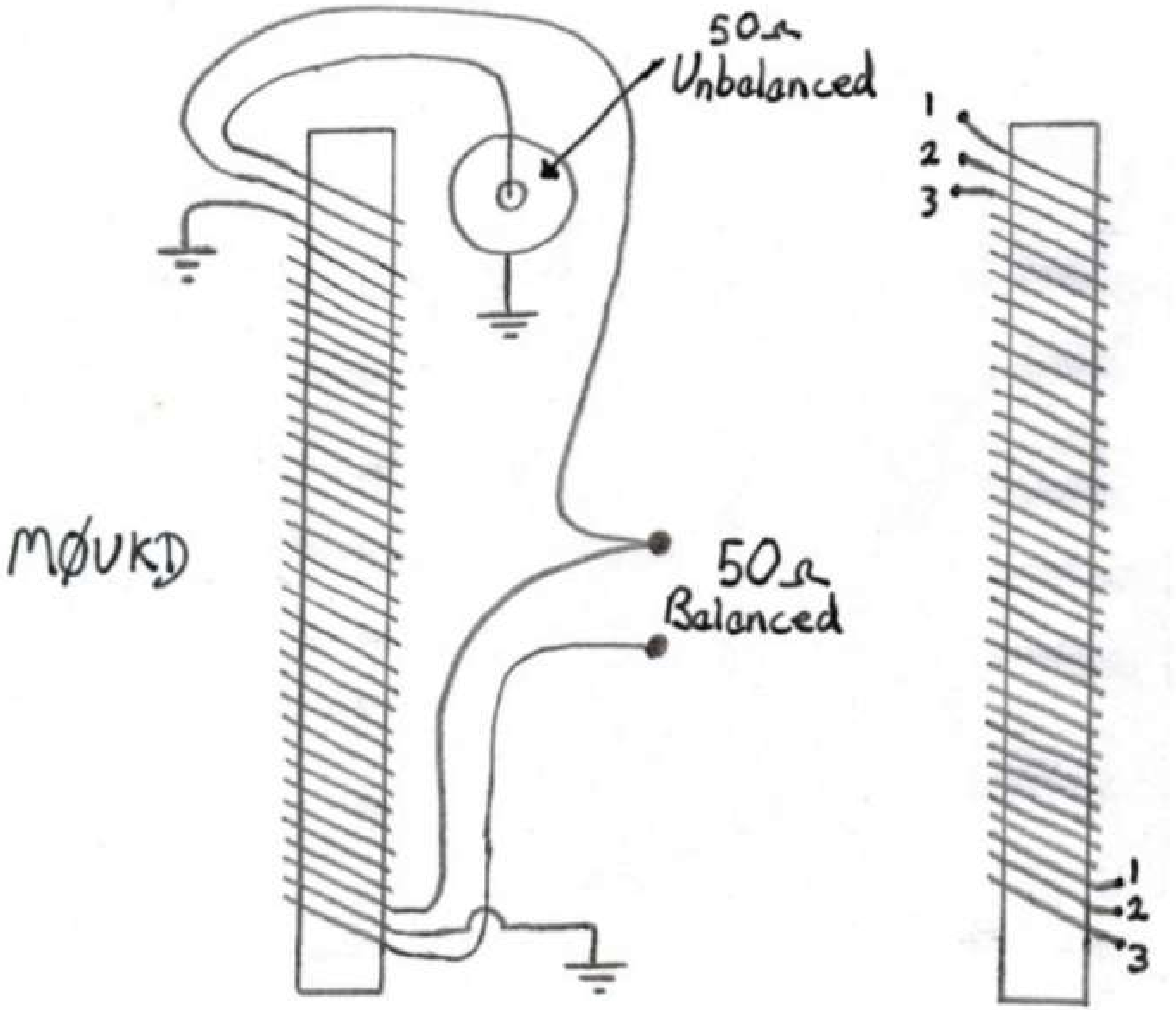



BALANCED
UNBALANCED



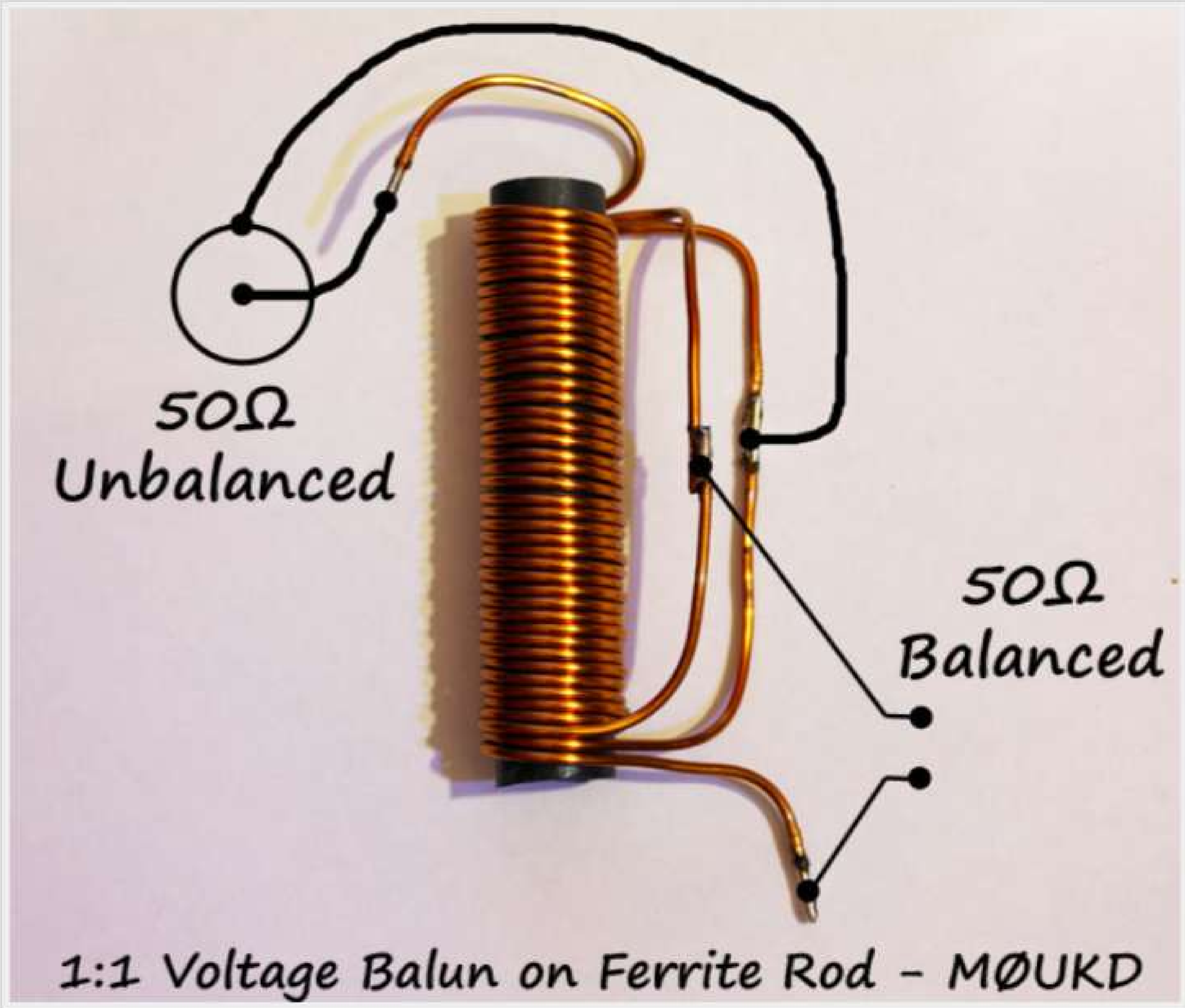
Balun 1: 1 for HF

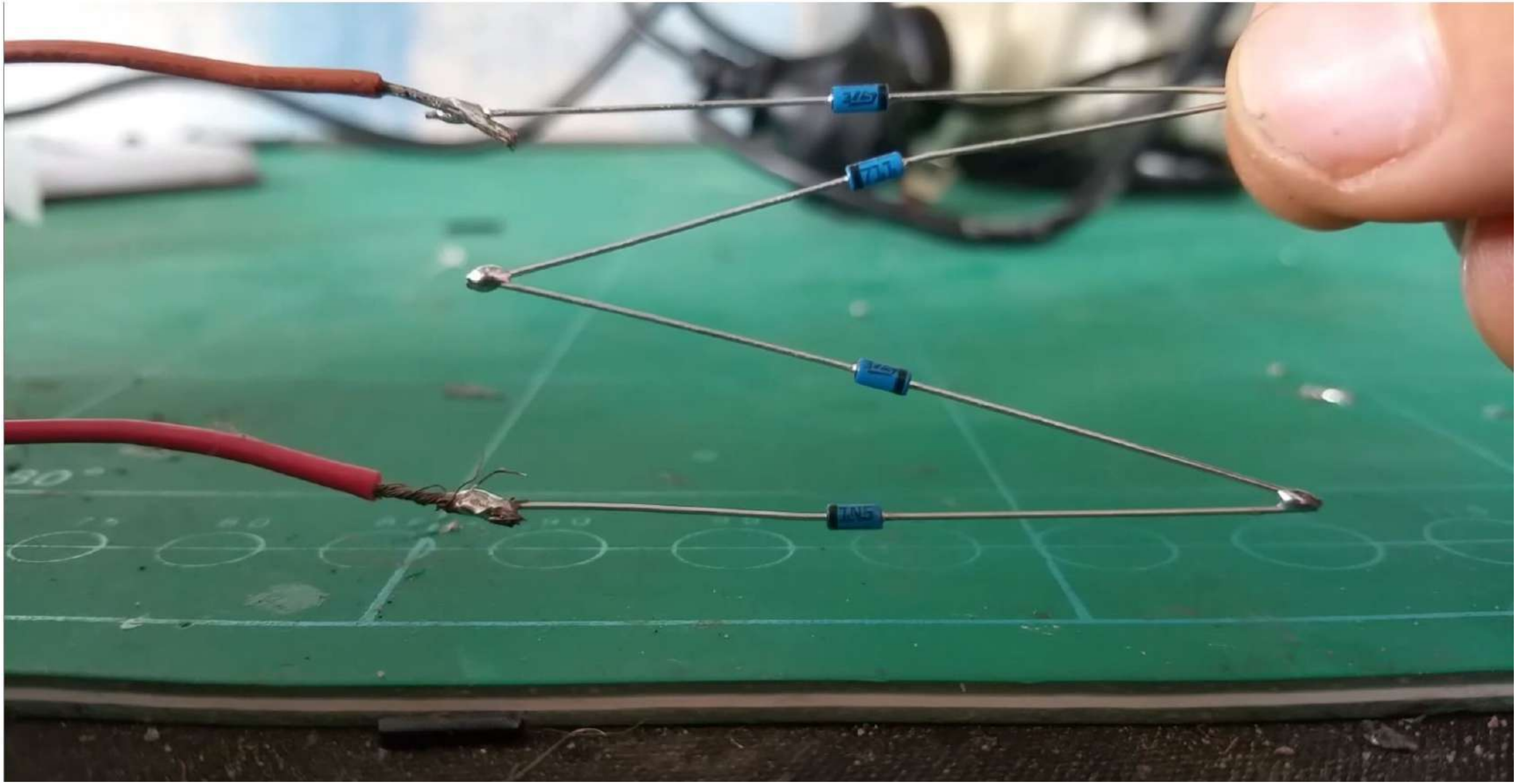
1:1 Voltage balun ("Ruthroff")

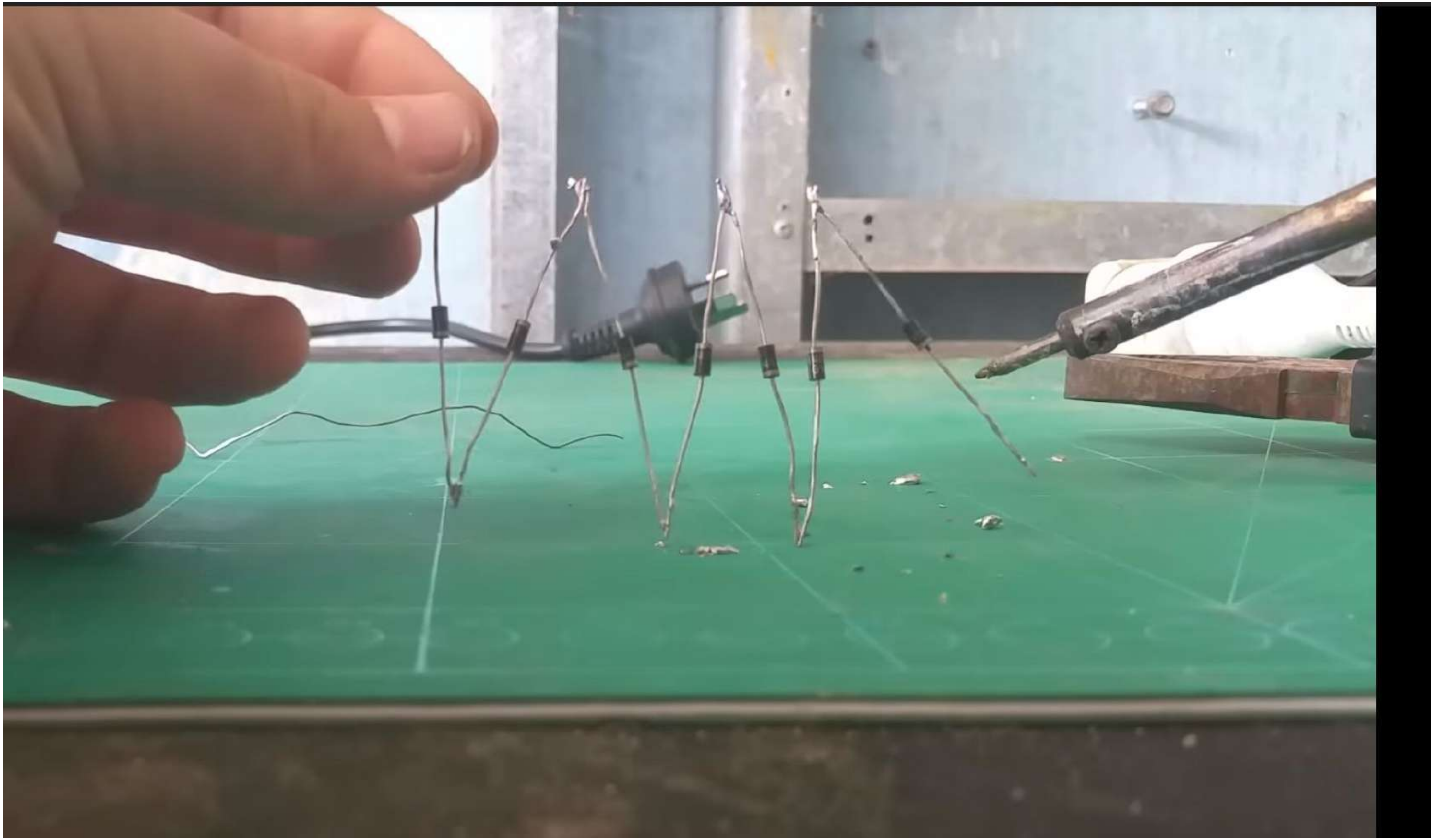


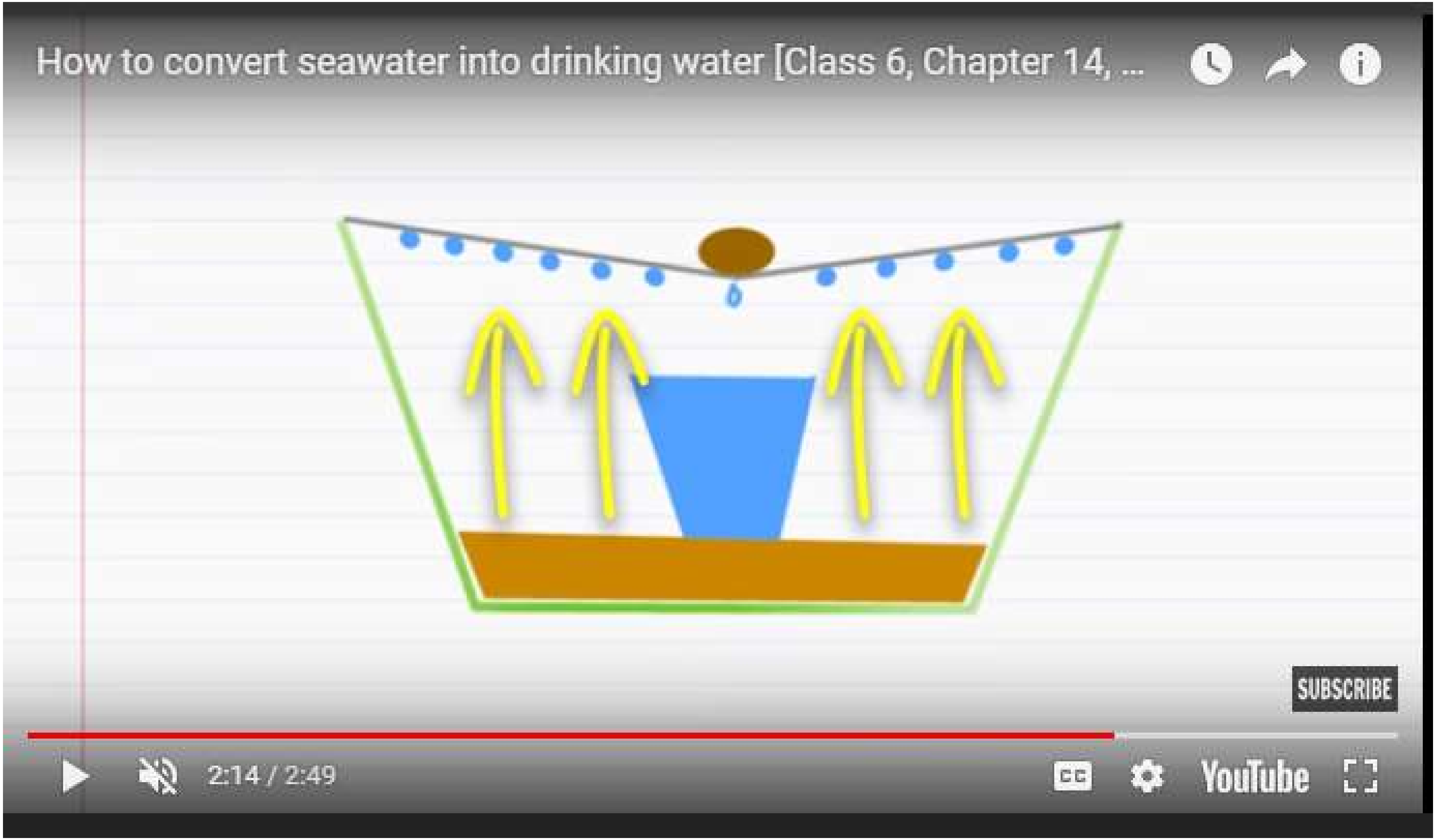
10 - 15 trifilar turns on ferrite rod.

1:1 ferrite rod voltage balun





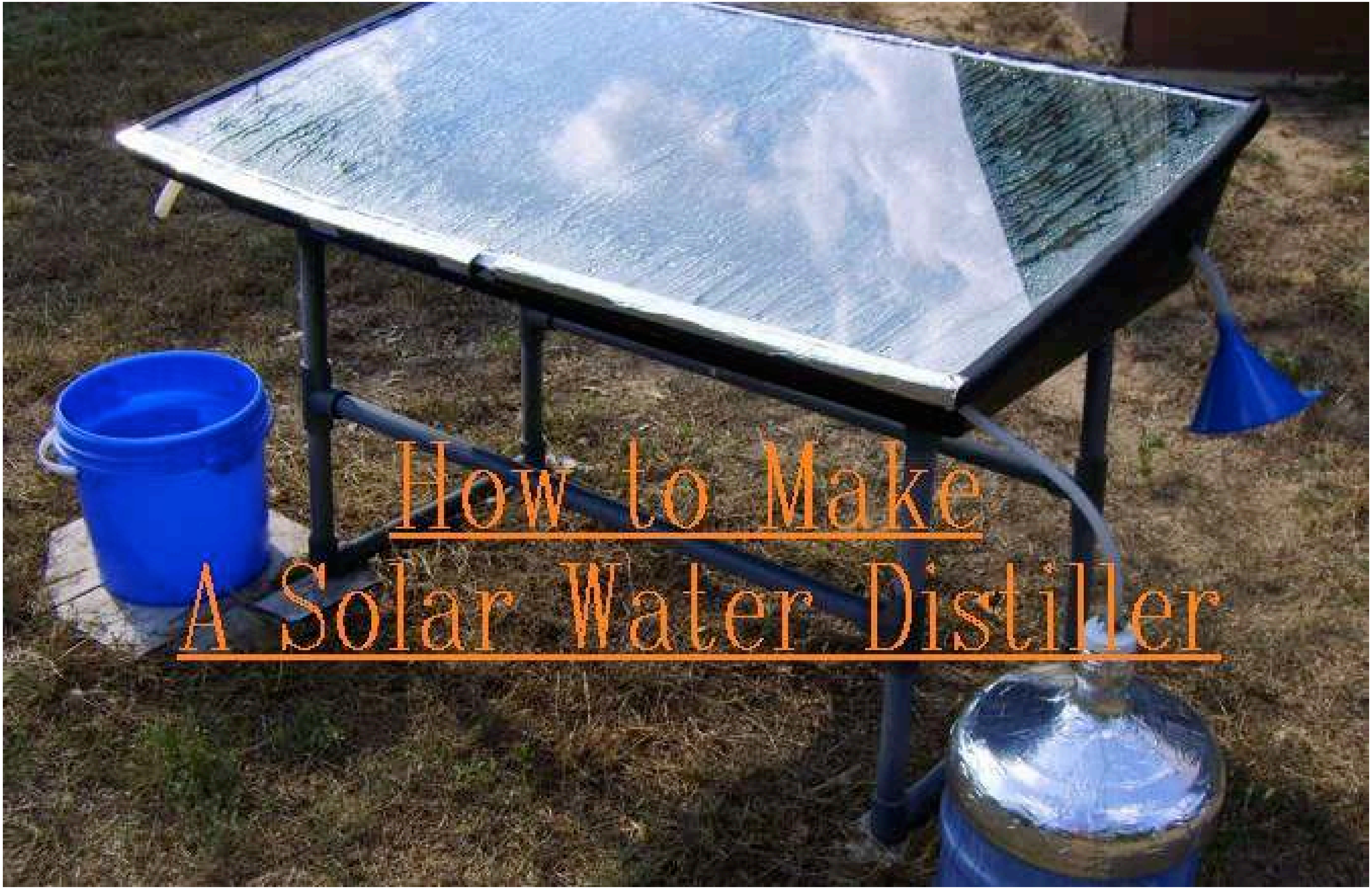


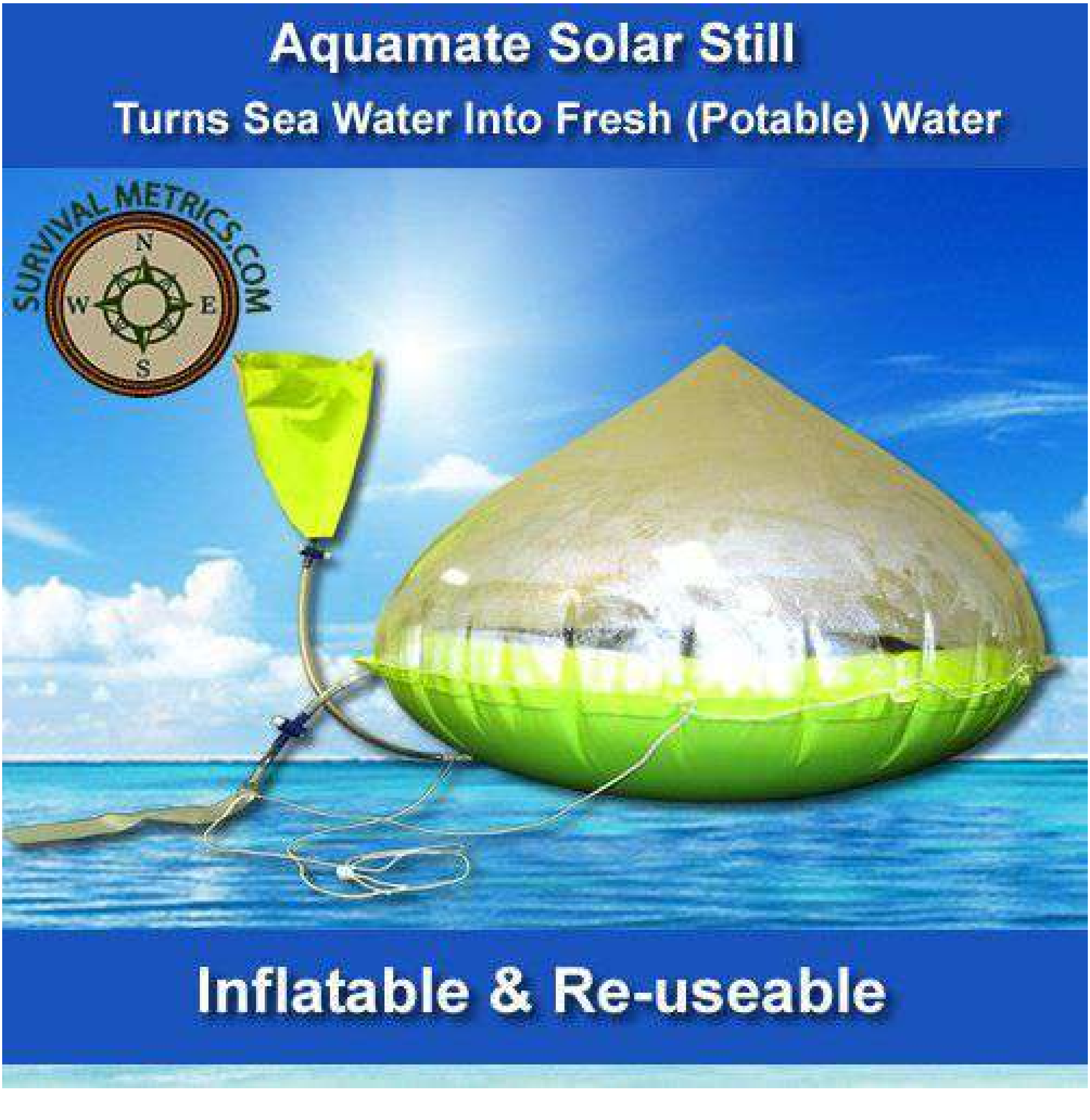

How to convert seawater into drinking water [Class 6, Chapter 14, ...
SUBSCRIBE
2:14 / 2:49
YouTube


How to convert seawater into drinking water [Class 6, Chapter 14, ...
SUBSCRIBE
1:09 / 2:49
YouTube


Emergency DIY Water Distillation for Survival Bug-Out Bag
Three 1/2" Cop El 45 Deg
Wet Rag
1/2" x 22" Cop
Stainless
Steel Funnel
Dirty/Salt Water
Clean/Fresh Water
2:59 / 3:27
YouTube

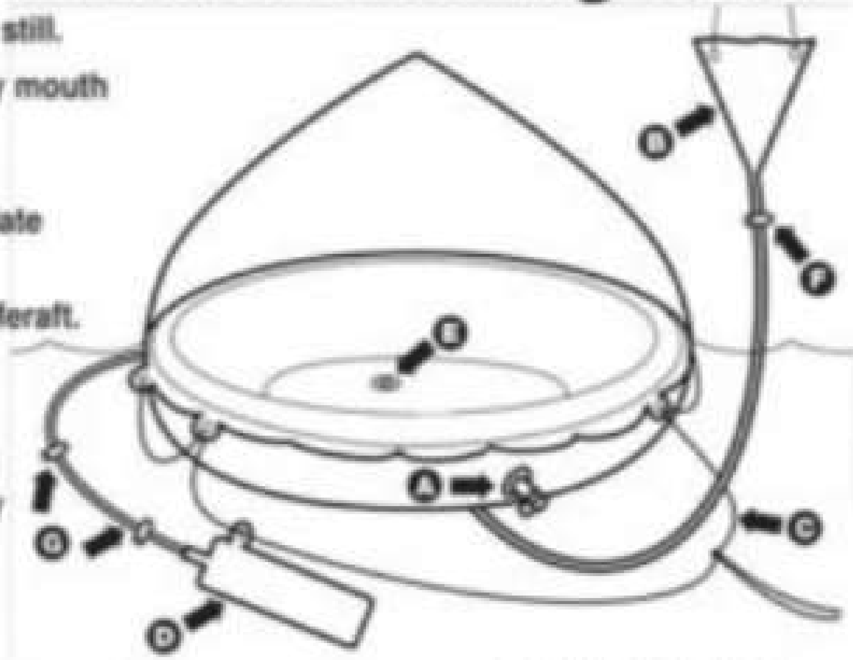

Solar Water Distilling
Simple Survival Water Distilling


How to Make
A Solar Water Distiller


Aquamate Solar Still
Turns Sea Water Into Fresh (Potable) Water
SURVIVALMETRICS.COM
N
W
E
S
Inflatable & Re-useable

Solar Still

Turns sea water or impure water into drinking water



1. Remove from pack and retain pack to top up salt water in still.
2. Lay out Solar Still and inflate valve A on floatation ring by mouth or by liferaft or dinghy pump.
3. Inflate clear dome to obtain shape using valve E in base. Do not over inflate. It may be necessary to manually regulate dome pressure during high temperatures.
4. Attach tapered bag B and attachment cord C to boat or liferaft.
5. Pour 5 litres of sea water into tapered bag B using pack which holds 5 litres (approx). Close valve F after filling.
6. Ensure both valves G are open in reservoir feed tube and drinkable water will start to collect in reservoir D. Air may need to be squeezed out to assist collection of water.
7. Ensure the Solar Still is kept in direct sunlight whenever possible.
8. Re-fill Solar Still and inflate/deflate dome as required.
9. Daily – Agitate Solar Still to dampen fabric.
10. To drain unwanted water open valve E in base.
11. Shelter Solar Still during bad weather.

IMPORTANT
IF INNER BLACK MATERIAL SALTS UP FILL WITH SEA WATER AND AGITATE TO CLEAR SALT CRYSTALS AND DRAIN AWAY. PROCESS DRINKING WATER AS INSTRUCTIONS UNTIL SALT IS NO LONGER PRESENT. IN NO CIRCUMSTANCES DRINK WATER THAT TASTES OF SALT.

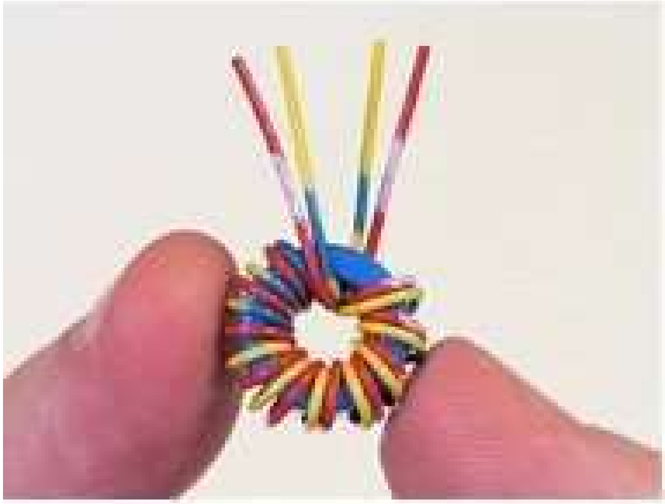
AQUAMATE PRODUCTS

NATO Stock No. 4610-66-144-2646

P.O. Box 6032 Dunmow CM6 3AS U.K. Tel: +44 (0)1371 830 216 Fax: 831 733 e-mail: aquamatesales@aol.com

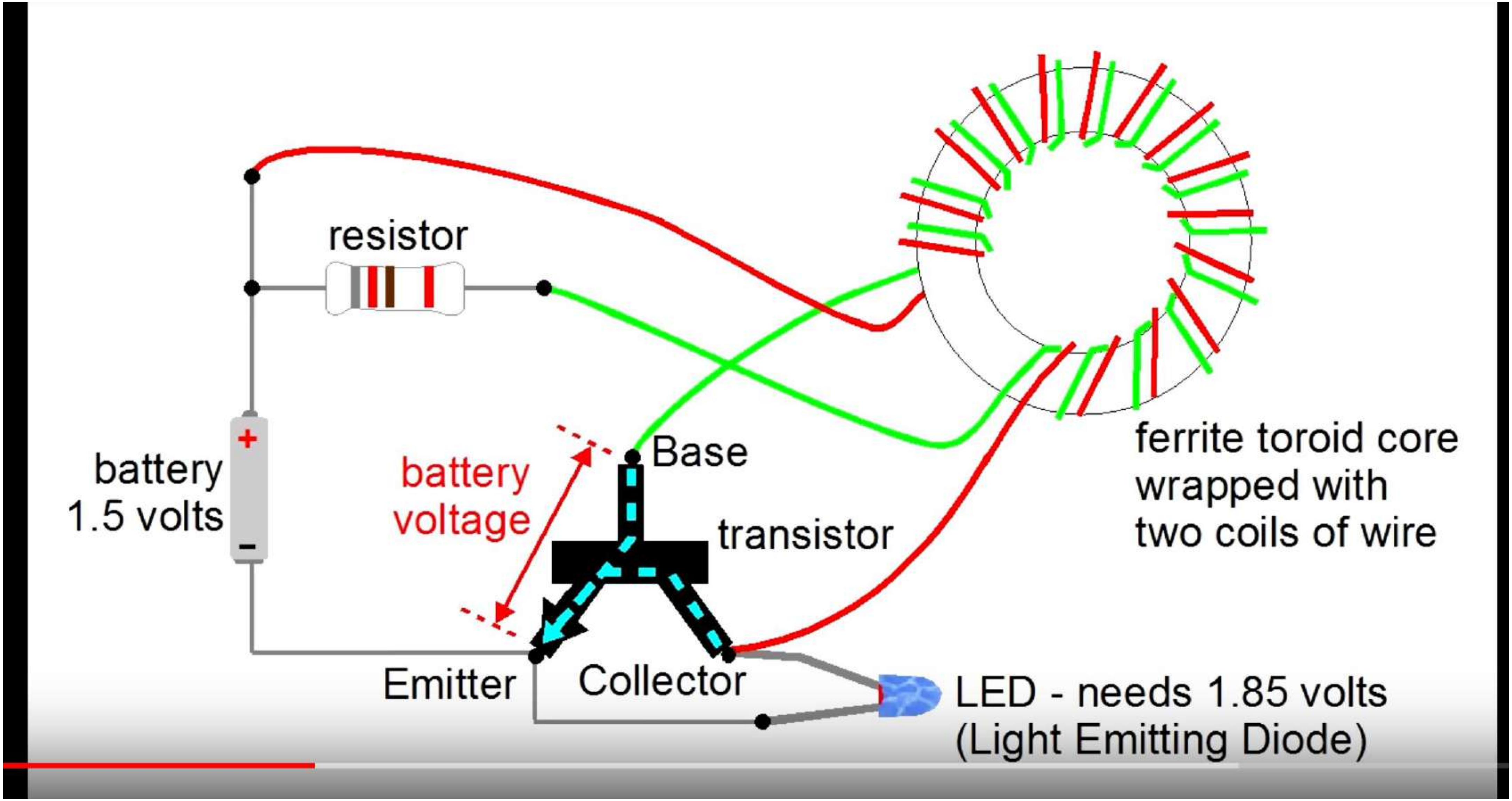
Keeping the two wires together, make a few more turns through the center.

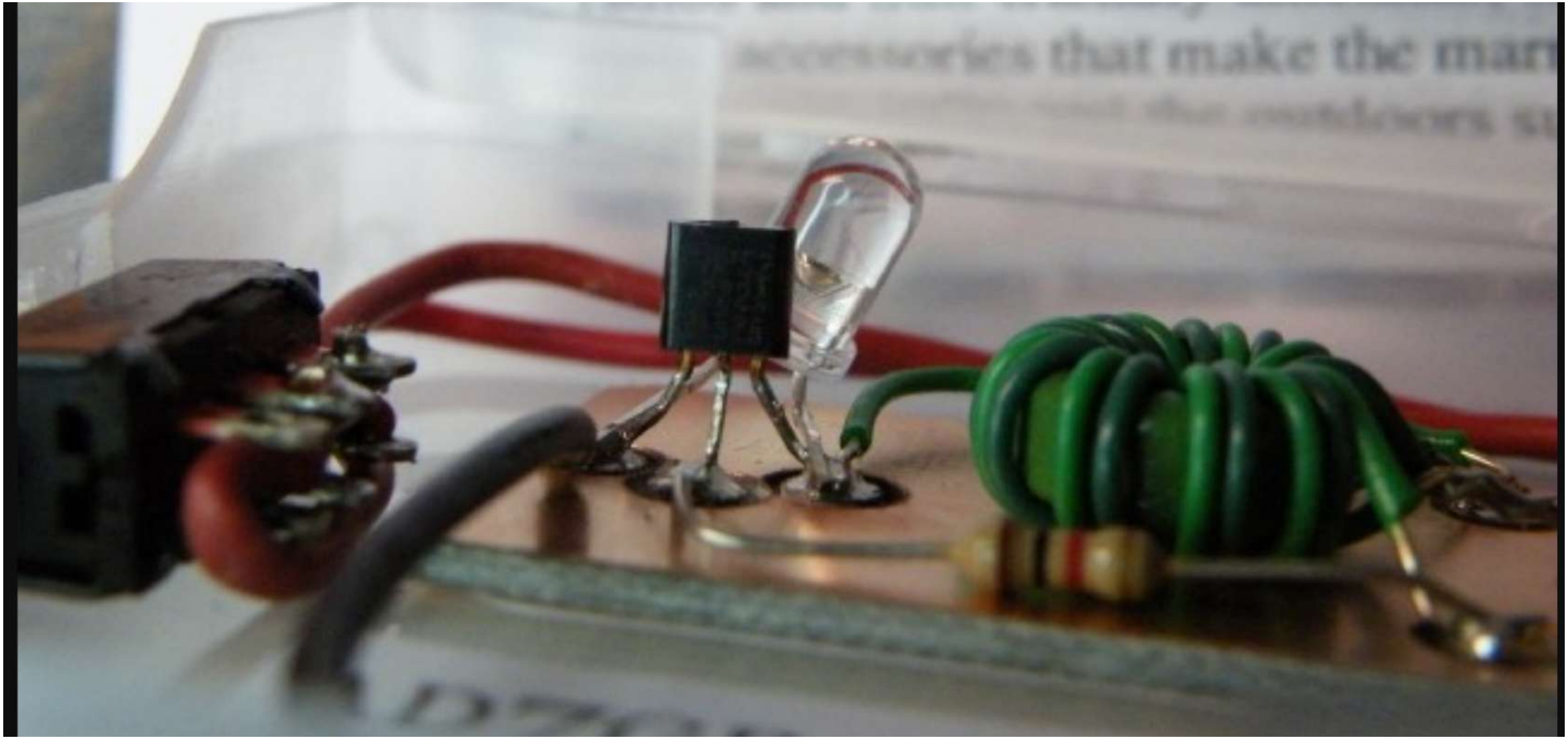
Keep winding until you fit as many turns as will fit in a single layer around the toroid, typically 7-10 turns with thin insulated wire.

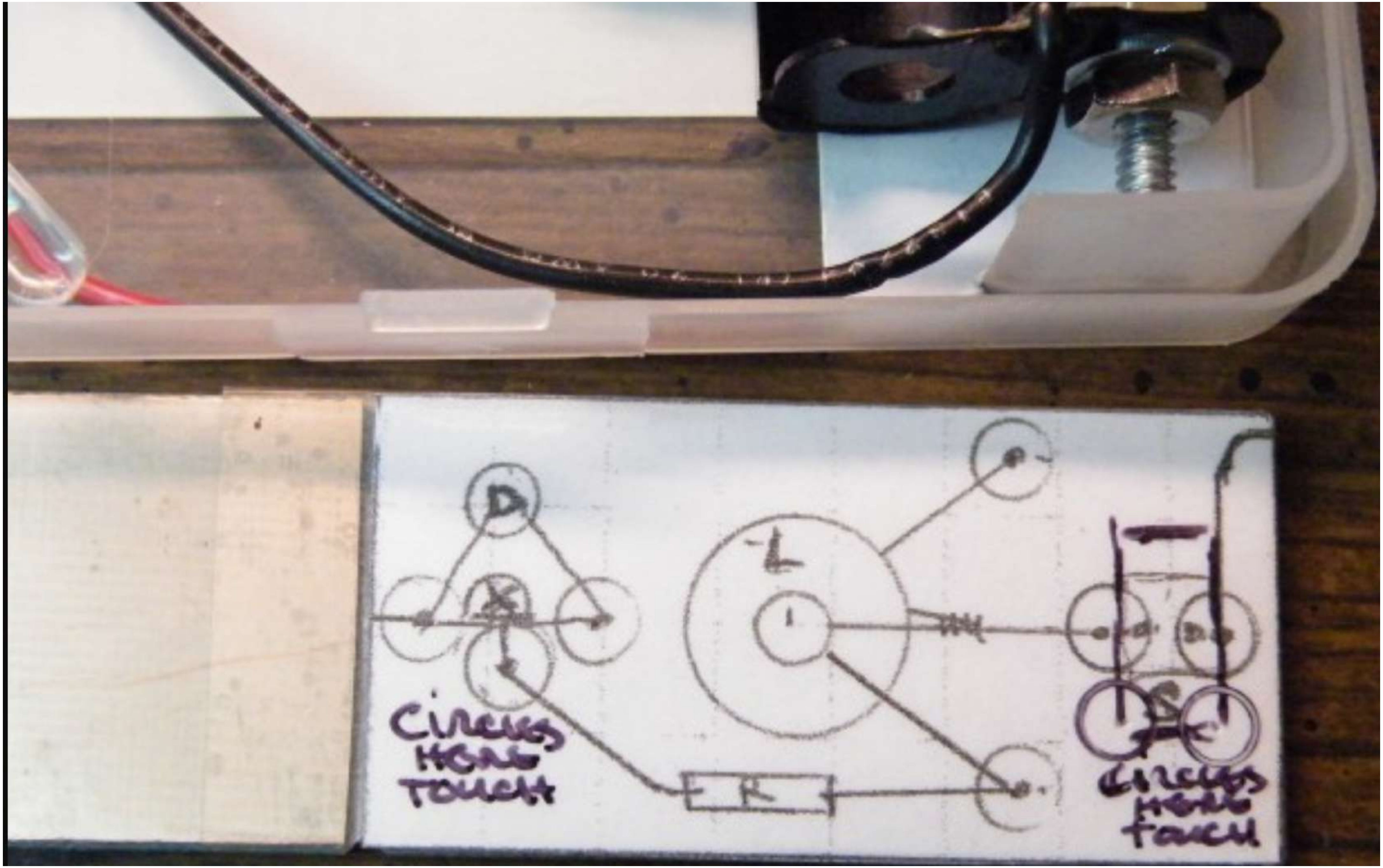


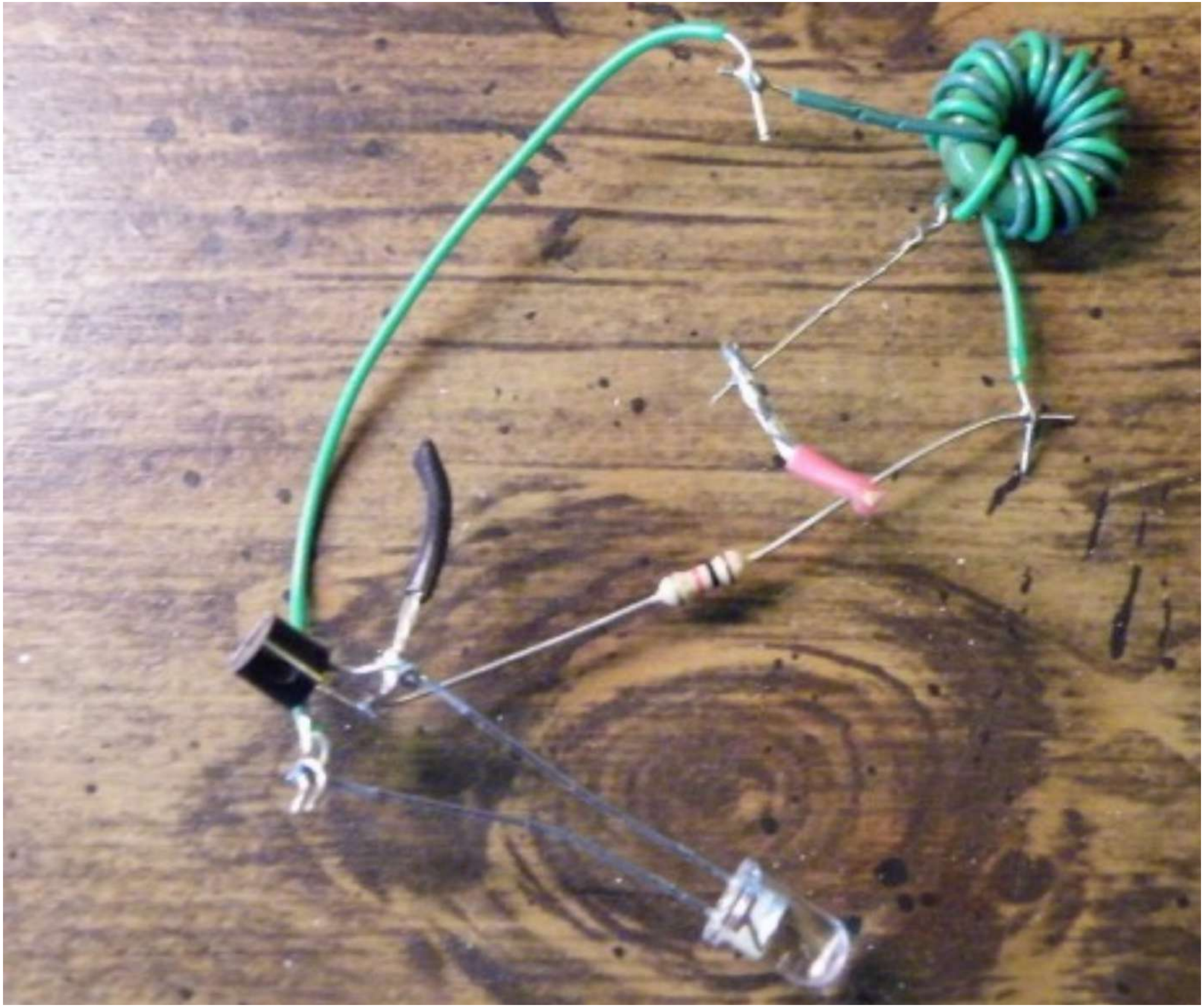
Clip the wire leads down. Note that we have two pairs of wires: one coming out the front, and one coming out the back.

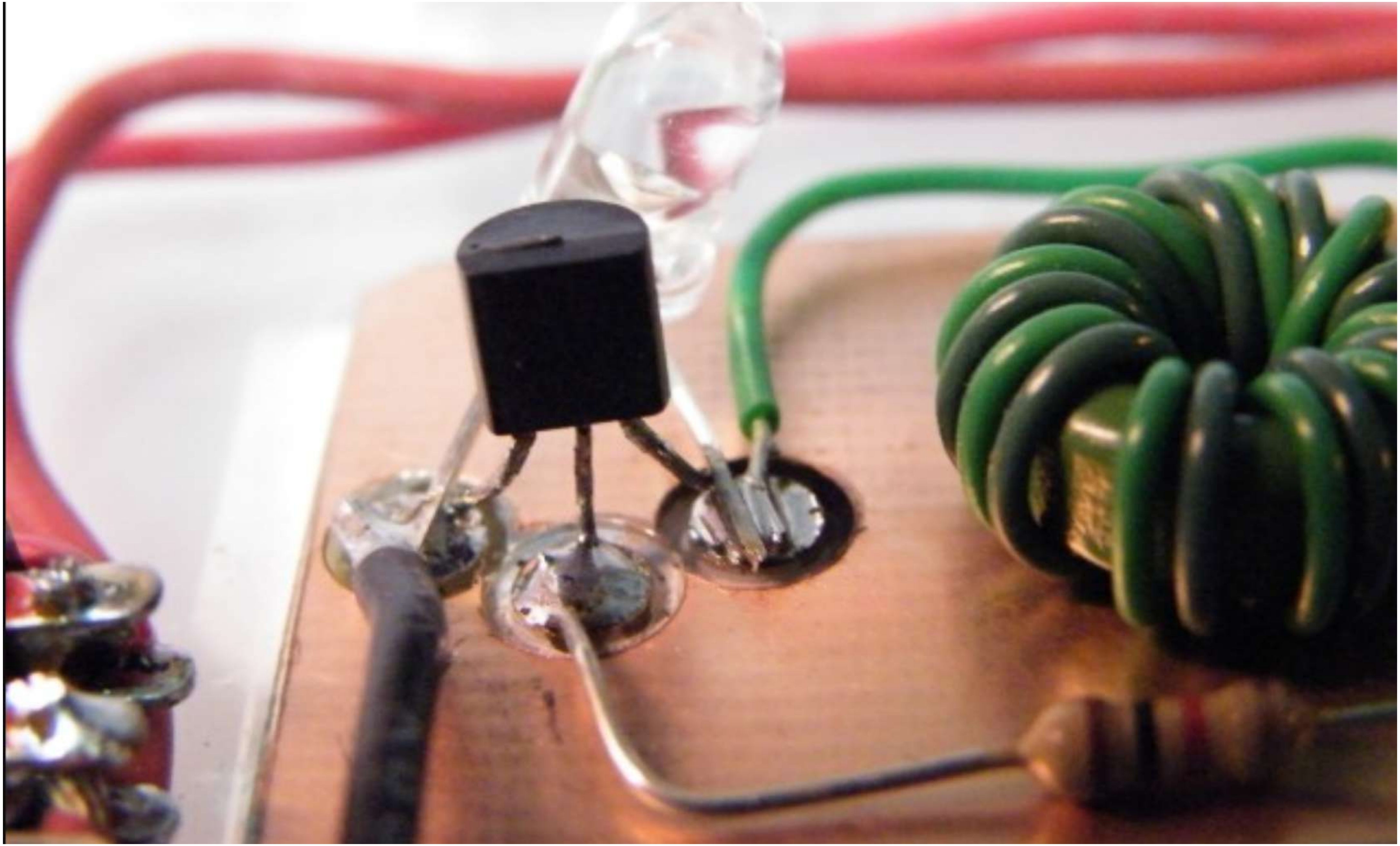
Strip the wire ends. Take one wire from each pair *of different color* and attach them together.


resistor
battery
1.5 volts
+
-
battery
voltage
Base
transistor
Emitter
Collector
ferrite toroid core
wrapped with
two coils of wire
LED - needs 1.85 volts
(Light Emitting Diode)

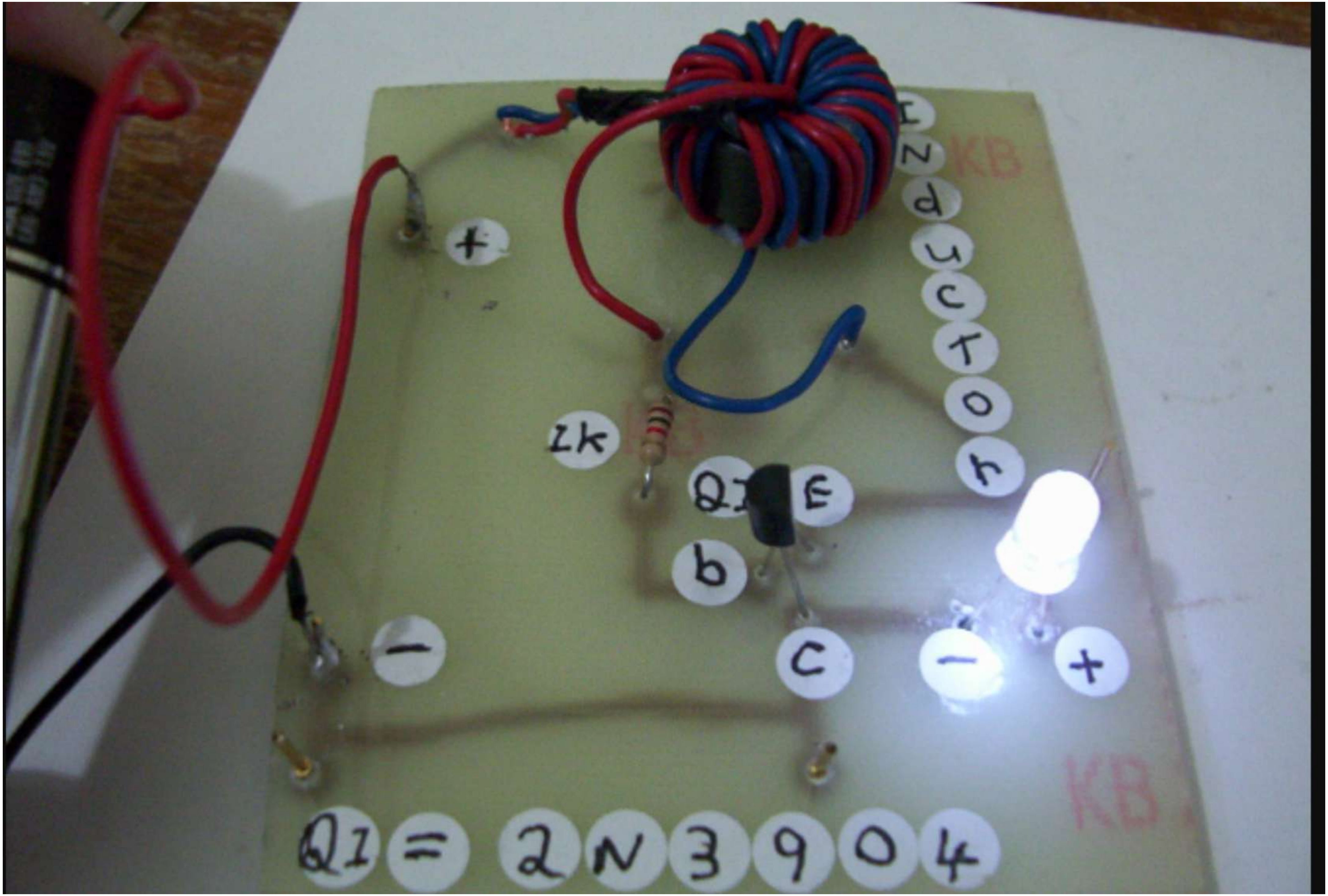

accessories that make the

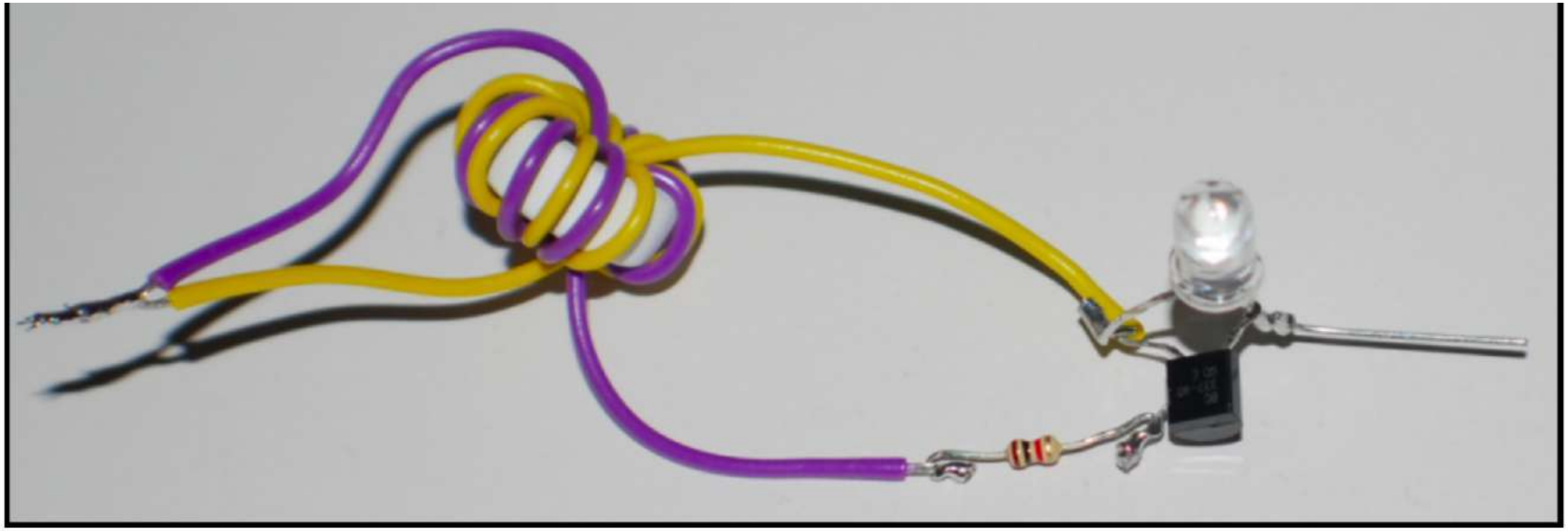

D
L
R
Circles
here
touch
Circles
here
touch



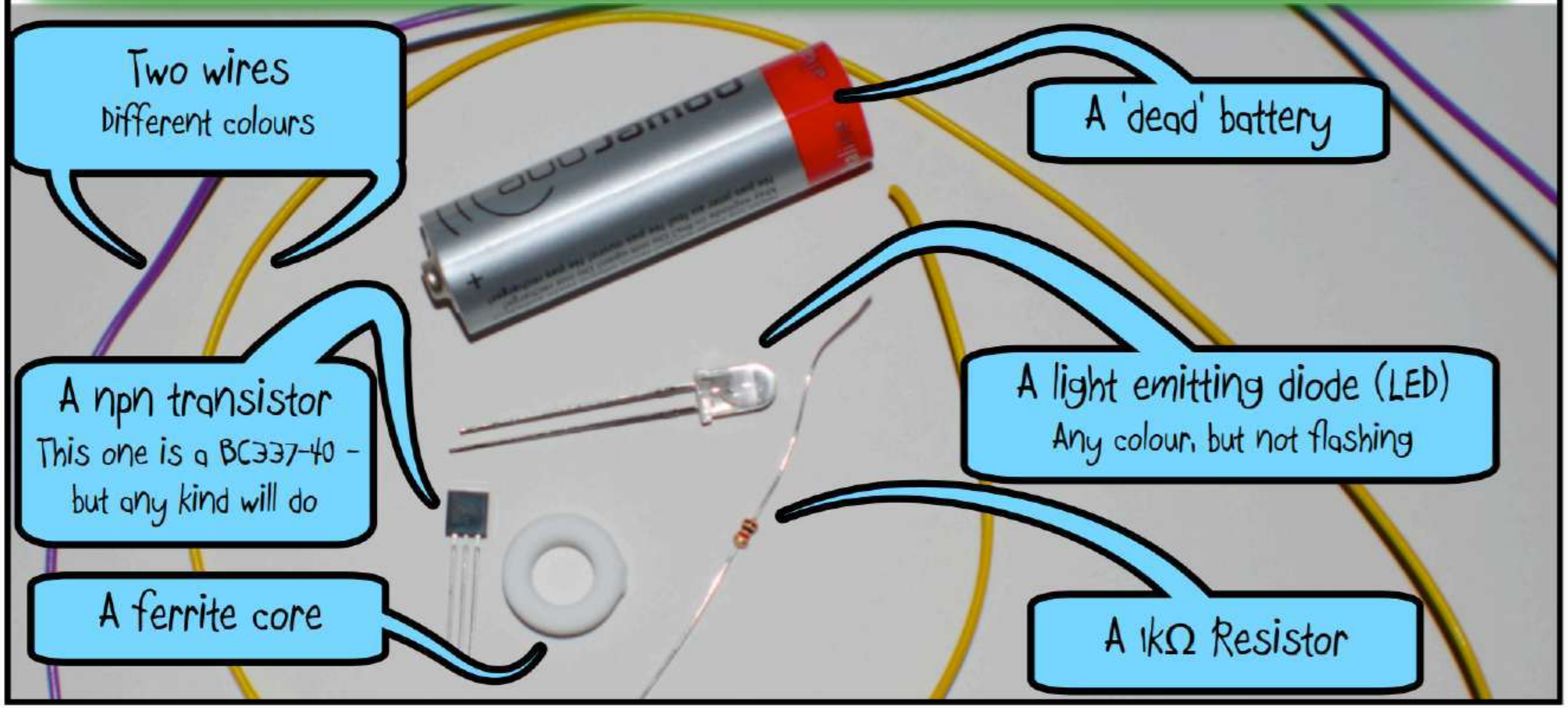


Panasonic
DIGITAL POWER
AD7GR - Joule-Thief
January 2009


INductor
+
2k
Q1
E
b
C
−
− +
Q1 = 2N3904
KB
KB

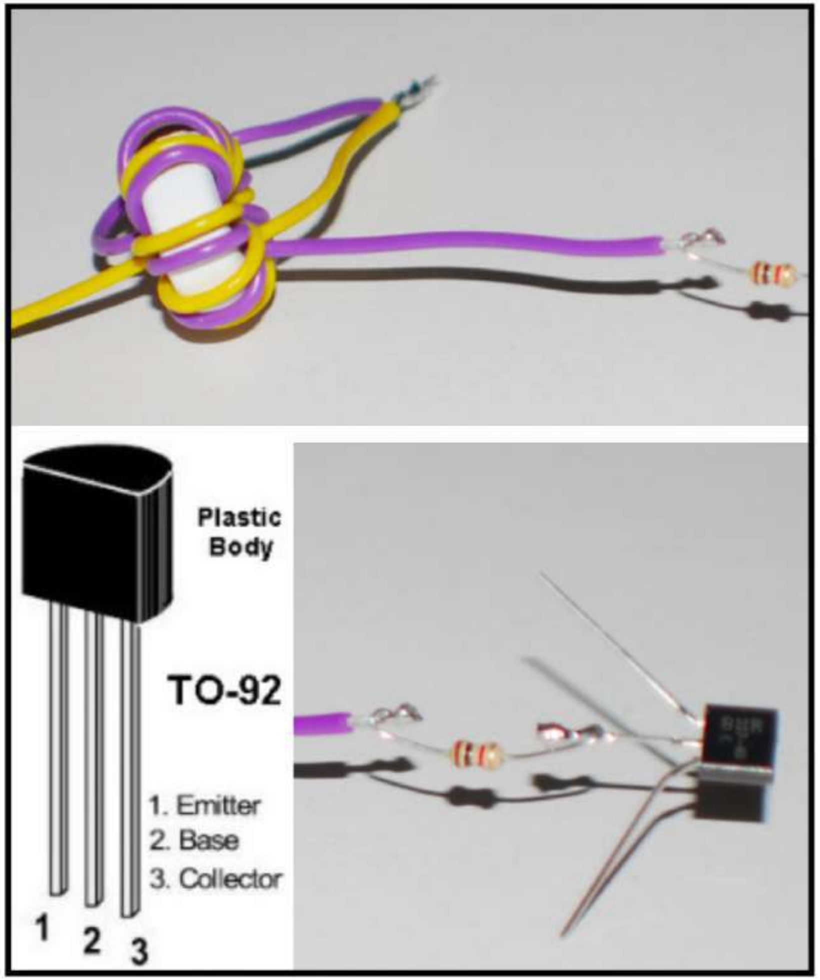


... and these are the components you need:

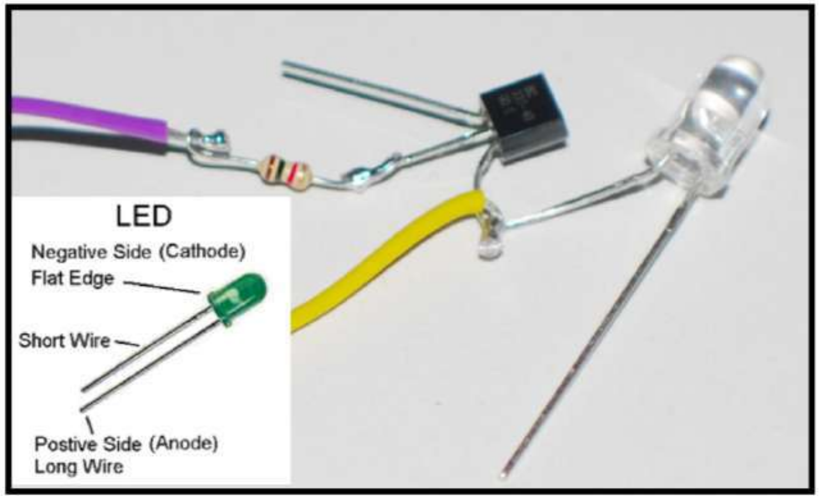


Solder the 1kΩ Resistor to either of the unsoldered wires coming from the inductor.

Solder the other end of the resistor to the base lead of the transistor.
On the transistor used here, that is the middle lead.
Cut off the spare ends of leads.



Solder the anode of the LED (the longer leg) to the collector lead of the transistor AND the remaining wire from the inductor.
Cut off the ends of the leads.

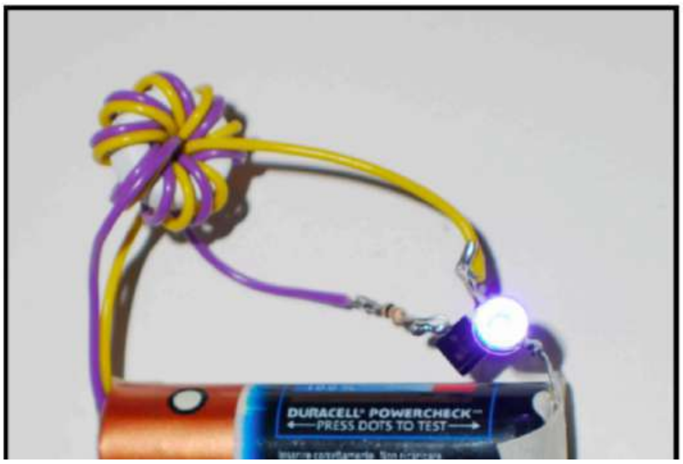


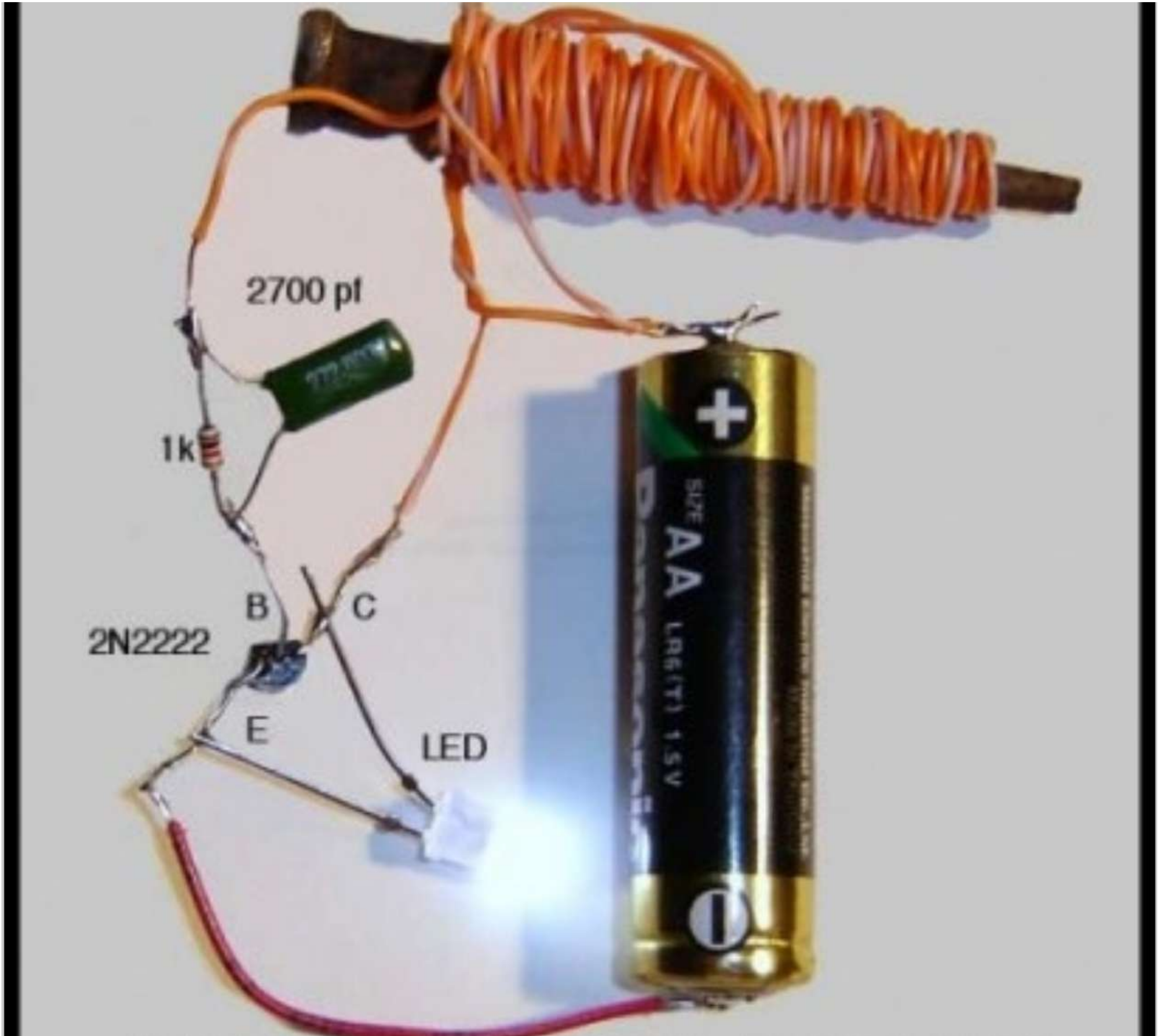
Solder the other leg of the LED (the cathode) to the emitter lead of the transistor.
Do NOT cut off the LED leg.
(Don't wory if you have cut it off - you'll just need to solder another wire to this leg so that you can connect it to the battery.)

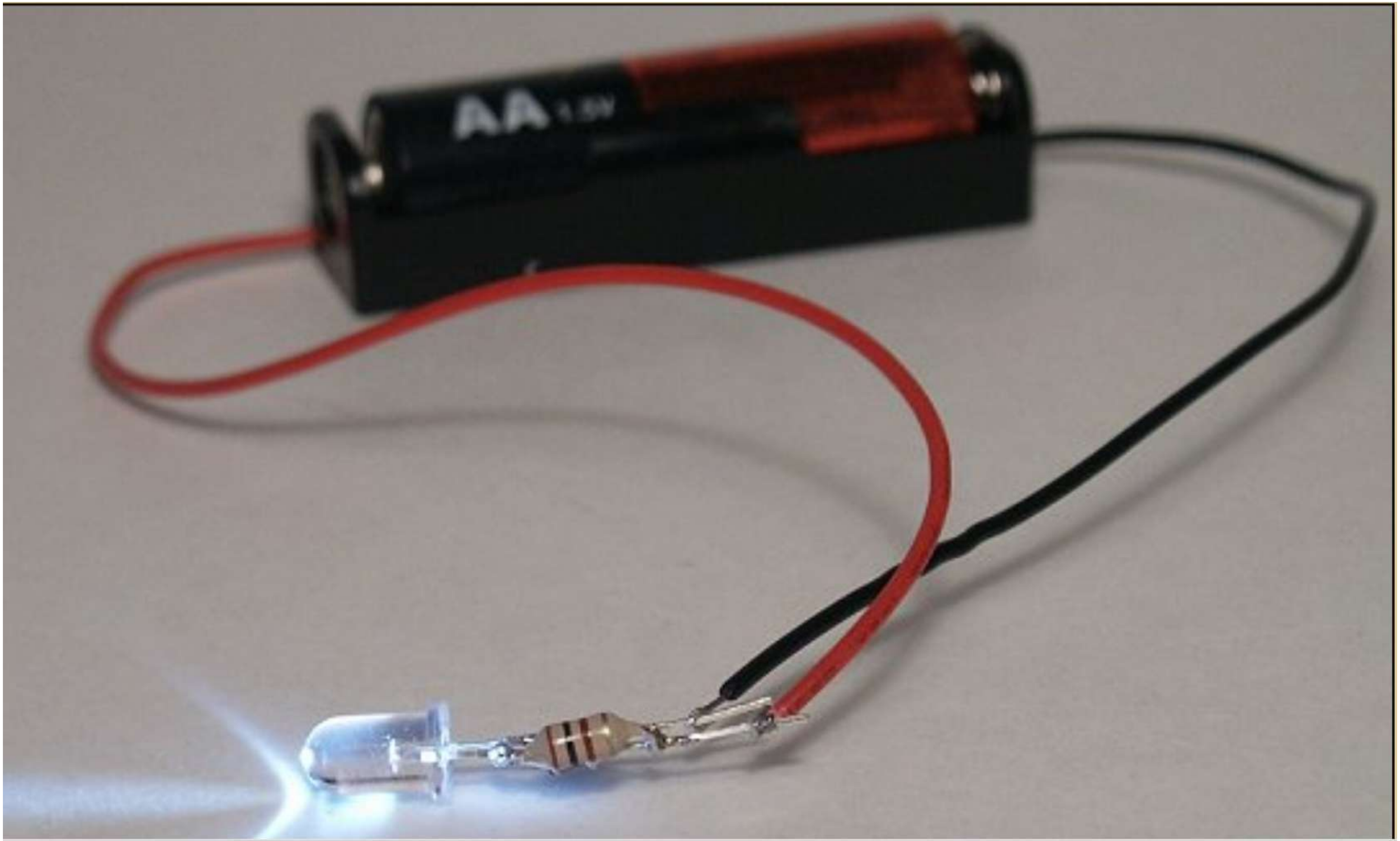
That's the circuit finished. Now use it.

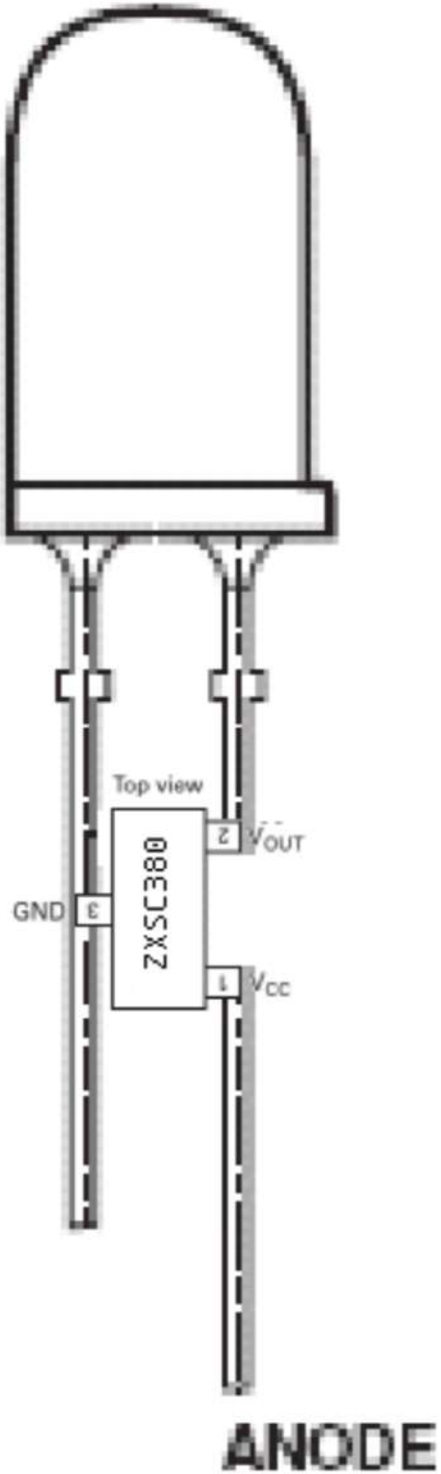
First you need a 'dead' battery - that means one where the voltage is less than 1.3V.
You can see that the battery used here has a Voltage of just over 1V.

Connect the two soldered wires coming from the inductor to the positive (+) side of the battery.
Connect the uncut LED leg (the athode) to the negative (-) side of the battery.




2700 pf
1k
B
C
2N2222
E
LED
+
SIZE AA LR6(T) 1.5V

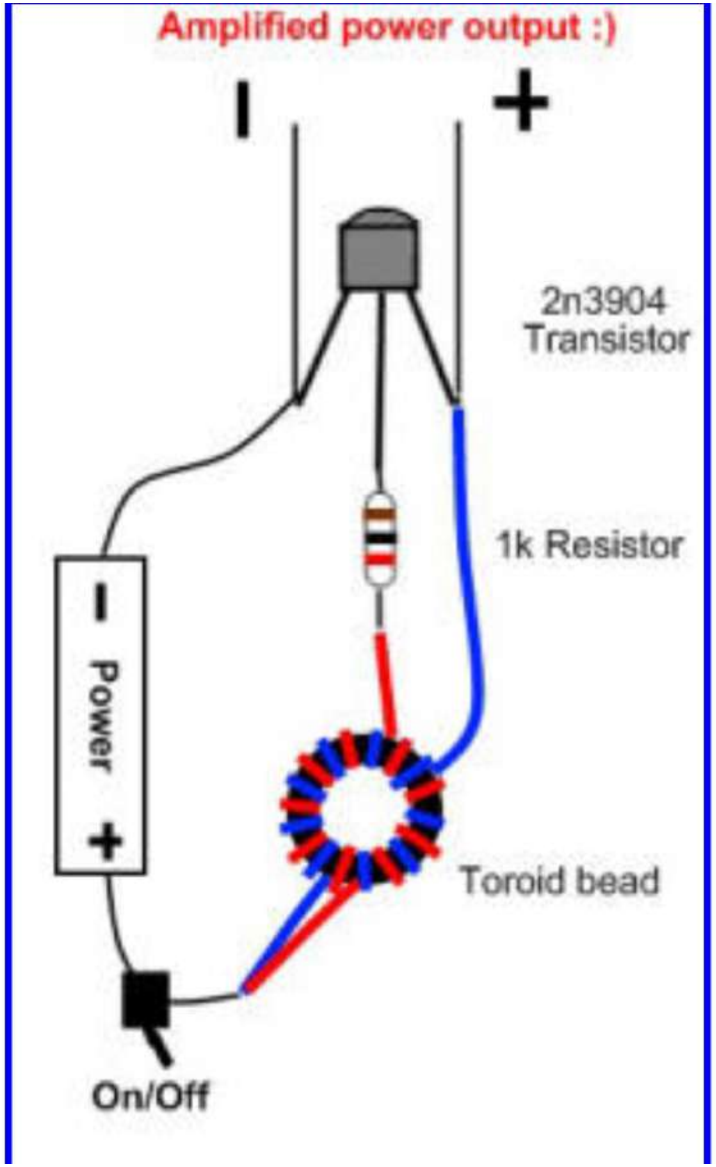

AA

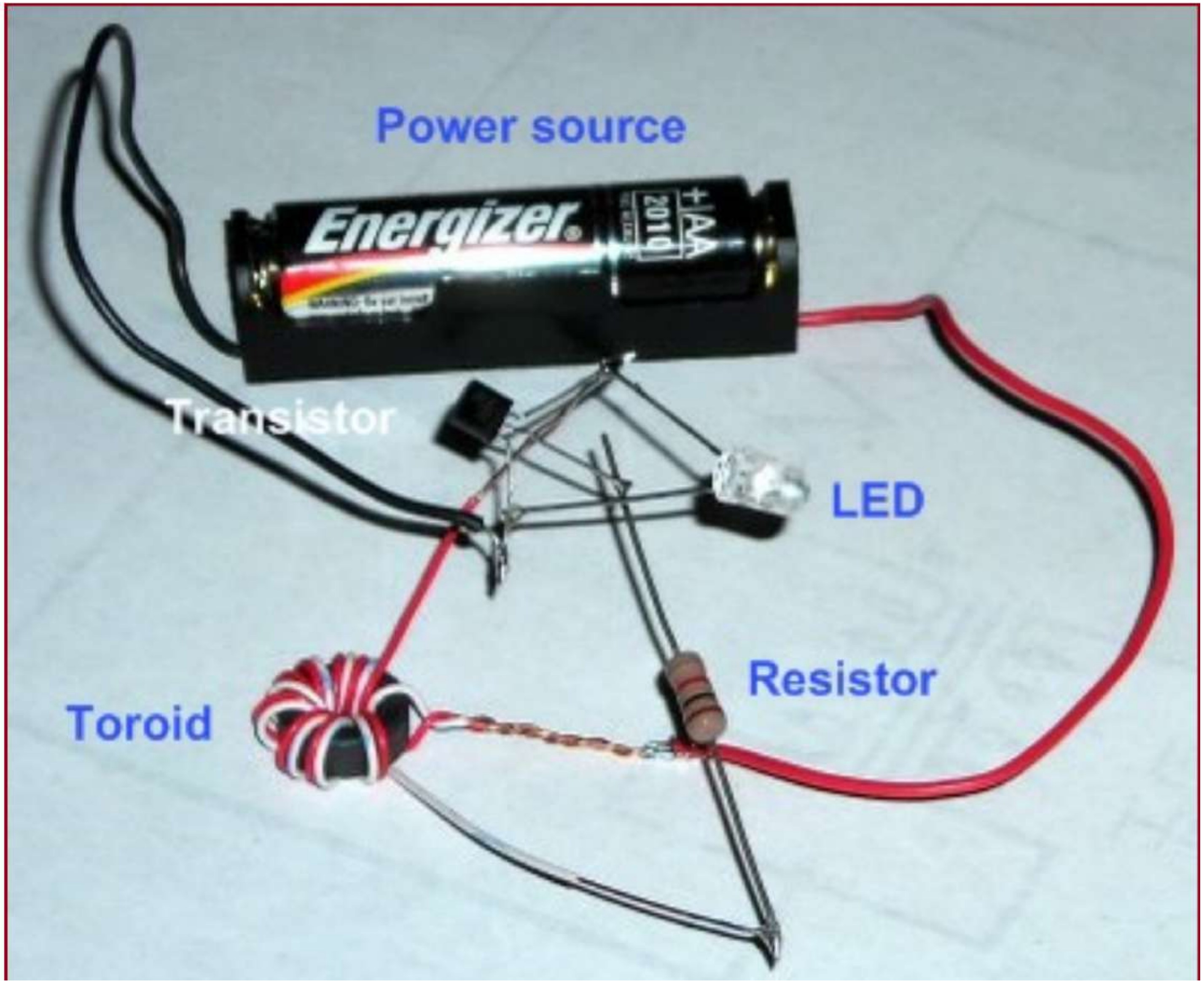


The chip is soldered onto the legs of the LED and then the wire between pins 1 and 2 is cut out so there is no connection. The inductor is then soldered so as to bridge pins 1 and 2. I soldered the inductor on before cutting out the wire but it might be easier to try some other method.

As I said previously, this is a tedious solder job, and the SOT23 IC is easily damaged (ask me how I know!) It takes patience and a steady hand to assemble these few parts.

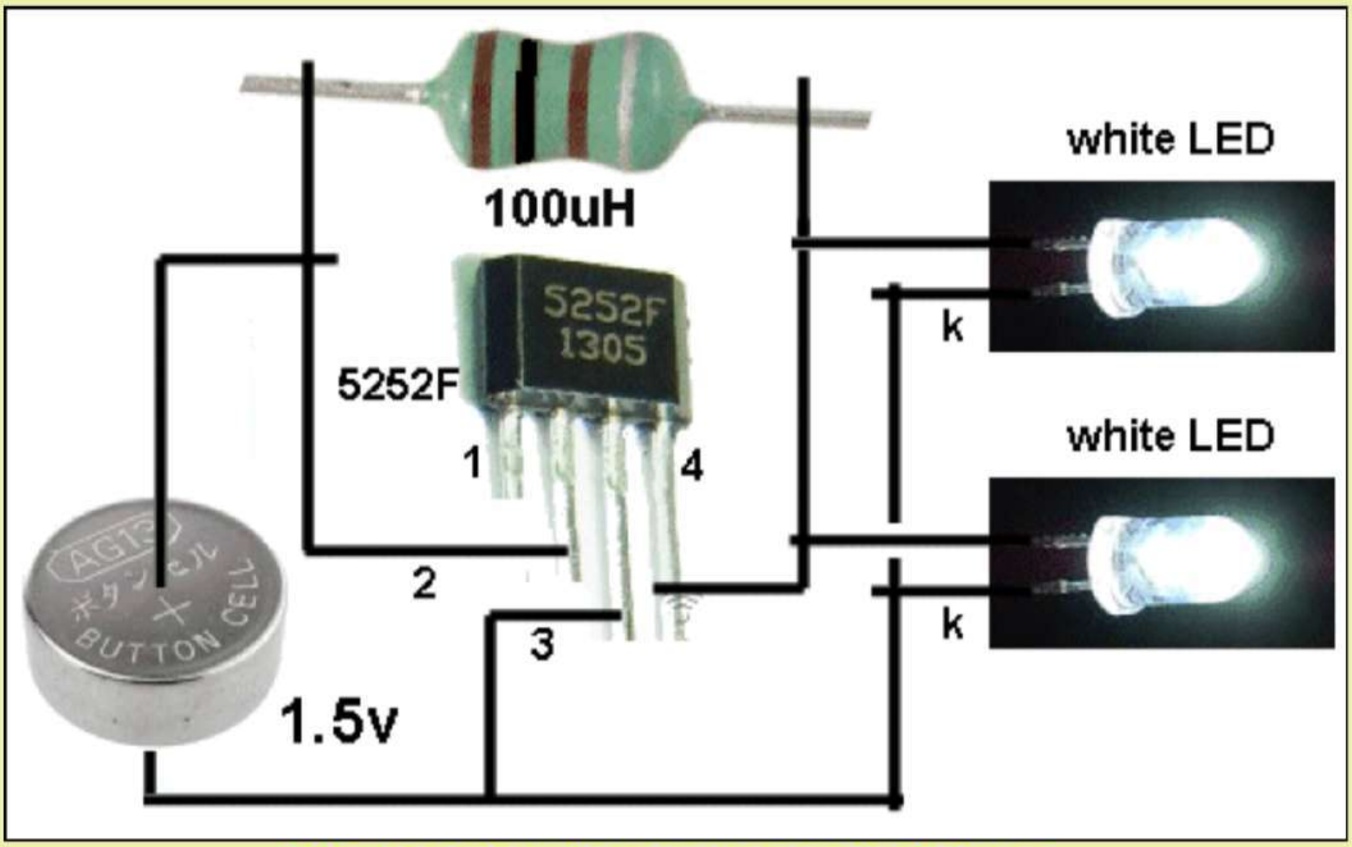
This circuit would work for the LED indicator in the 1.5v boosters and would most likely be a better choice than the Joule Thief that I posted previously.


Amplified power output :)
-
+
2n3904
Transistor
1k Resistor
-
Power
+
Toroid bead
On/Off


Power source
Energizer
AA
Transistor
LED
Resistor
Toroid

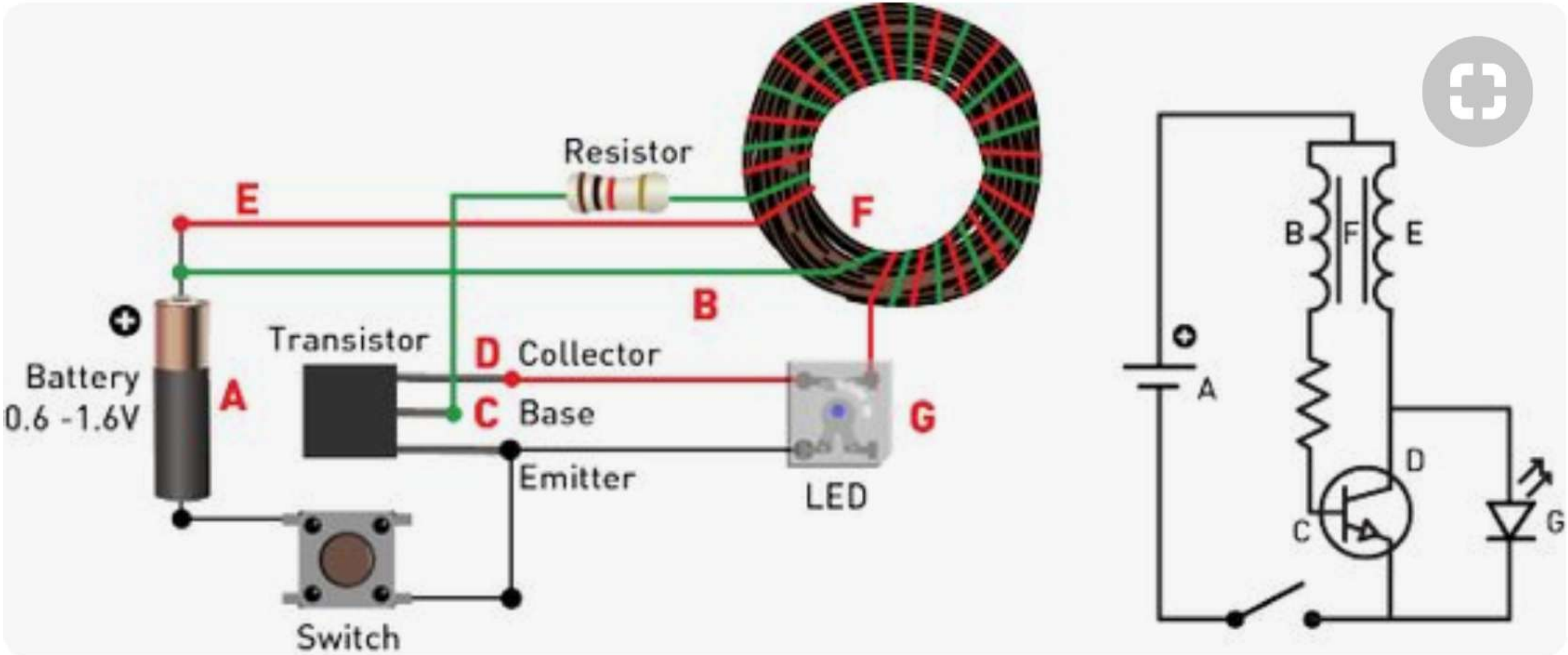
The CIRCUIT

The circuit is very simple. All the work is done by the 5252F chip.
It contains an oscillator, a high speed diode and a power transistor. All these components inside the "IC" that looks like a 4-leaded transistor!
This IC is smaller and cheaper than all the parts individually and is less expensive than the competition (that costs 70 cents).
We can produce a complete project for a few dollars and it has two "test features."
You can place a LED across one of the LEDs on the board and find out the colour as many LEDs come in a "clear-as-glass" package and you cannot tell the colour until they are illuminated.
The other feature is INDUCTOR TESTING.
The current taken by the circuit changes according to the value of the inductor.
You just need a few reference values and you can work out the value of an inductor within the range of the inductors you have used as samples, or slightly higher or lower values.

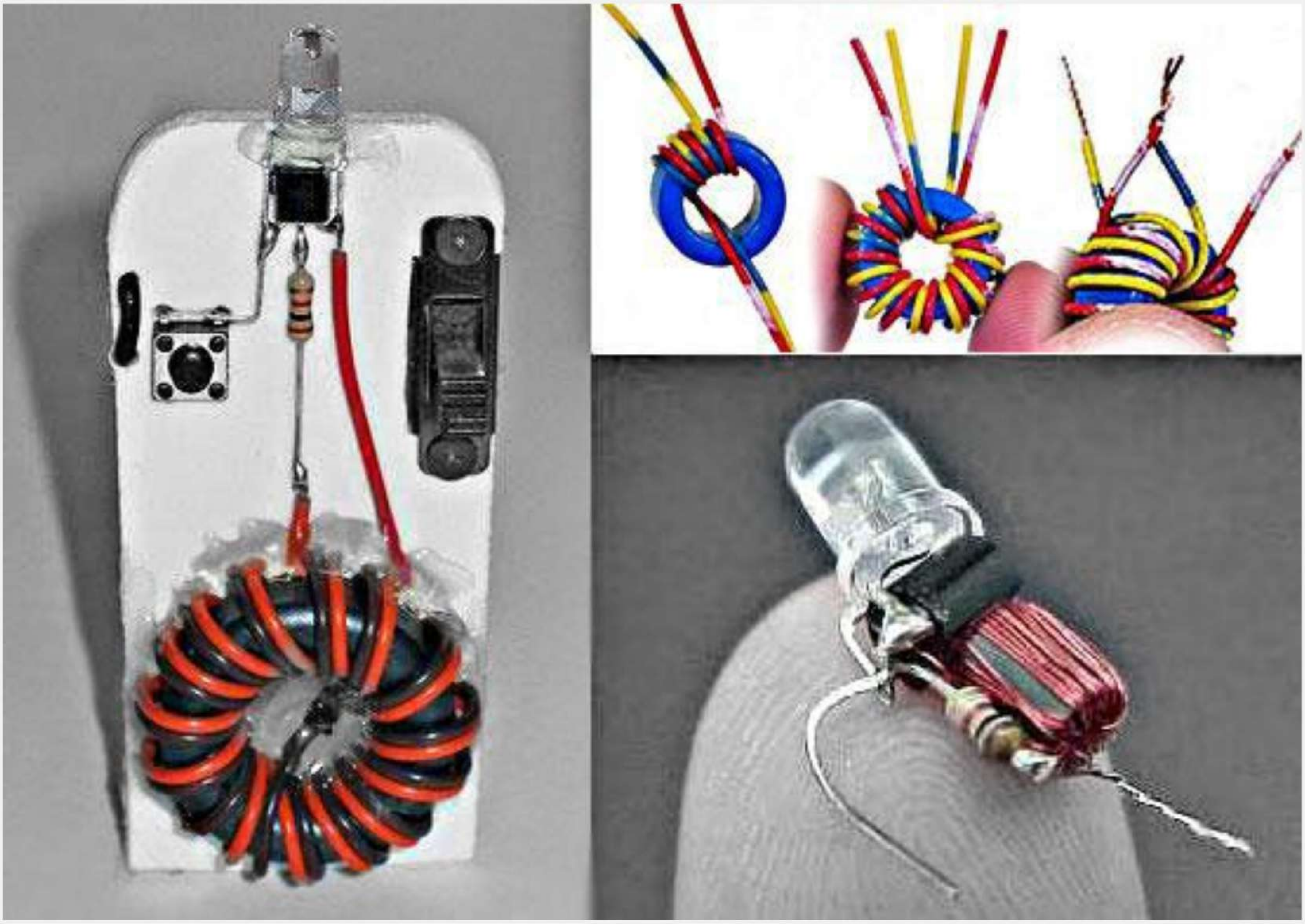


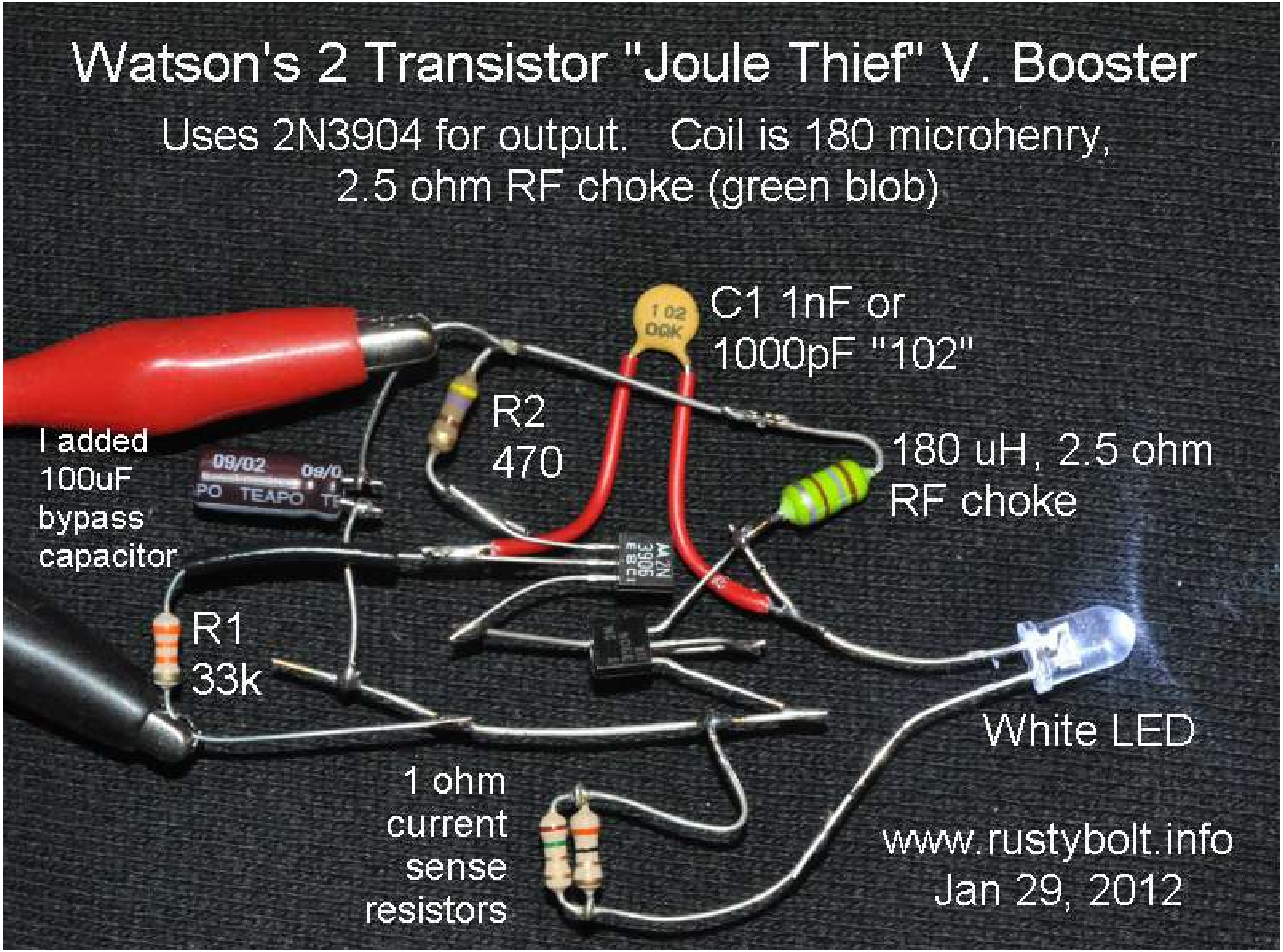
The layout using component pictures.

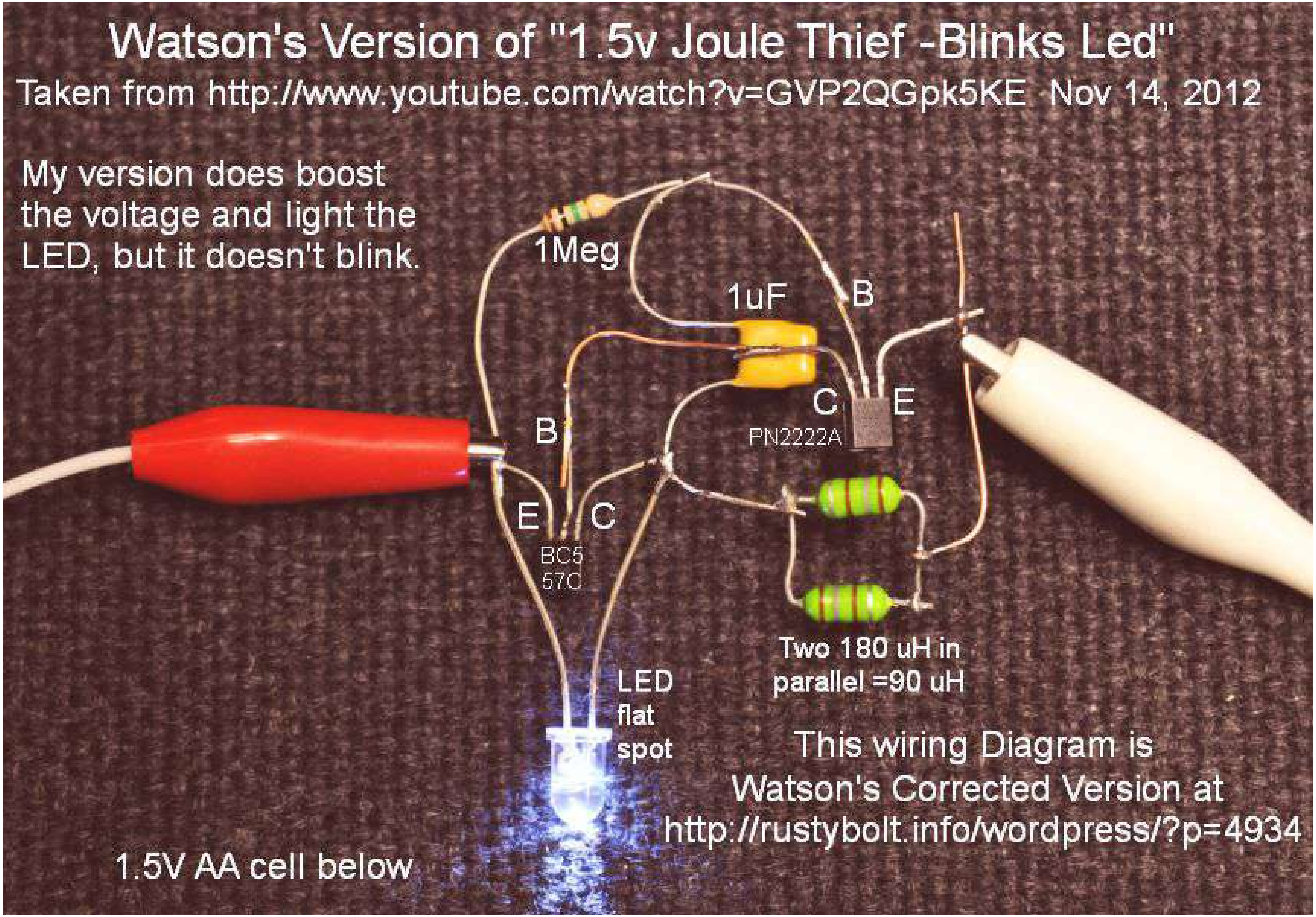
Using a 220uH, the circuit takes 13mA and illuminates 2 white LEDs very brightly.
Using 100uH the circuit takes 30mA and the LEDs are really the same brightness.
Using 33uH the circuit takes 80mA and the LEDs are just about the same brightness.
Obviously the 220uH creates the most efficient circuit.
The QX5252F is capable of delivering more than 100mA to the LEDs but we only need

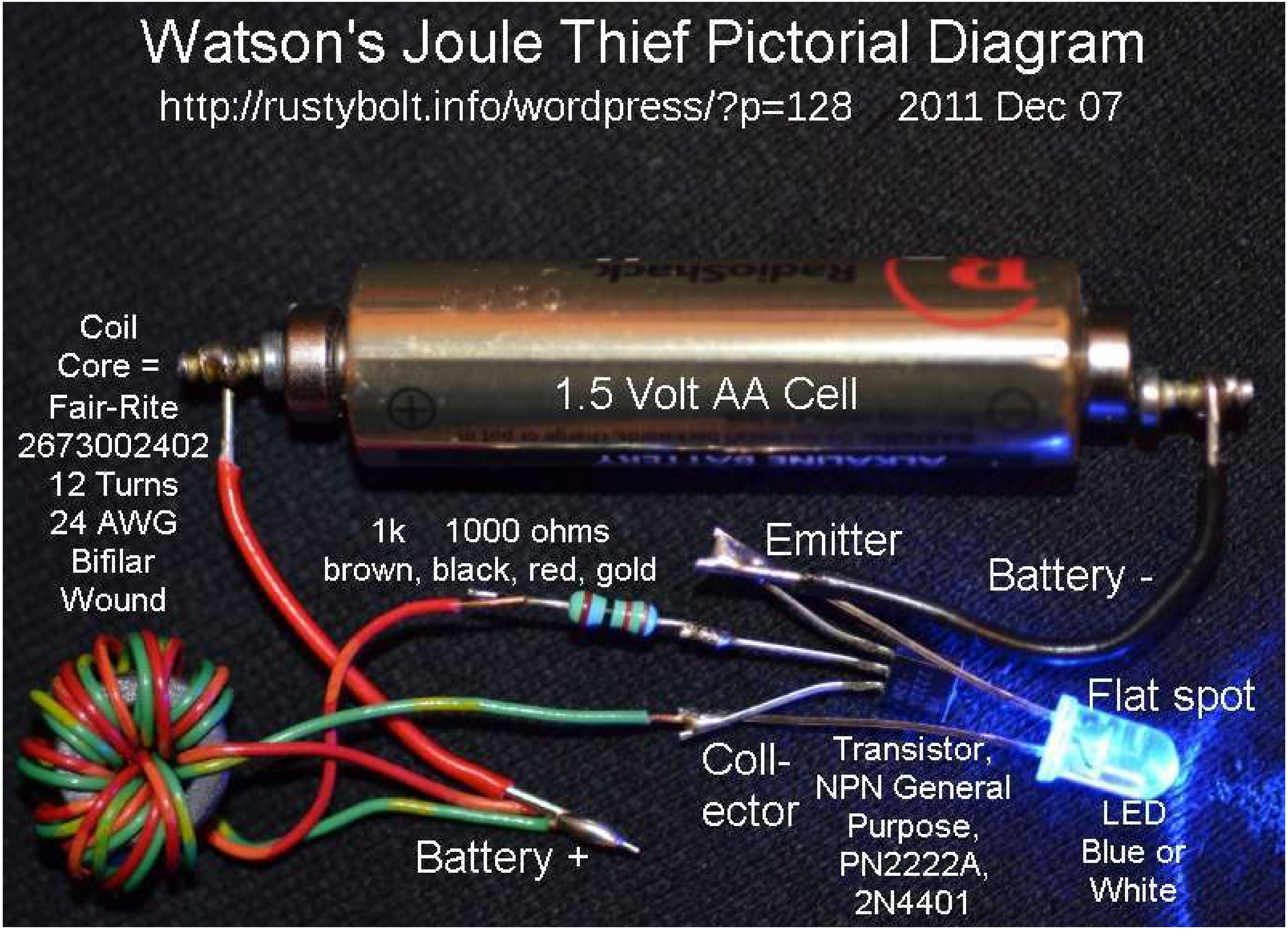


Resistor
E
F
B
Battery
0.6 -1.6V
A
Transistor
D Collector
C Base
Emitter
G
LED
Switch
B
F
E
A
D
C
G



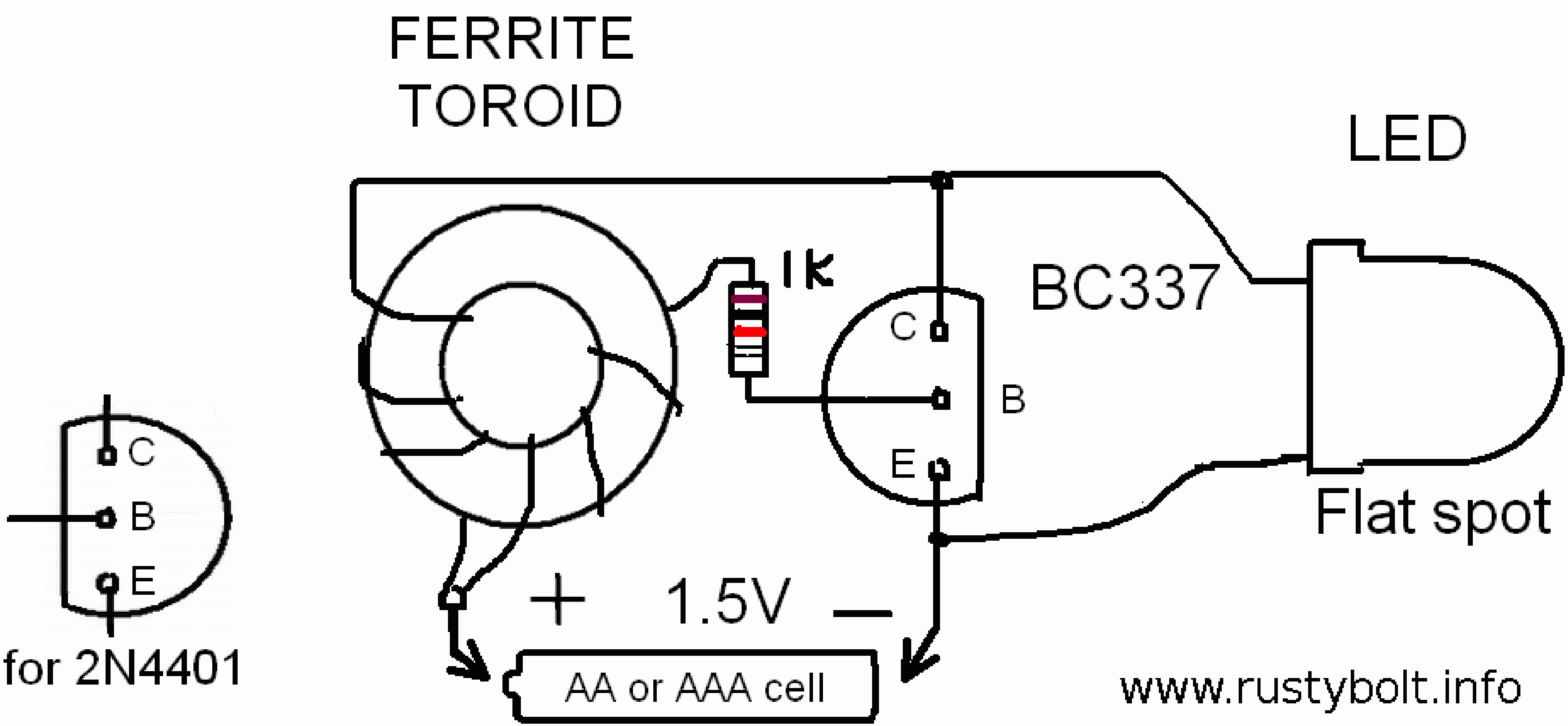

Watson's 2 Transistor "Joule Thief" V. Booster
Uses 2N3904 for output. Coil is 180 microhenry,
2.5 ohm RF choke (green blob)
C1 1nF or
1000pF "102"
R2
470
180 uH, 2.5 ohm
RF choke
I added
100uF
bypass
capacitor
R1
33k
White LED
1 ohm
current
sense
resistors
www.rustybolt.info
Jan 29, 2012

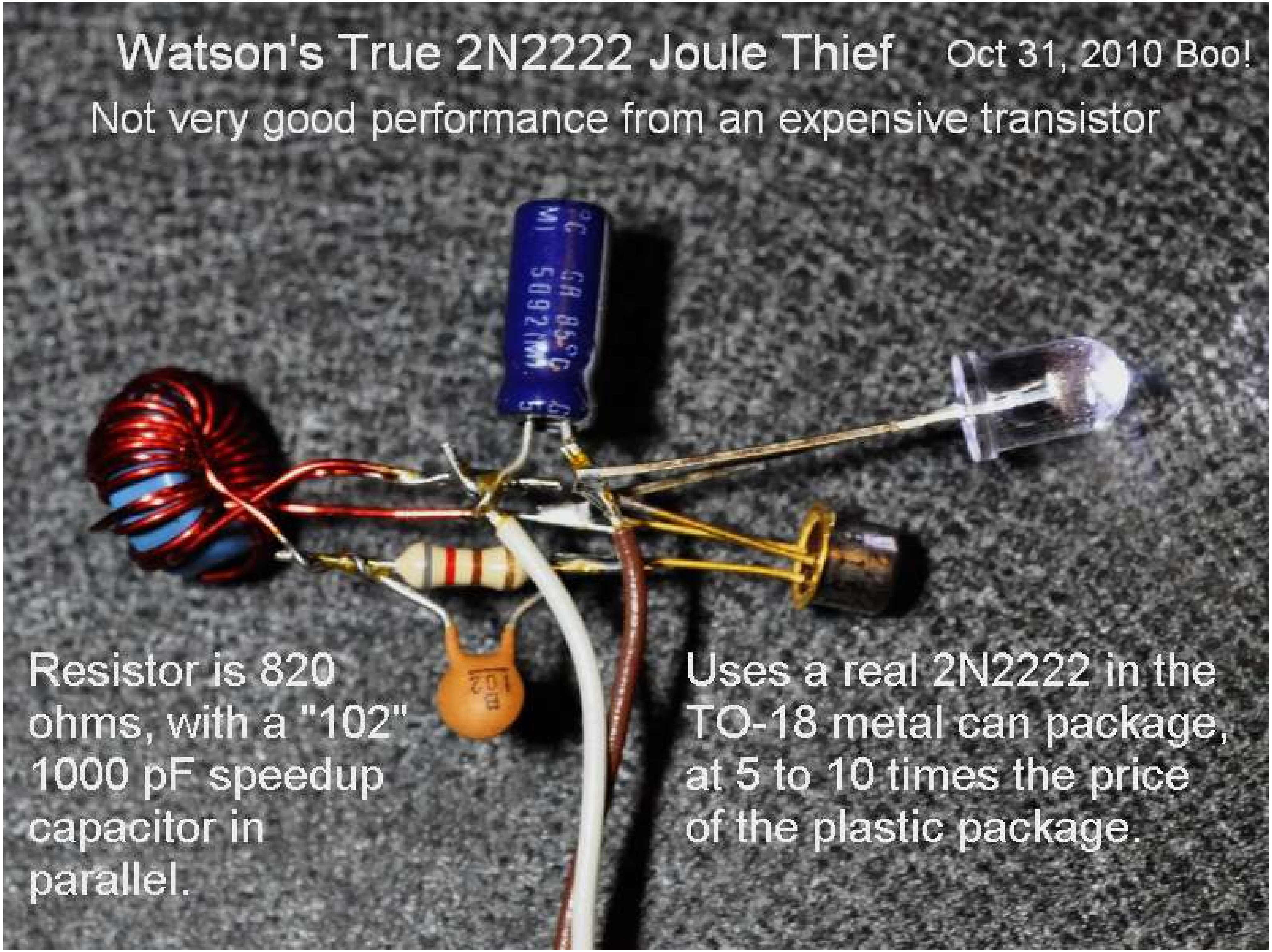

Watson's Version of "1.5v Joule Thief -Blinks Led"
Taken from http://www.youtube.com/watch?v=GVP2QGpk5KE Nov 14, 2012
My version does boost the voltage and light the LED, but it doesn't blink.
1Meg
1uF
B
C
E
PN2222A
B
E
C
BC5
57C
Two 180 uH in parallel =90 uH
LED flat spot
This wiring Diagram is Watson's Corrected Version at http://rustybolt.info/wordpress/?p=4934
1.5V AA cell below

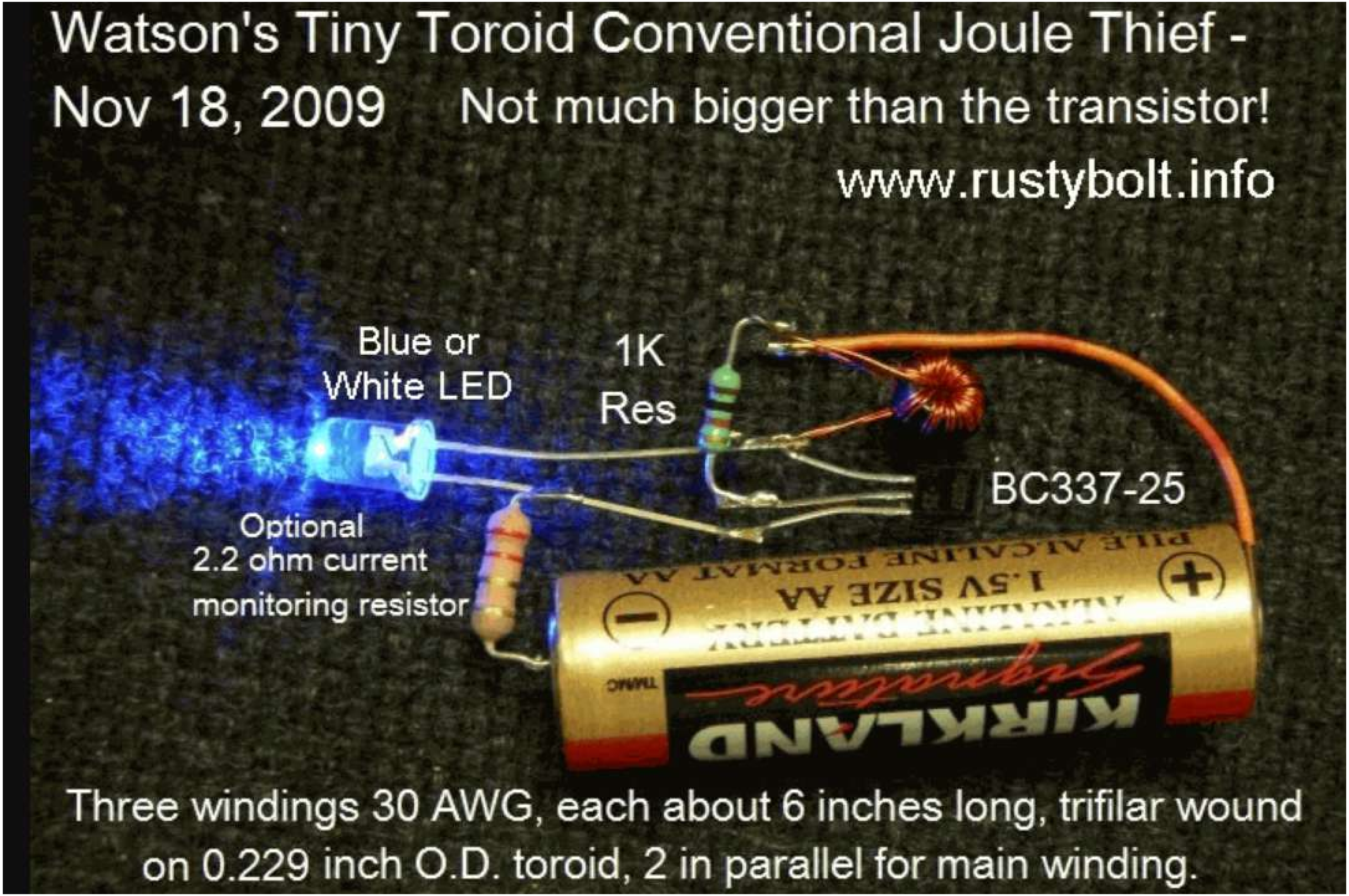

Watson's Joule Thief Pictorial Diagram
http://rustybolt.info/wordpress/?p=128 2011 Dec 07
Coil Core = Fair-Rite 2673002402 12 Turns 24 AWG Bifilar Wound
RadioShack
1.5 Volt AA Cell
1k 1000 ohms brown, black, red, gold
Emitter
Battery -
Flat spot
Coll-ector
Transistor, NPN General Purpose, PN2222A, 2N4401
LED Blue or White
Battery +

Joule Thief

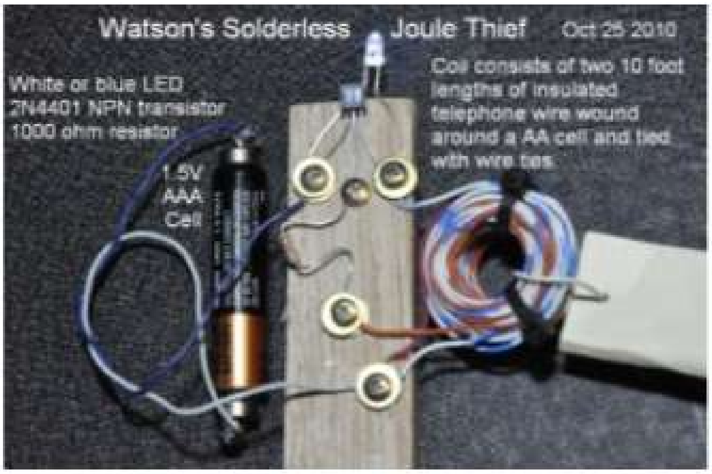
Pictorial Wiring Diagram Dec 11, 2009




Watson's True 2N2222 Joule Thief
Oct 31, 2010 Boo!
Not very good performance from an expensive transistor
Resistor is 820 ohms, with a "102" 1000 pF speedup capacitor in parallel.
Uses a real 2N2222 in the TO-18 metal can package, at 5 to 10 times the price of the plastic package.


Watson's Tiny Toroid Conventional Joule Thief -
Nov 18, 2009 Not much bigger than the transistor!
www.rustybolt.info
Blue or
White LED
1K
Res
BC337-25
Optional
2.2 ohm current
monitoring resistor
Three windings 30 AWG, each about 6 inches long, trifilar wound
on 0.229 inch O.D. toroid, 2 in parallel for main winding.

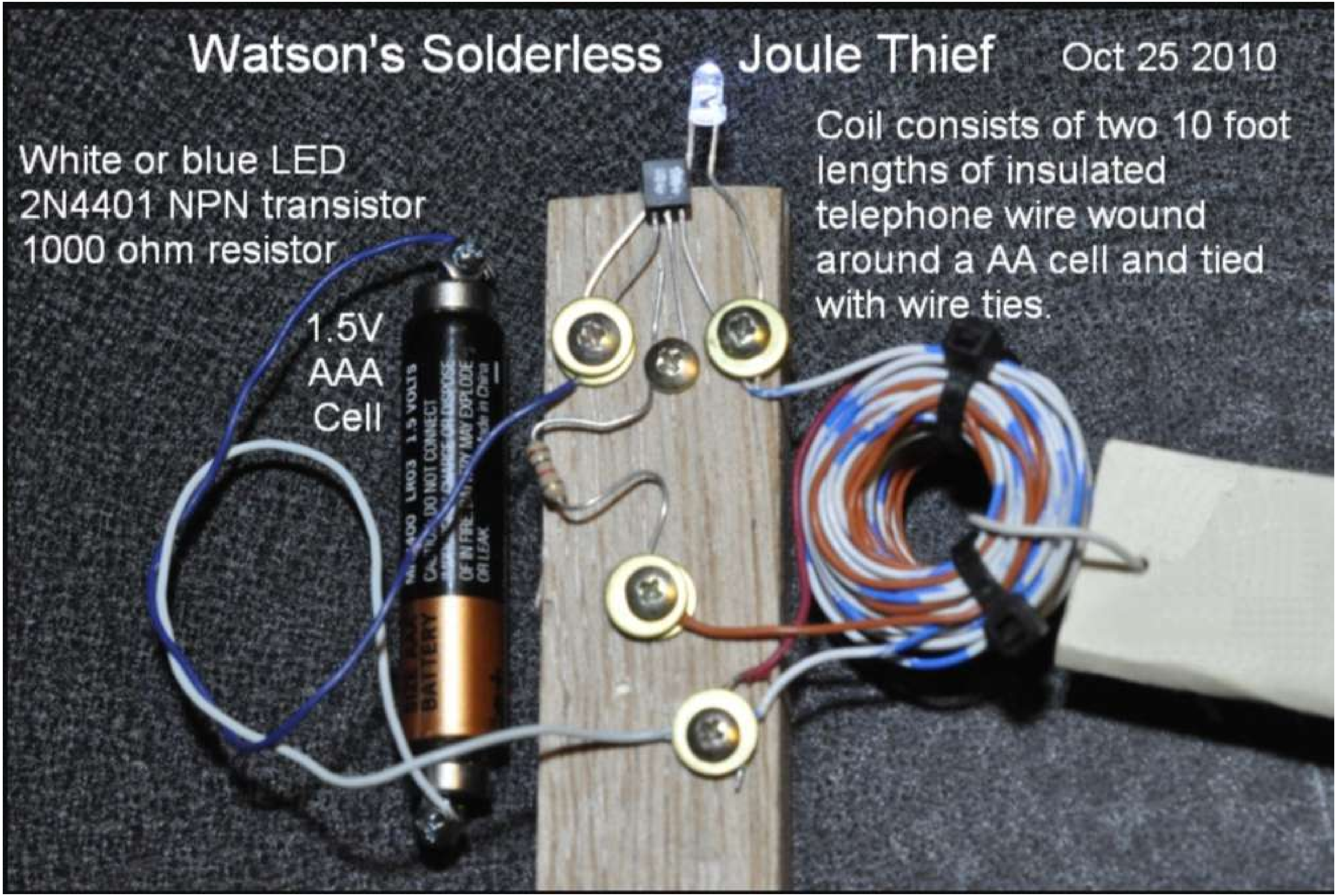
I took this photo just before Halloween back in 2010, after I made this Joule Thief without solder and without a toroid. It shows that you don't have to know how to solder and you don't have to have a toroid to make a working Joule Thief – all you need is a screwdriver. So do your thing and experiment a bit, and see what you can come up with.



Each screw (except for one) has two washers to hold the wires. Putting two or more wires under the screw head without the washers will be difficult and the wires will try to come loose. Two or three washers makes it easier and the wires are held much firmer. The wood block is a piece of solid oak that is about a half inch (12mm) thick. The oak is very hard and the screw holes have to be drilled out before the screws are put in. This also makes it possible to use small screws with a flat end which were used for holding plastic parts together. The screw size is about #3 by 3/8 inch long, with coarse threads like a sheet metal screw.

The LED is not very bright because it's a cheap 3 mm white LED I got from an eBay seller, and it has been used a bit so it has dimmed. Use a decent LED and this circuit will be as bright as a toroid JT.

Another Joule Thief I put together is shown in the second photo. This uses the bare wires to wrap around the joints in place of solder. The joints are not as mechanically strong as solder but for a quick experiment they should work okay. If the JT is going to be used, the wire joints may become intermittent or loose. The solder joints are a much better connection.

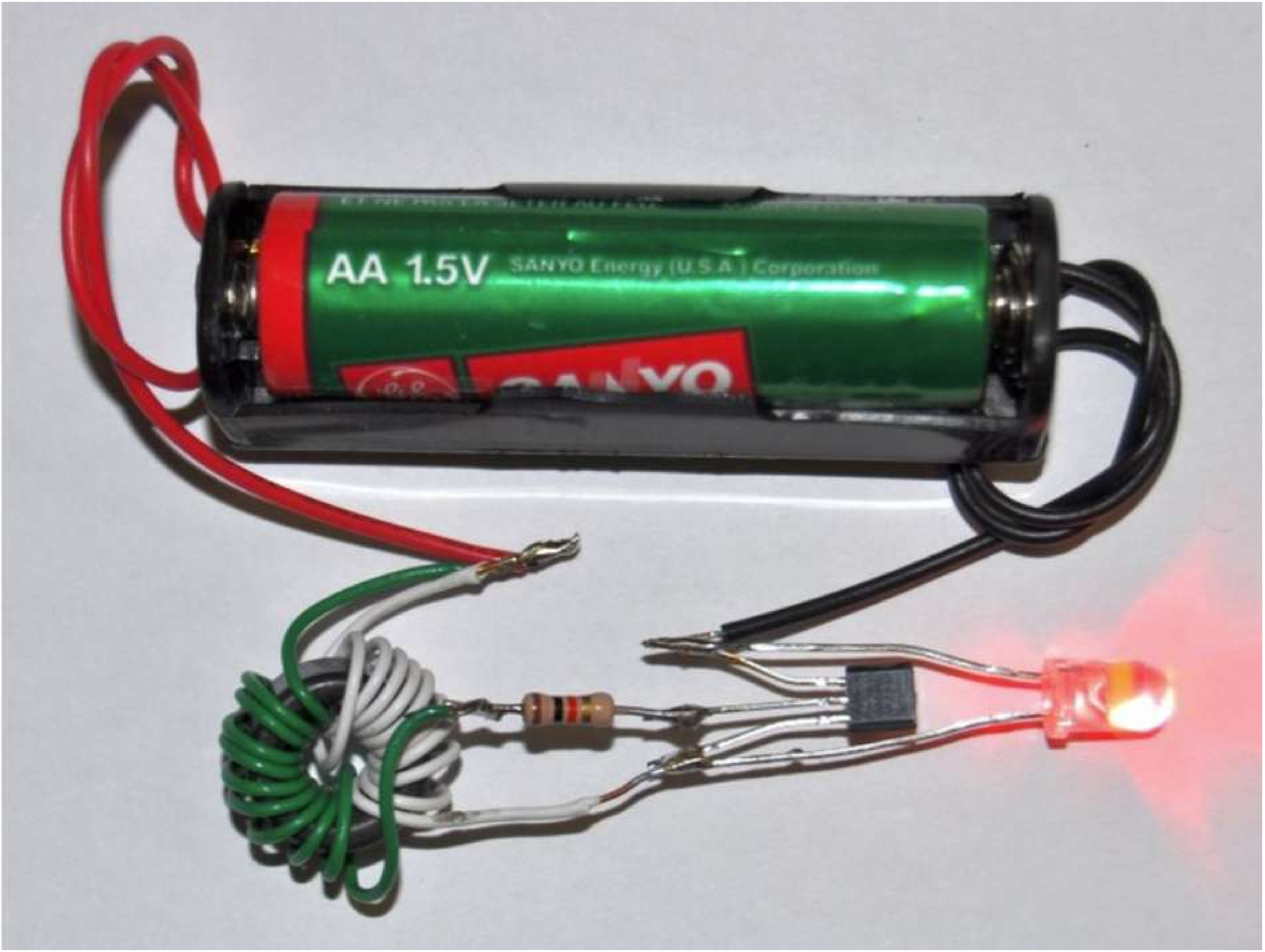

Watson's Solderless Joule Thief Oct 25 2010
White or blue LED
2N4401 NPN transistor
1000 ohm resistor
1.5V
AAA
Cell
Coil consists of two 10 foot lengths of insulated telephone wire wound around a AA cell and tied with wire ties.

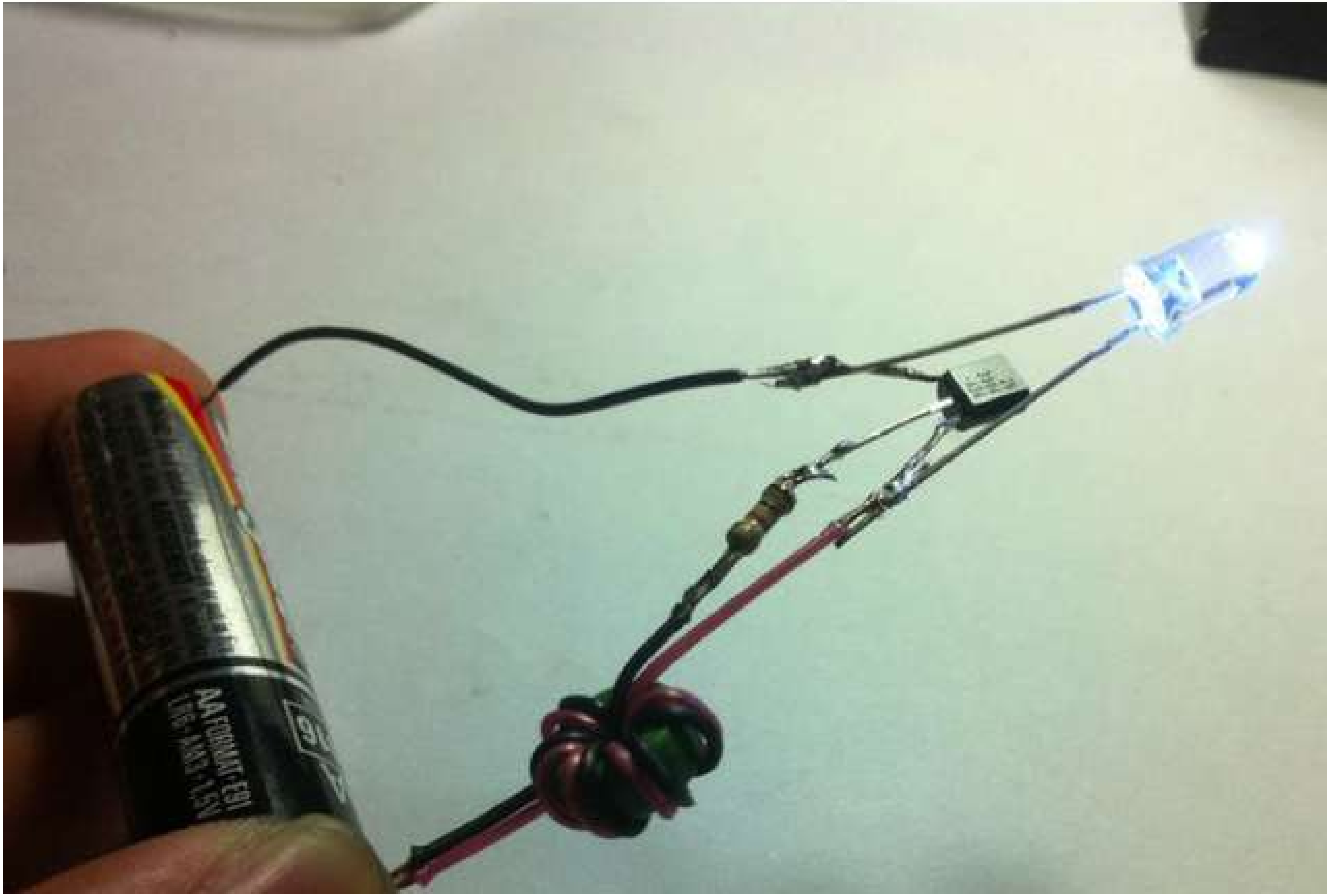

Watson's 'Toroid Free' Air Core Joule Thief
2.2k Red,
Red, Red,
Gold
rustybolt.info/wordpress/?p=2872 May 21, 2012

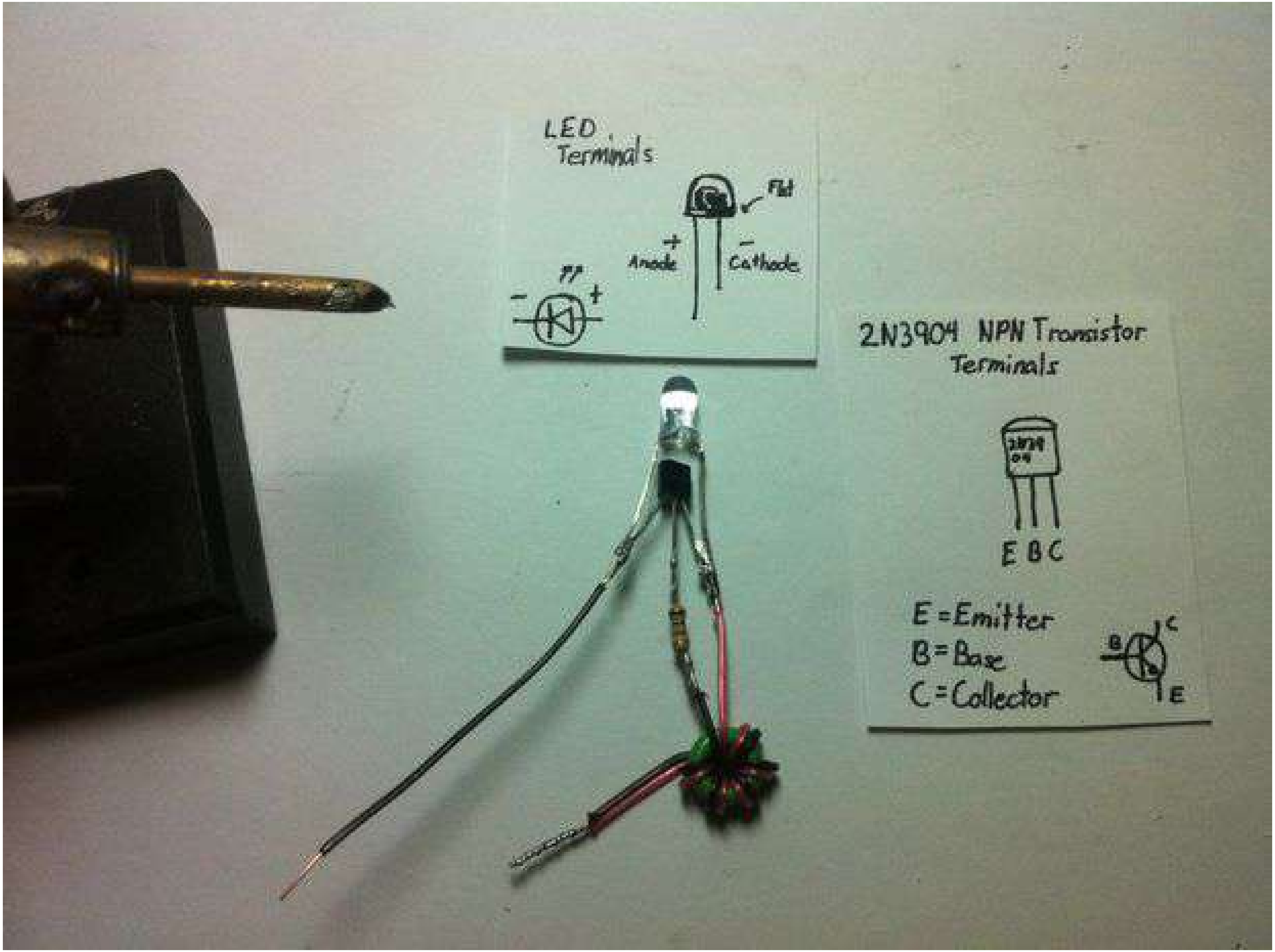

Watson's Nearly Disposable Joule Thief Light
rustybolt.info/wordpress/?p=2133 Fri. Apr 13 2012
Completed circuit ready for coating of silicone sealant.
Transistor is a BC337. If it was a PN2222A or 2N4401,
the flat side would be facing up.

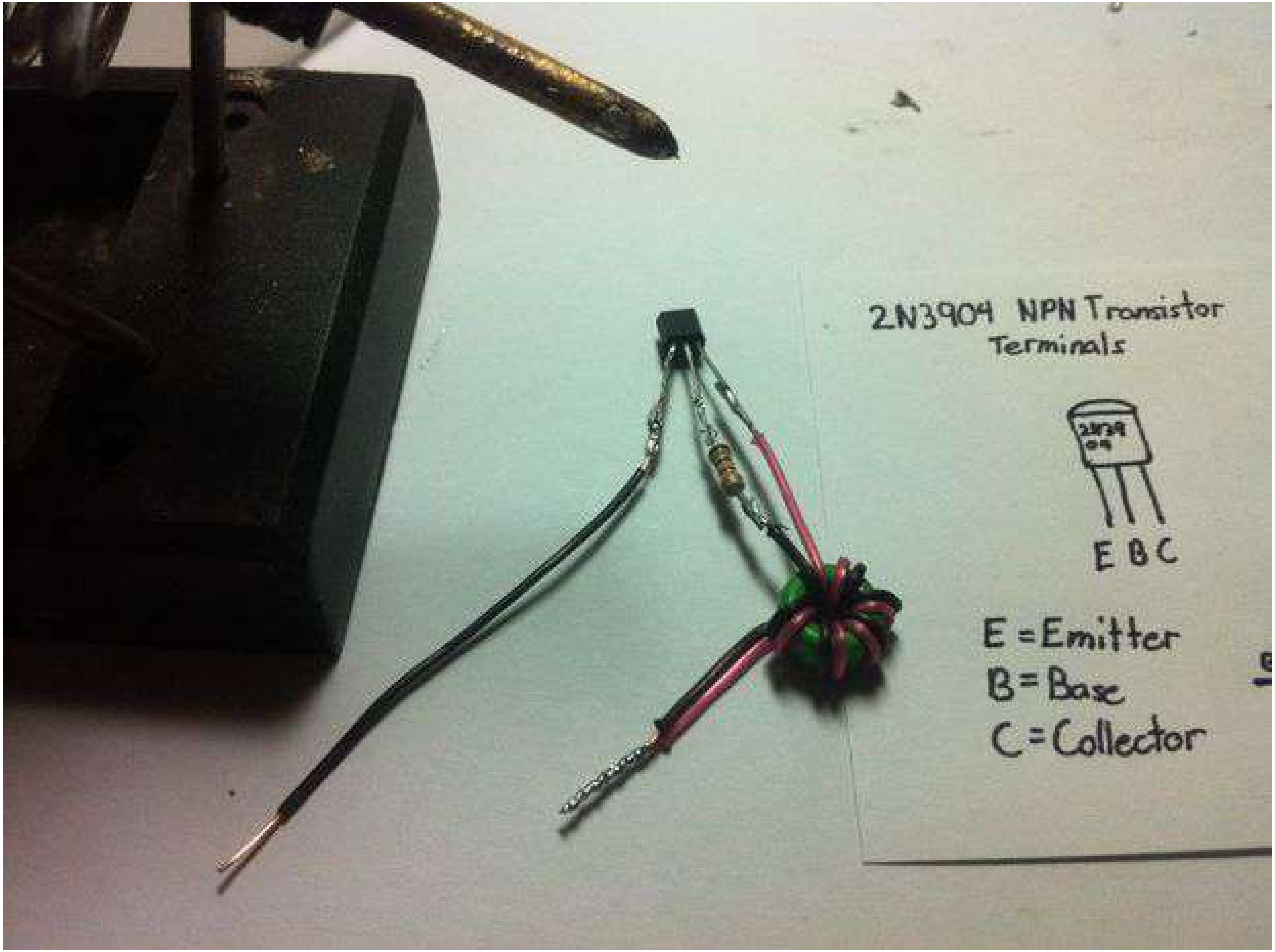

AA
ALKALINE
Energizer


Watson's Solderless Joule Thief
http://rustybolt.info/wordpress/?p=5210

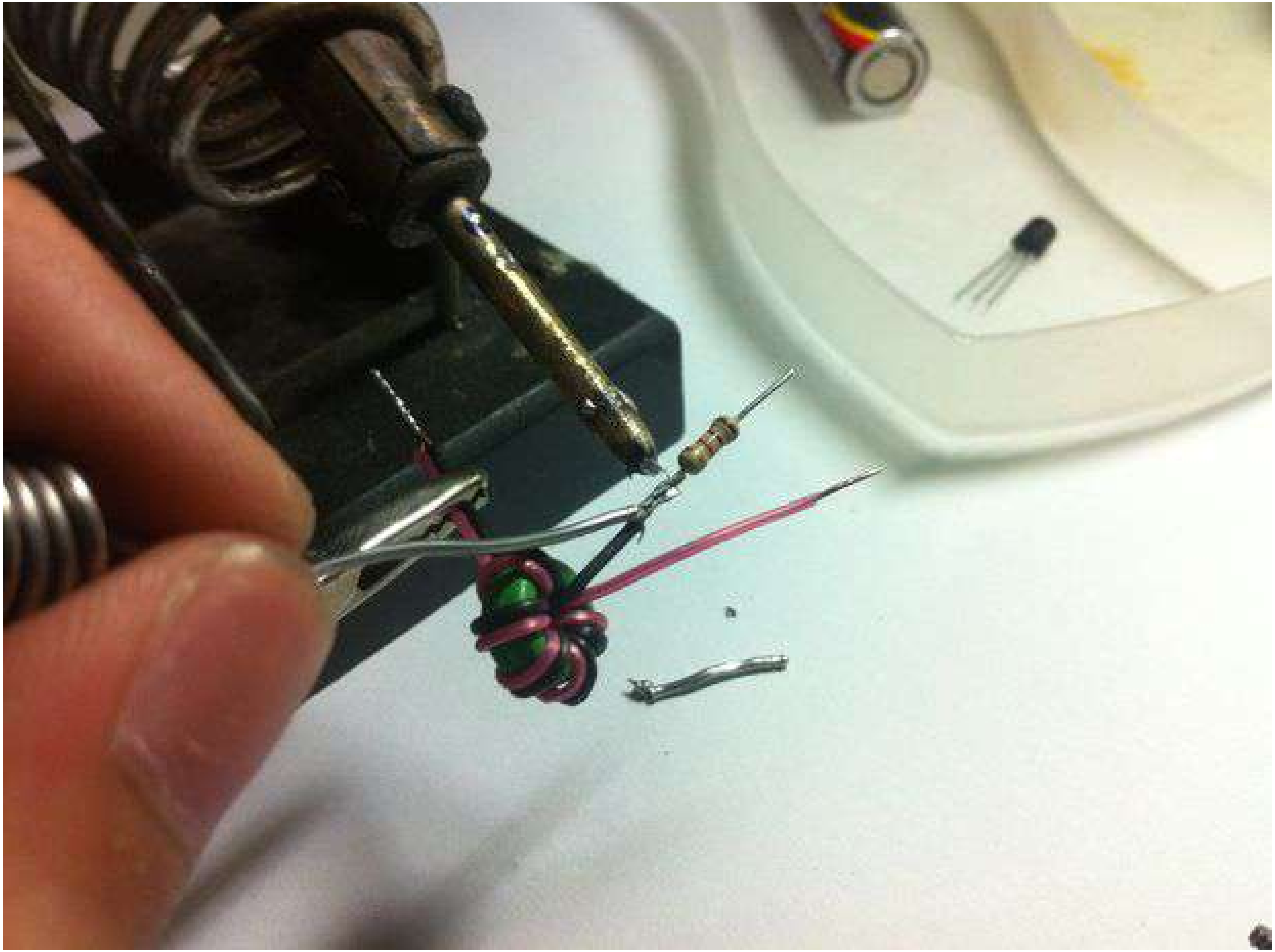

AA 1.5V
SANYO Energy (U.S.A.) Corporation

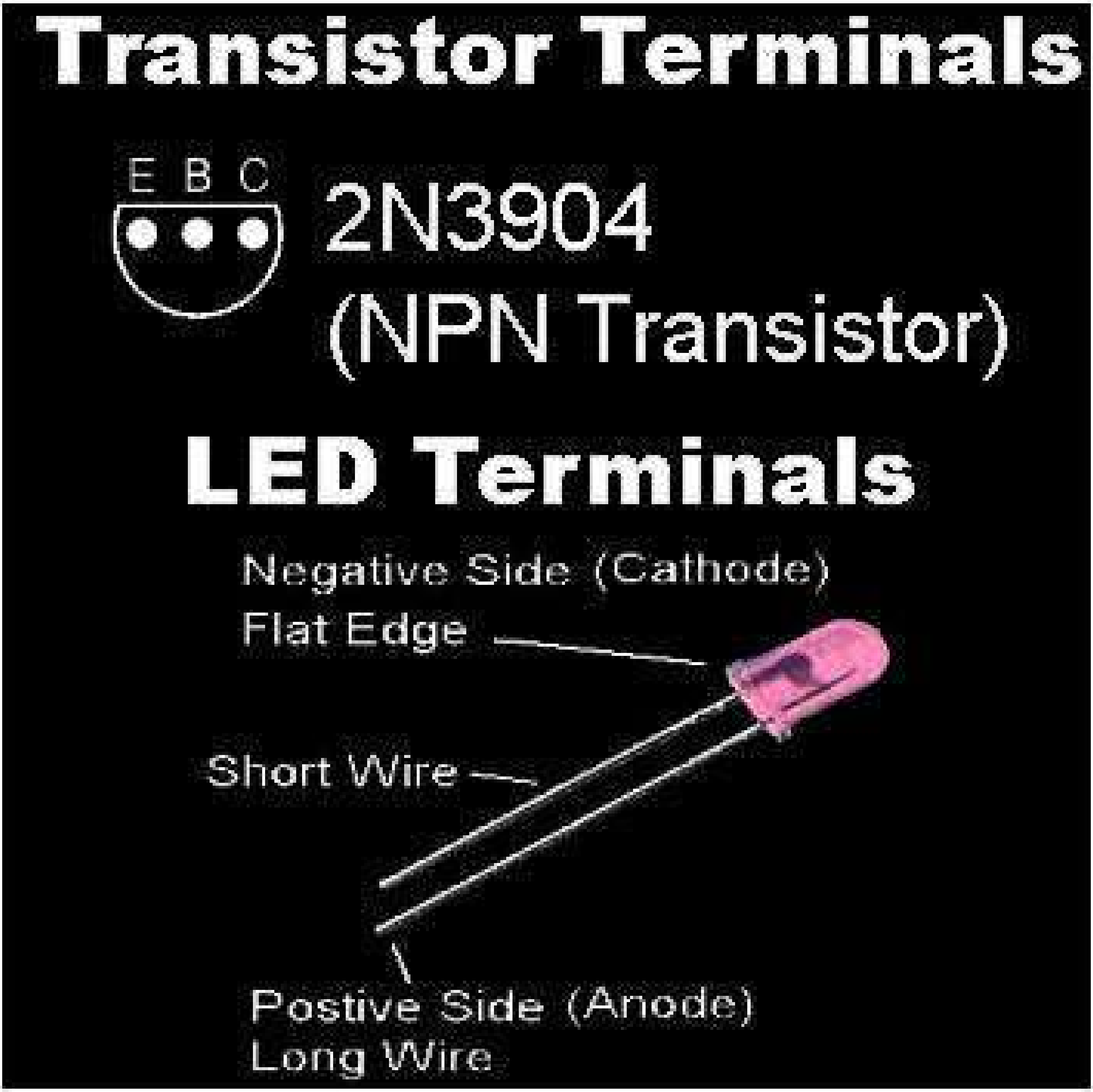


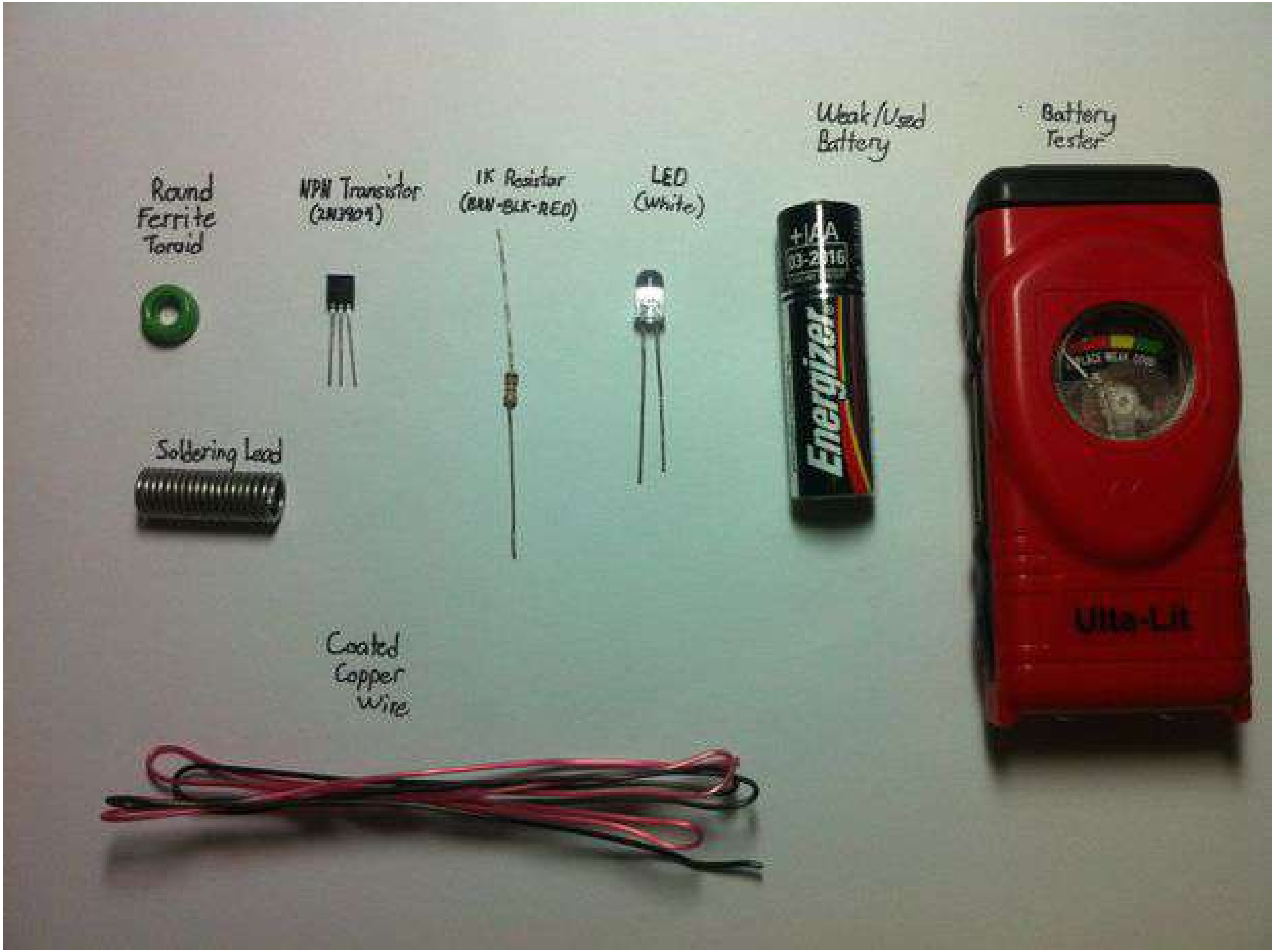

LED Terminals
Flat
+
Anode
-
Cathode
2N3904 NPN Transistor Terminals
E B C
E = Emitter
B = Base
C = Collector
B
C
E



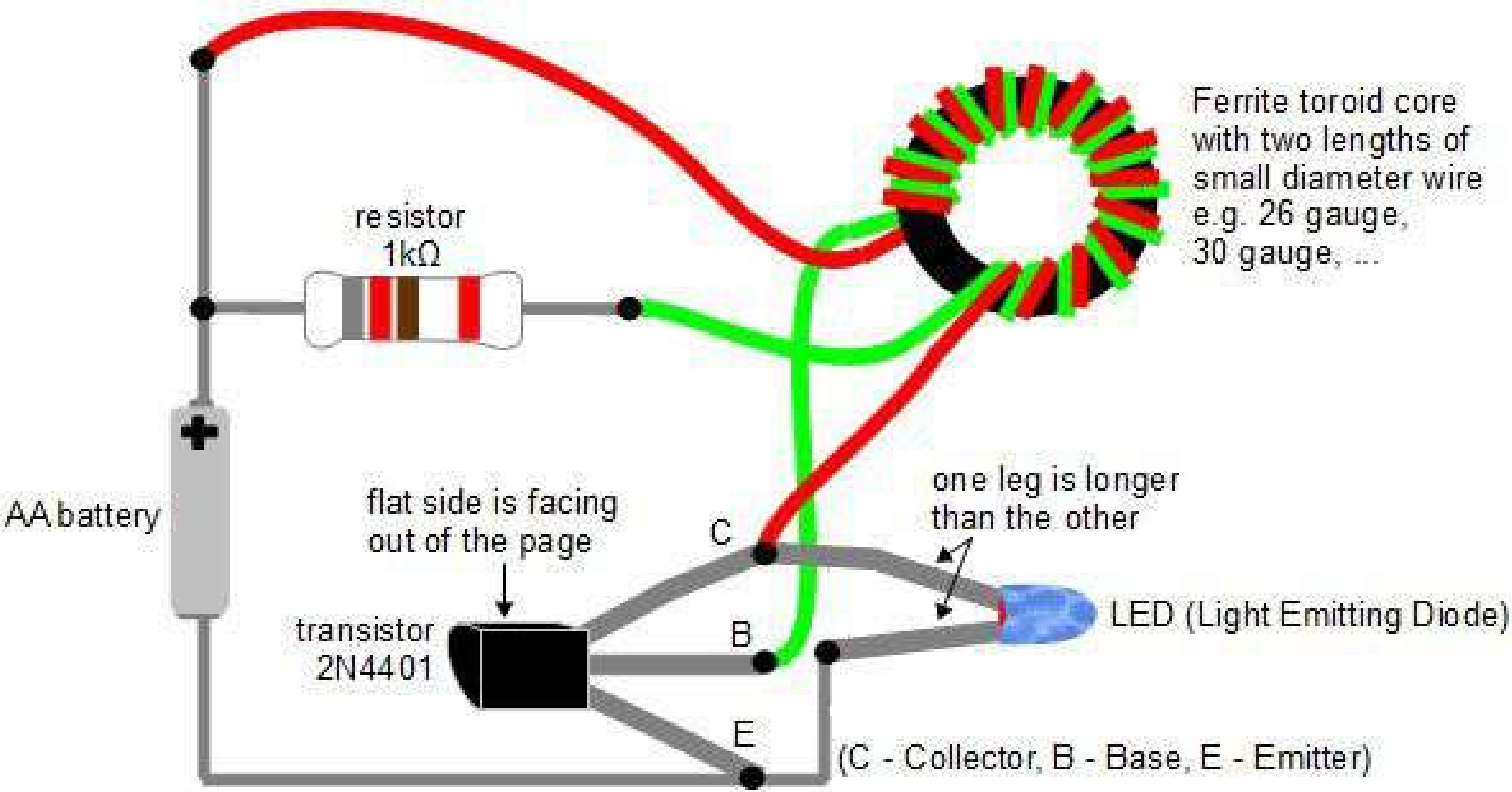
2N3904 NPN Transistor
Terminals
2N39
04
E B C
E = Emitter
B = Base
C = Collector

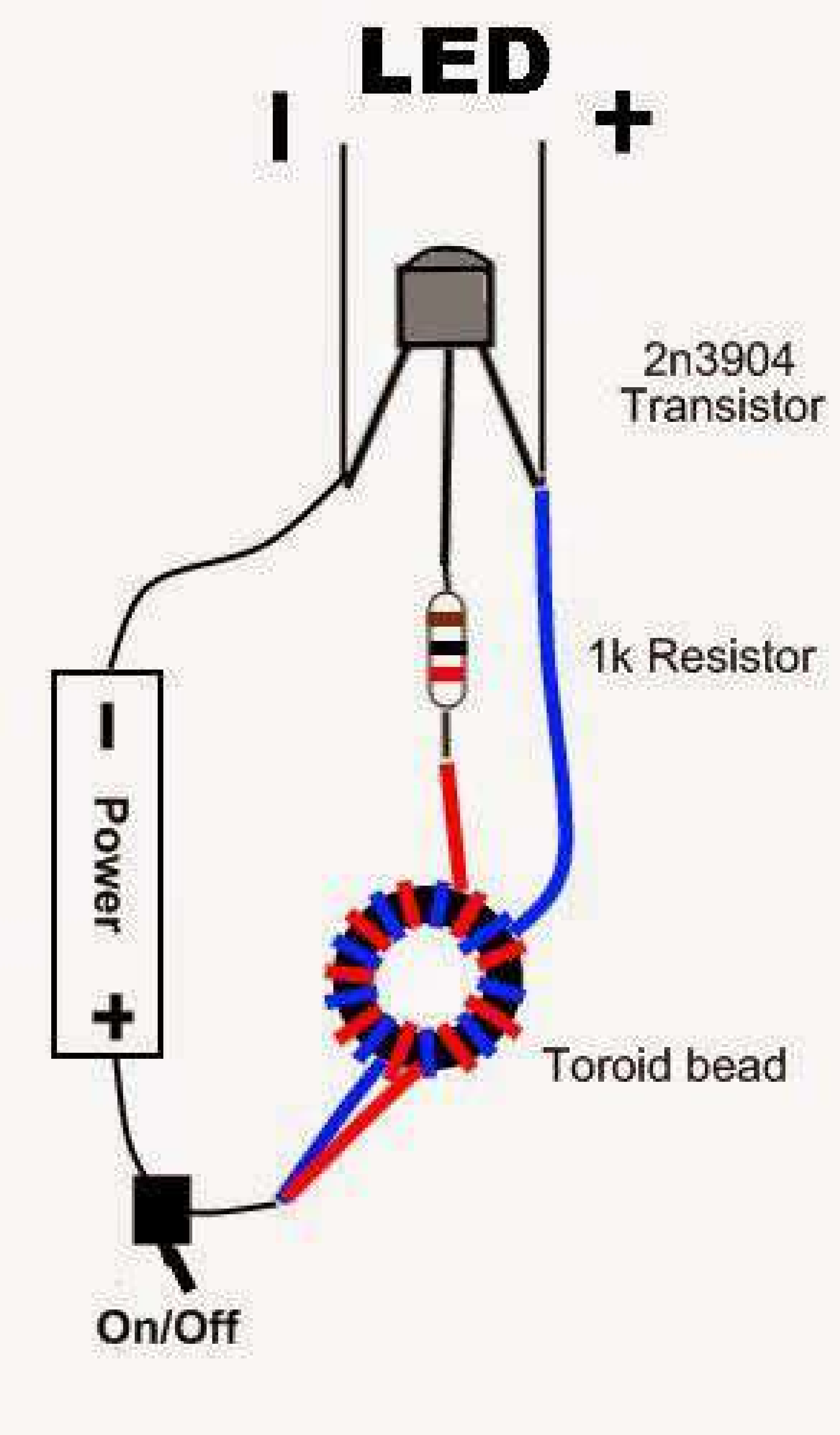


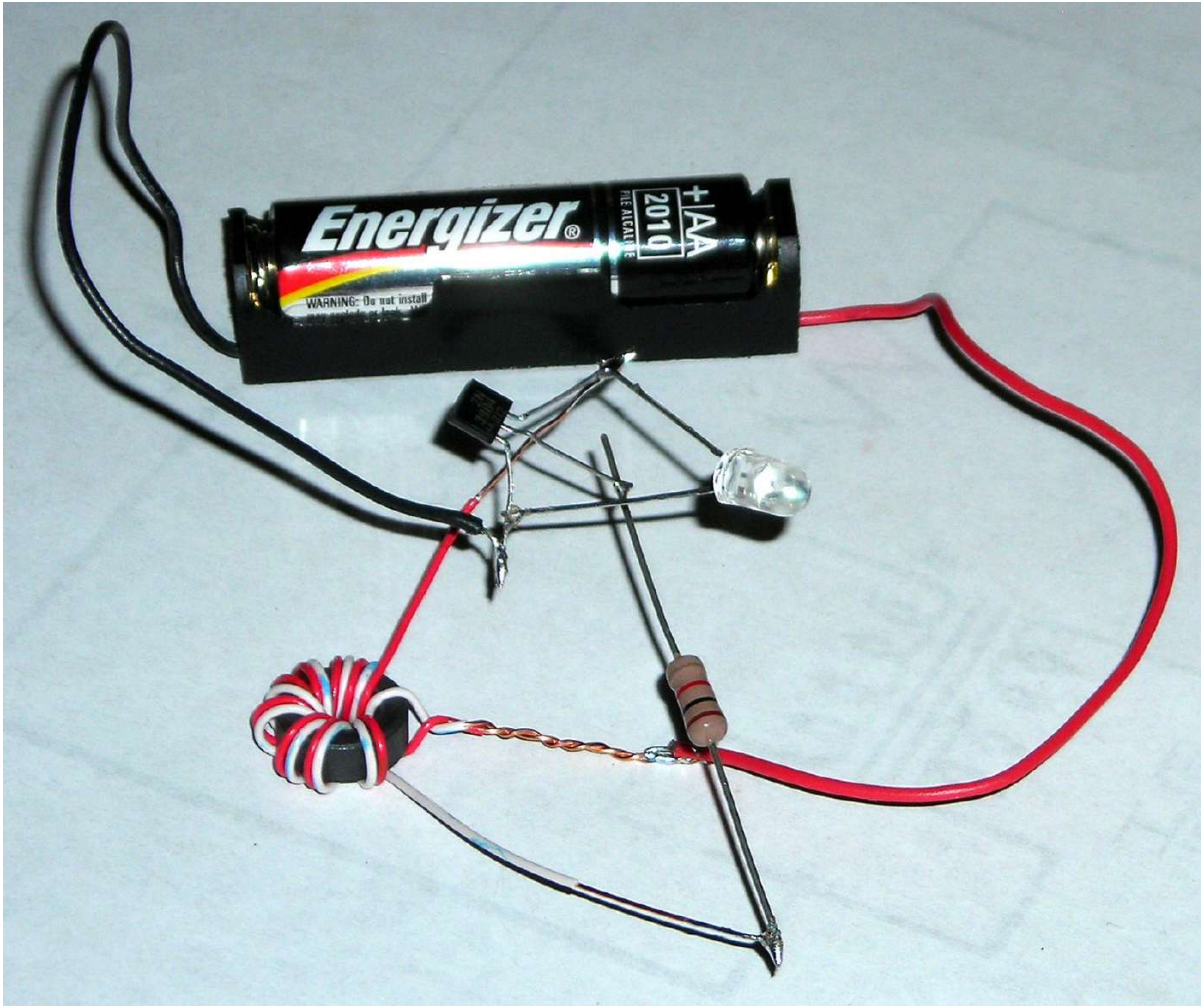

Transistor Terminals
E B C
2N3904
(NPN Transistor)
LED Terminals
Negative Side (Cathode)
Flat Edge
Short Wire
Postive Side (Anode)
Long Wire

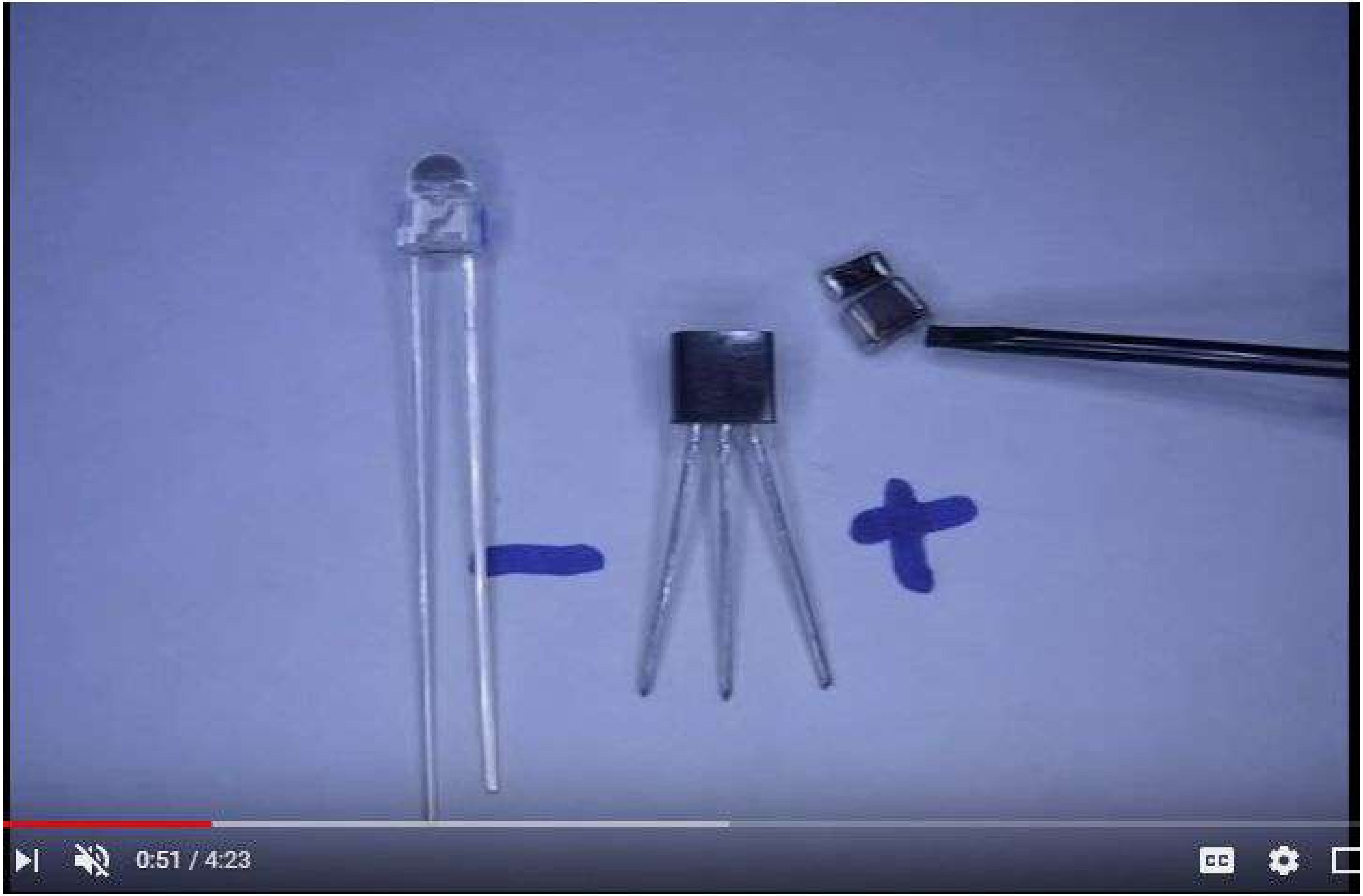


Round Ferrite Toroid
NPN Transistor (2N3904)
1K Resistor (BRN-BLK-RED)
LED (White)
Weak/Used Battery
Battery Tester
Soldering Lead
Coated Copper Wire
+AA
Energizer
Ulta-Lit

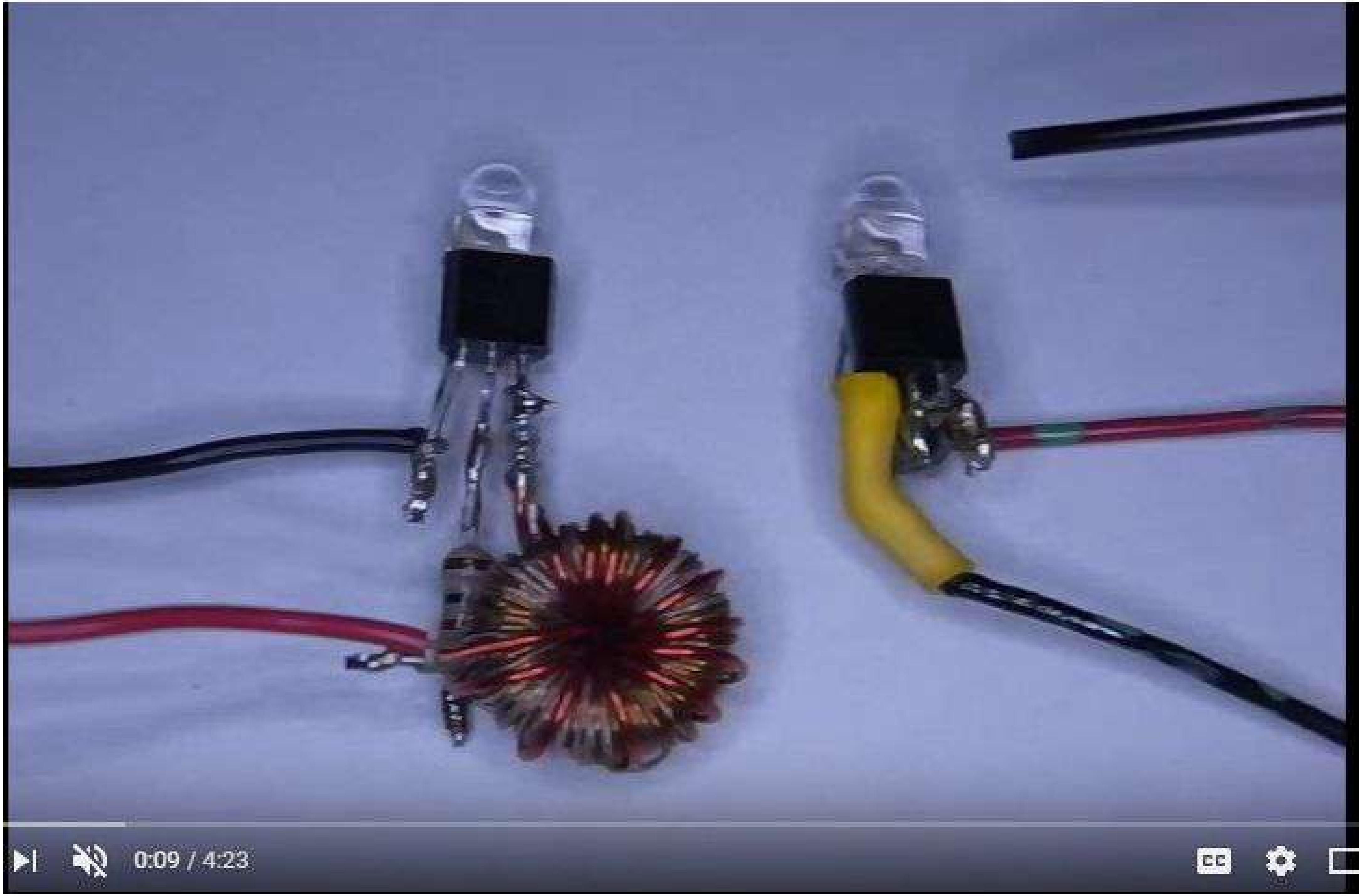

Ferrite toroid core
with two lengths of
small diameter wire
e.g. 26 gauge,
30 gauge, ...
resistor
1kΩ
AA battery
flat side is facing
out of the page
transistor
2N4401
C
B
E
one leg is longer
than the other
LED (Light Emitting Diode)
(C - Collector, B - Base, E - Emitter)

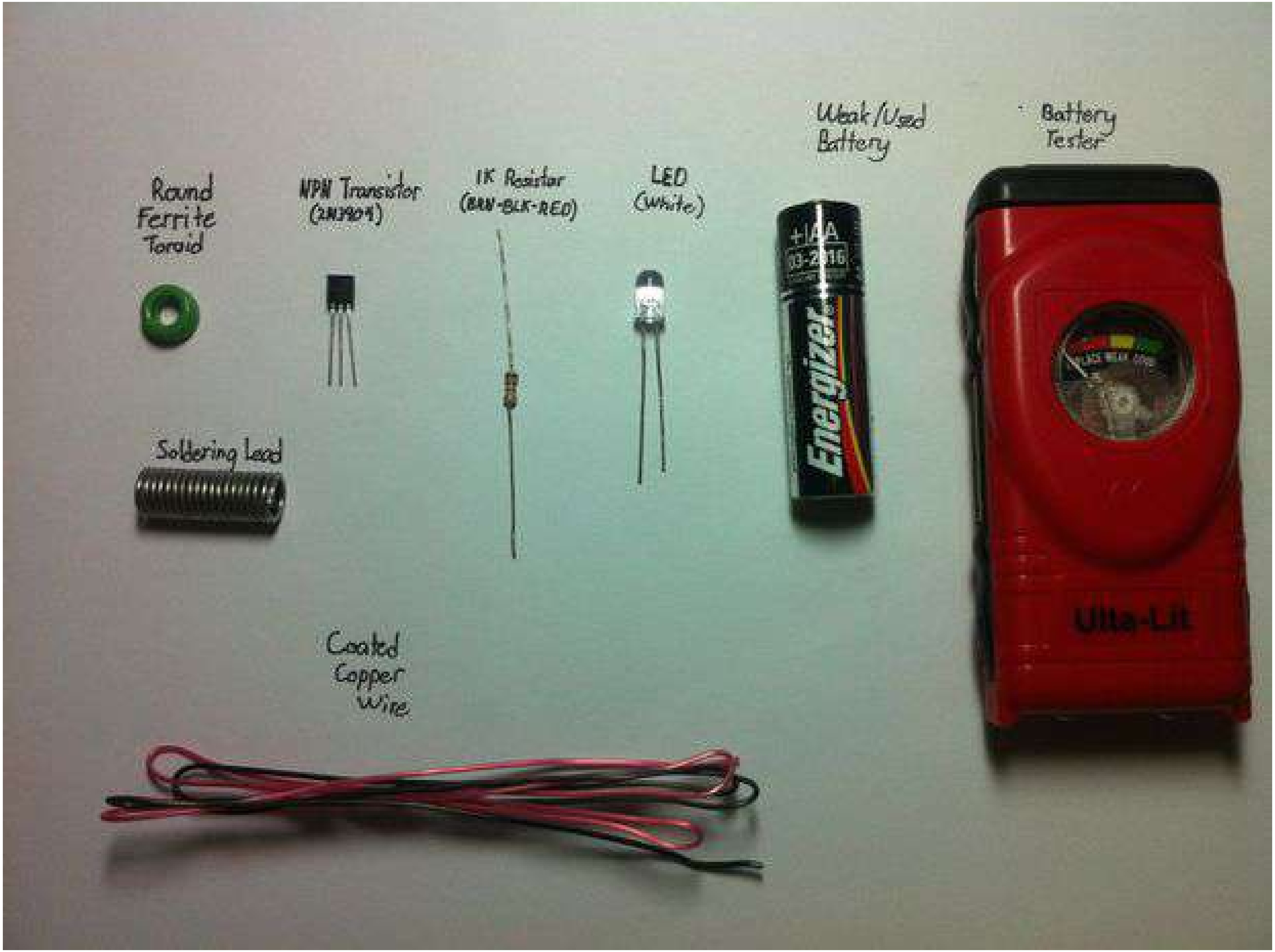

LED
I
+
2n3904
Transistor
1k Resistor
−
Power
+
Toroid bead
On/Off

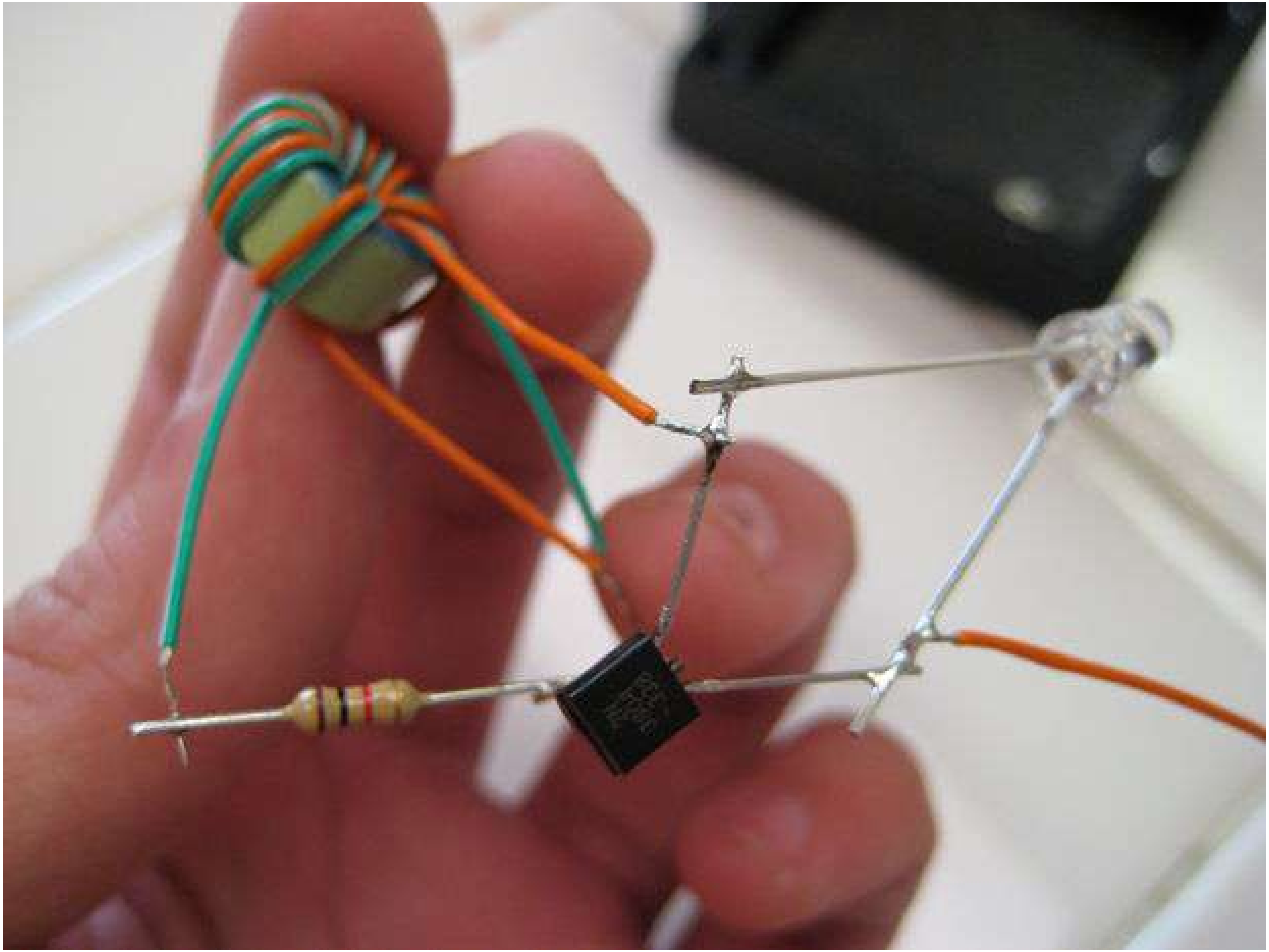

Energizer®
WARNING: Do not install
+
AA
2010

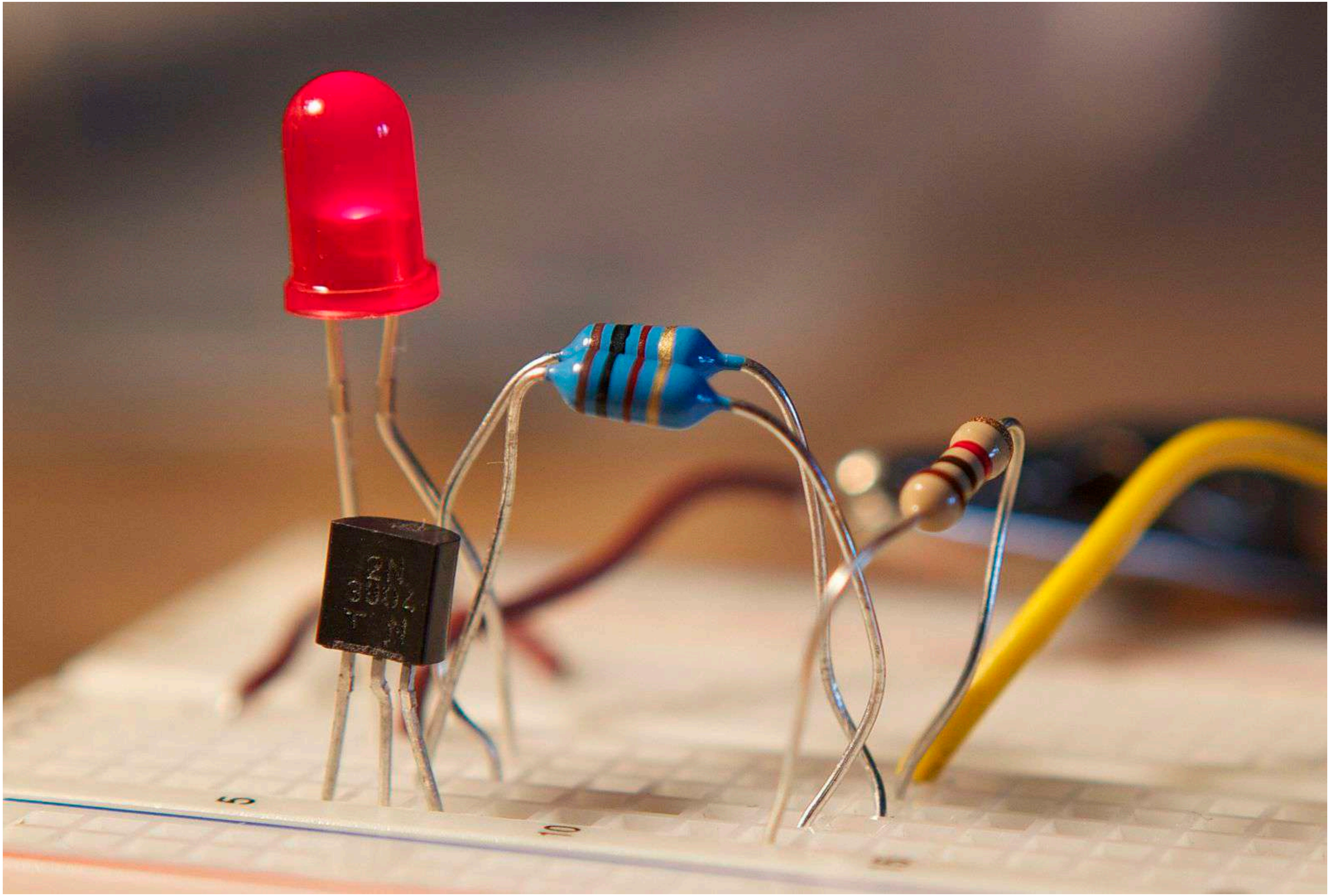

-
+
0:51 / 4:23

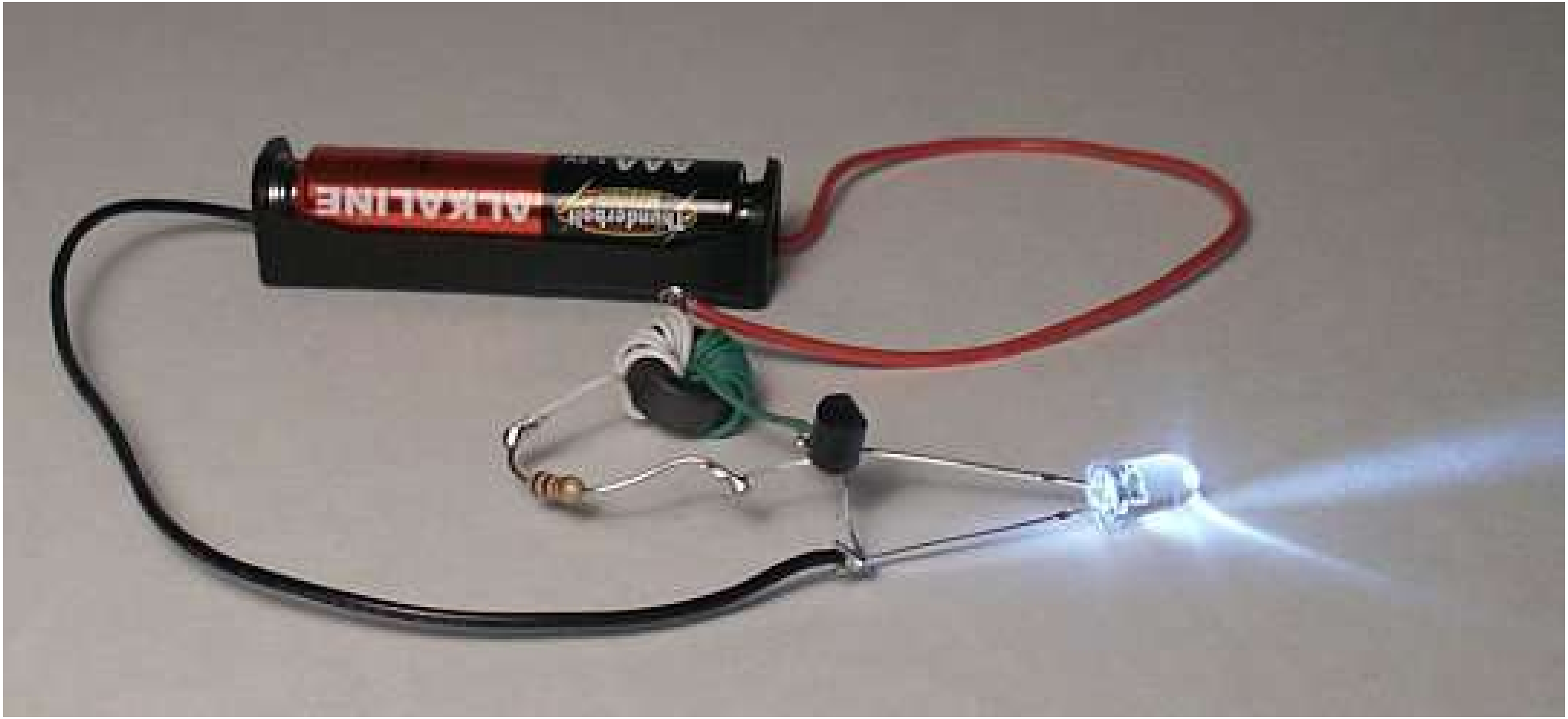

3:25 / 4:23
CC

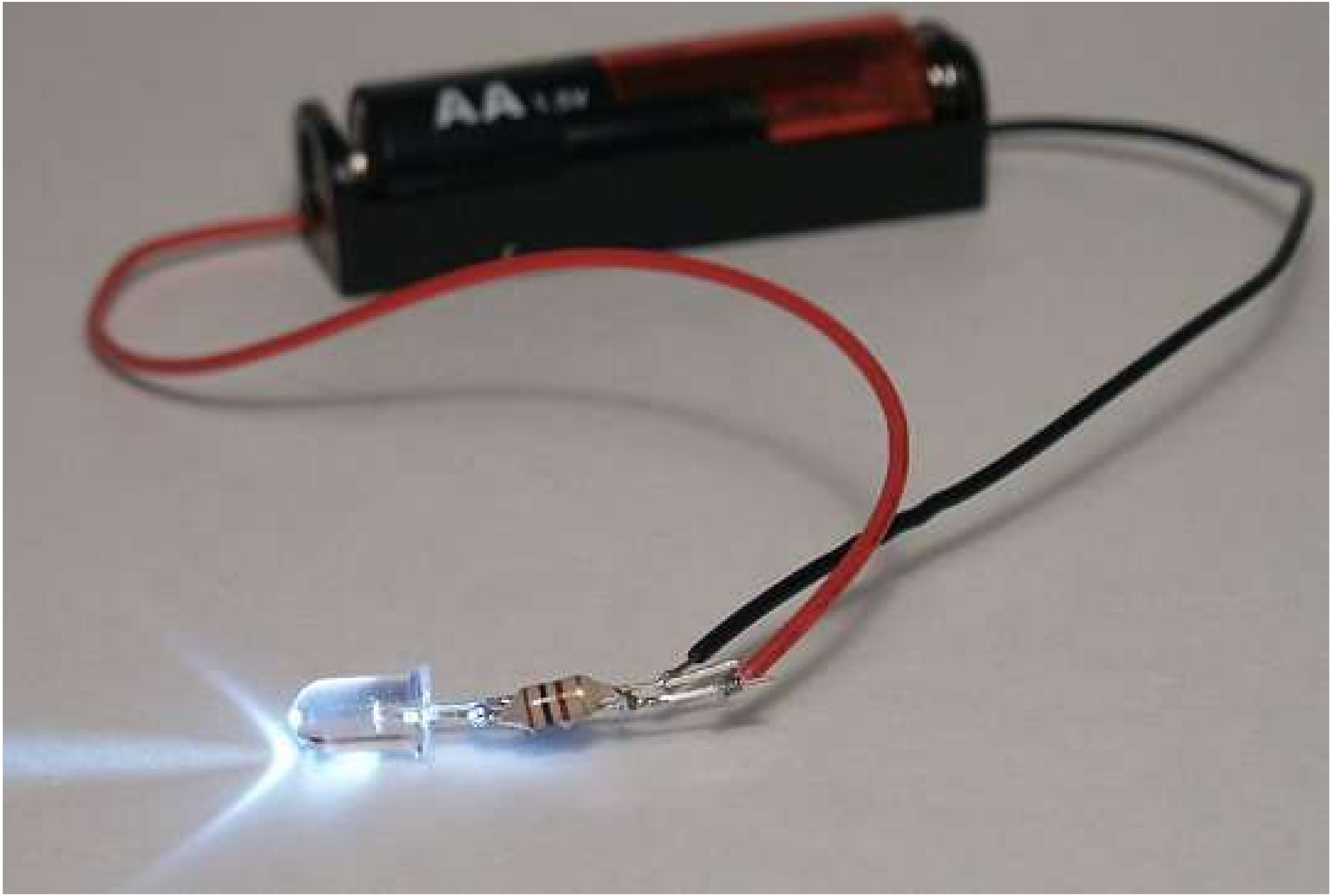

0:09 / 4:23

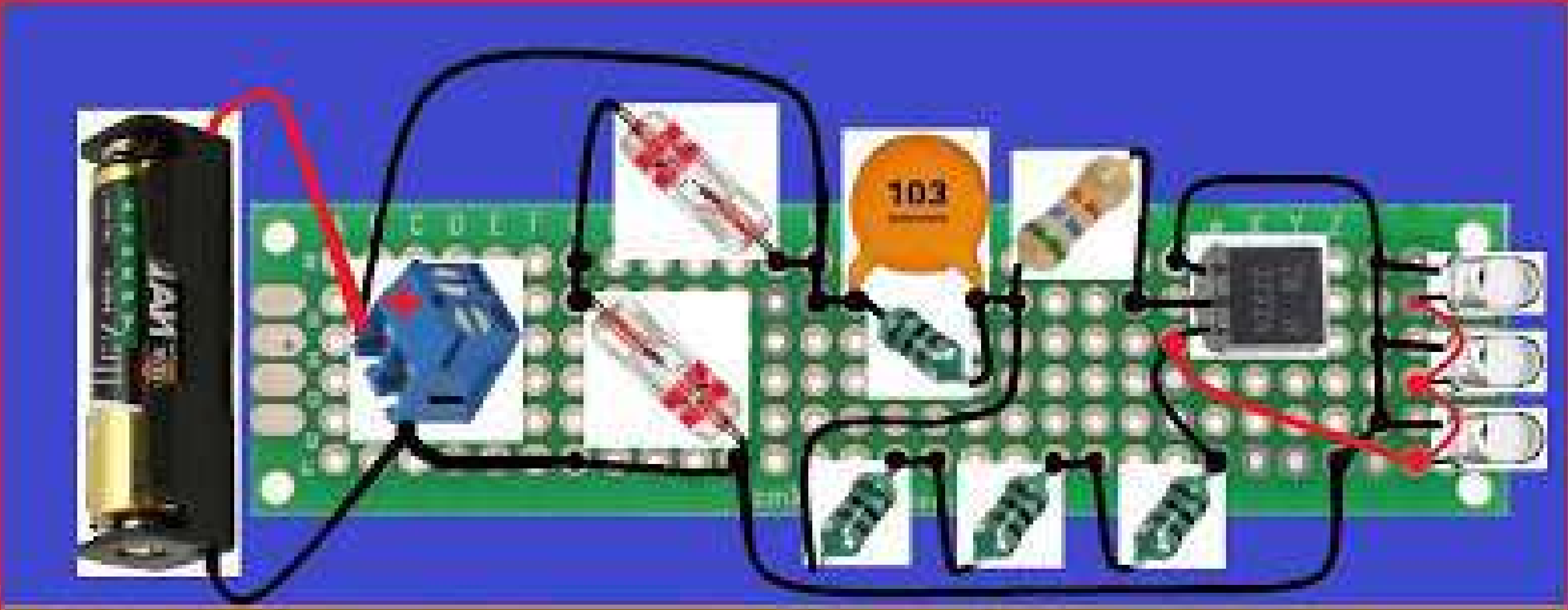

Round Ferrite Toroid
NPN Transistor (2N3904)
1K Resistor (BRN-BLK-RED)
LED (White)
Weak/Used Battery
Battery Tester
Soldering Lead
Coated Copper Wire
+AA
Energizer




2N
5
10


ALKALINE


AA



3* Axial lead inductor 82uH 1/4W

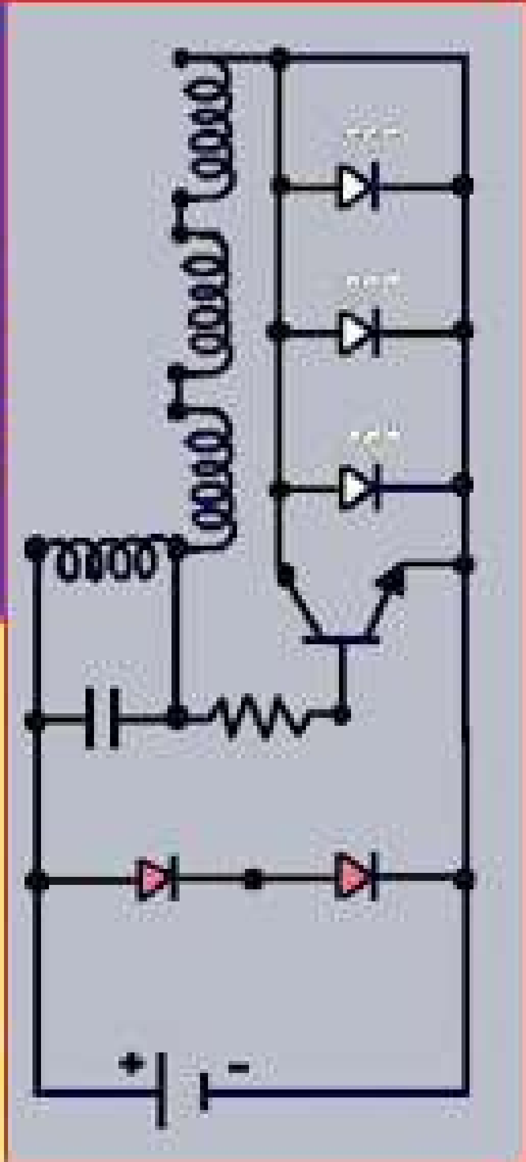
1* 10nf ceramic capacitor 103

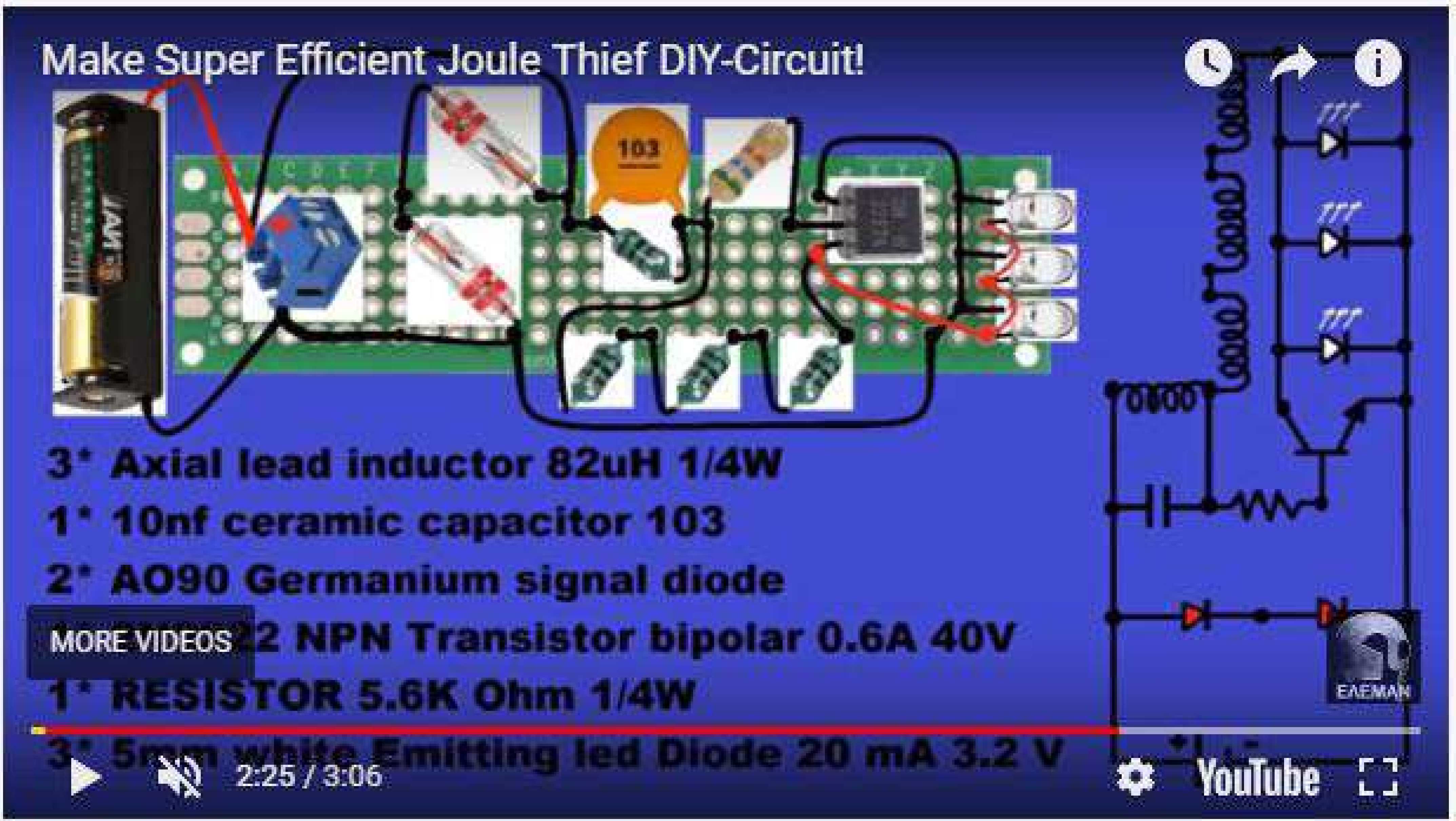
2* AO90 Germanium signal diode

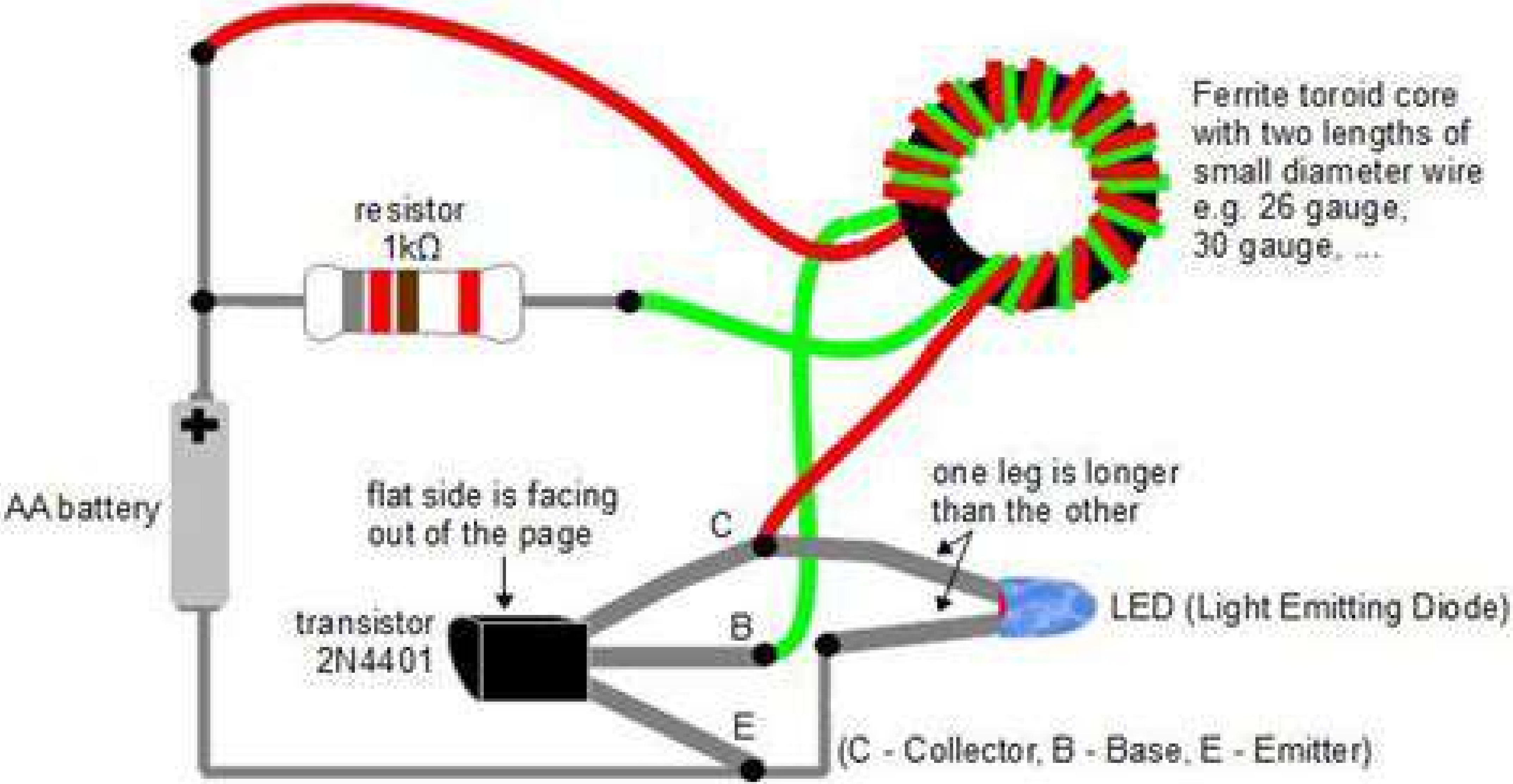
1* 2N2222 NPN Transistor bipolar 0.6A 40V

1* RESISTOR 5.6K Ohm 1/4W

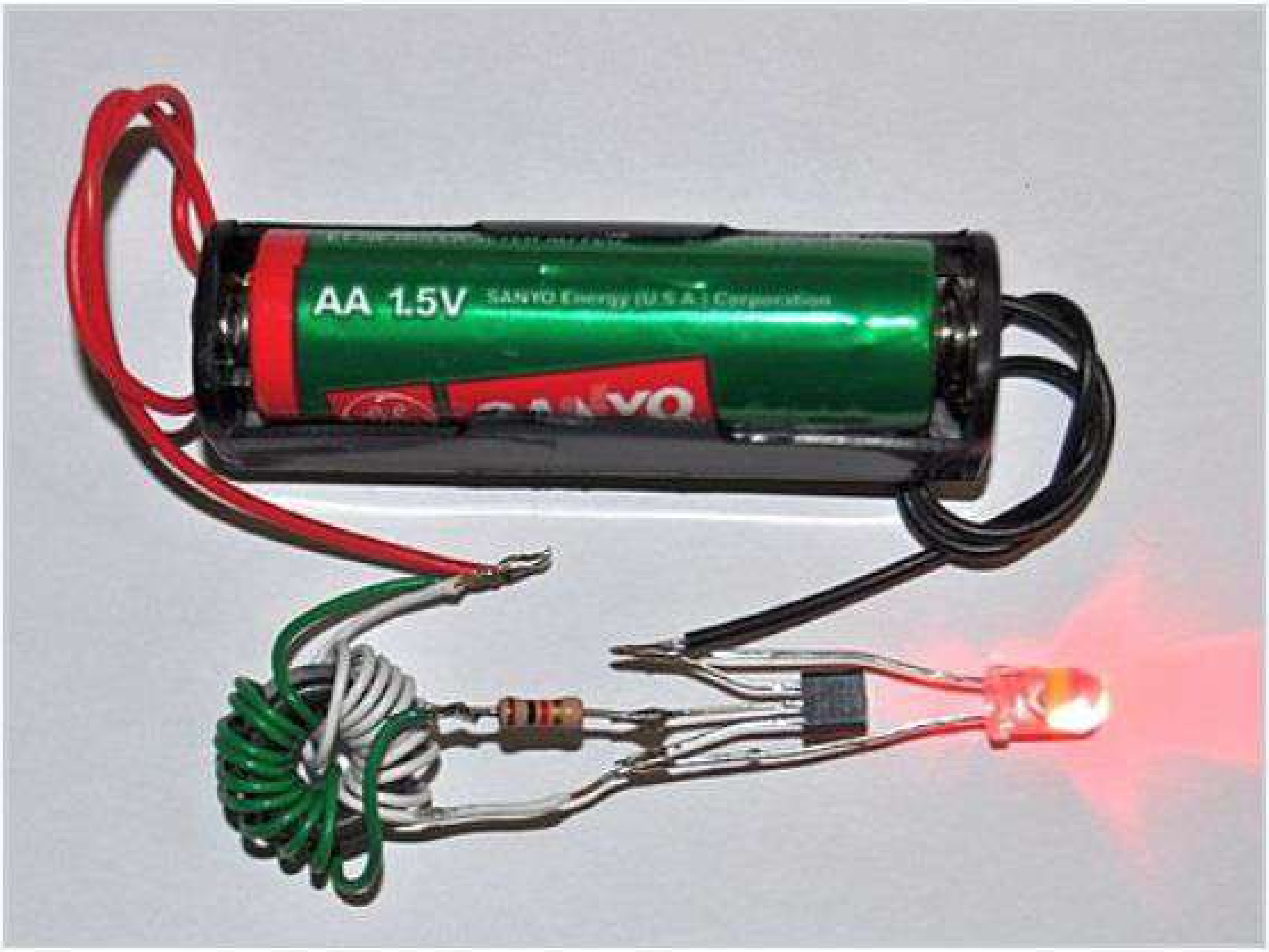
3* 5mm white Emitting led Diode 20 mA 3.2 V




Make Super Efficient Joule Thief DIY-Circuit!
103
3* Axial lead inductor 82uH 1/4W
1* 10nf ceramic capacitor 103
2* AO90 Germanium signal diode
22 NPN Transistor bipolar 0.6A 40V
MORE VIDEOS
1* RESISTOR 5.6K Ohm 1/4W
3* 5mm white Emitting led Diode 20 mA 3.2 V
2:25 / 3:06
YouTube
ΕΛΕΜΑΝ

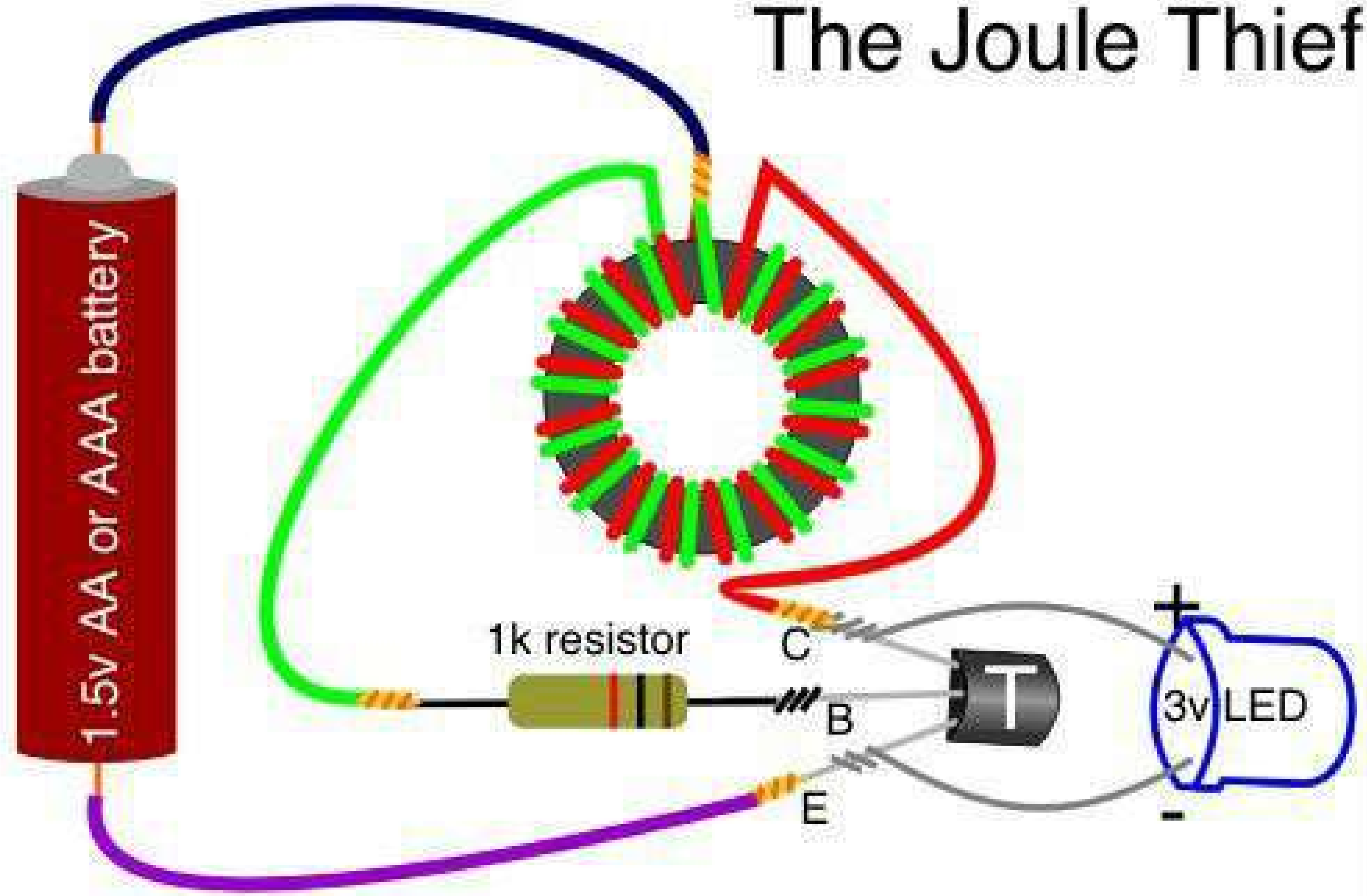


Ferrite toroid core
with two lengths of
small diameter wire
e.g. 26 gauge,
30 gauge, ...
resistor
1kΩ
AA battery
flat side is facing
out of the page
transistor
2N4401
C
B
E
one leg is longer
than the other
LED (Light Emitting Diode)
(C - Collector, B - Base, E - Emitter)



A conventional joule thief, shows components and how they are connected. This example uses a red LED. A ferrite toroid is wound to form a coil with primary (white) and feedback (green) windings. A 2N2222A transistor and 1000 ohm resistor are used.

The Joule Thief

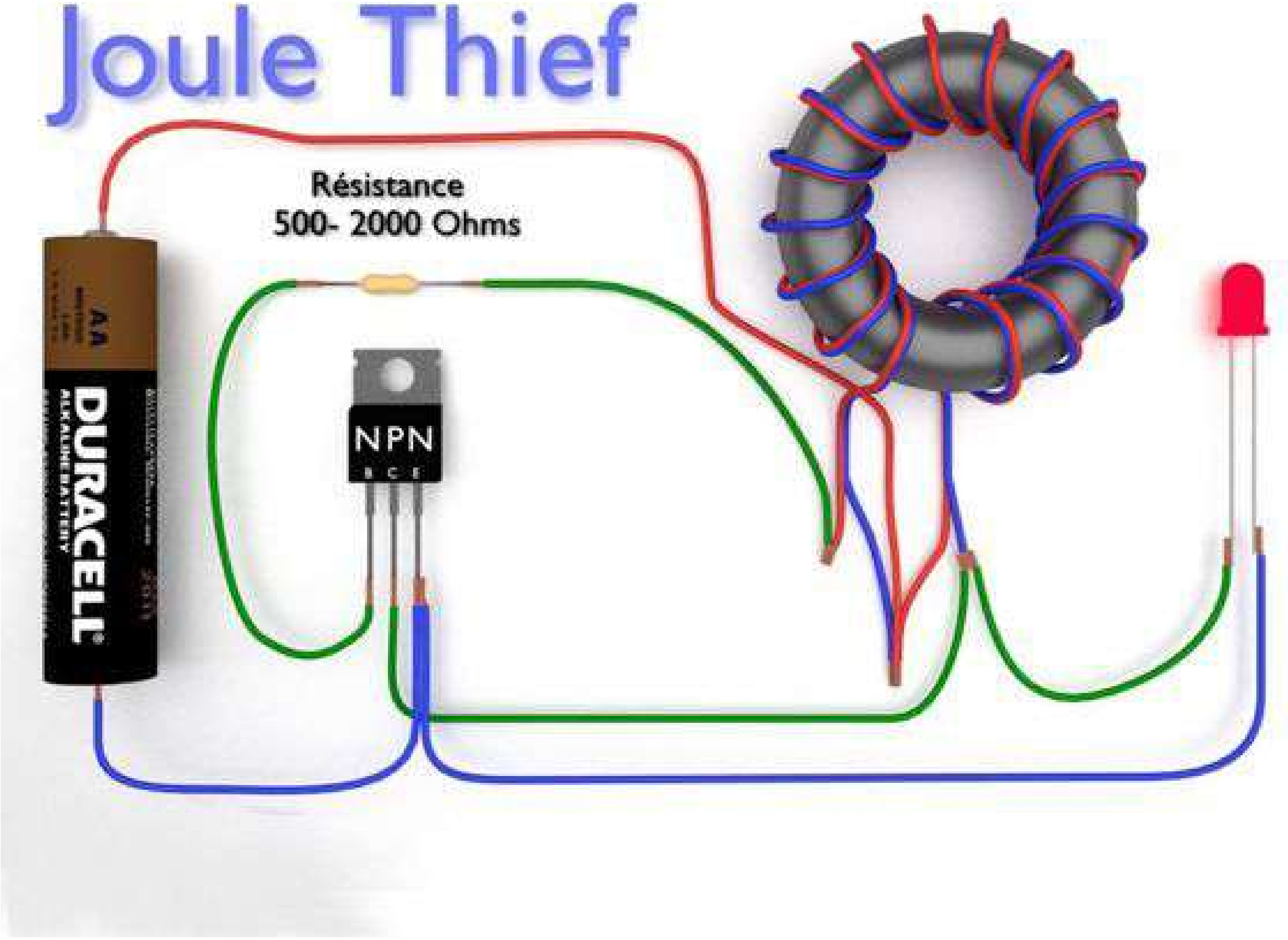


Transistor shown (T) is 2N3904 (can also use 2N2222).

Note LED pins - negative is shorter and has flat on bulb edge.

2 wires round ferrite ring are wound together, then start of one joined to end of other.

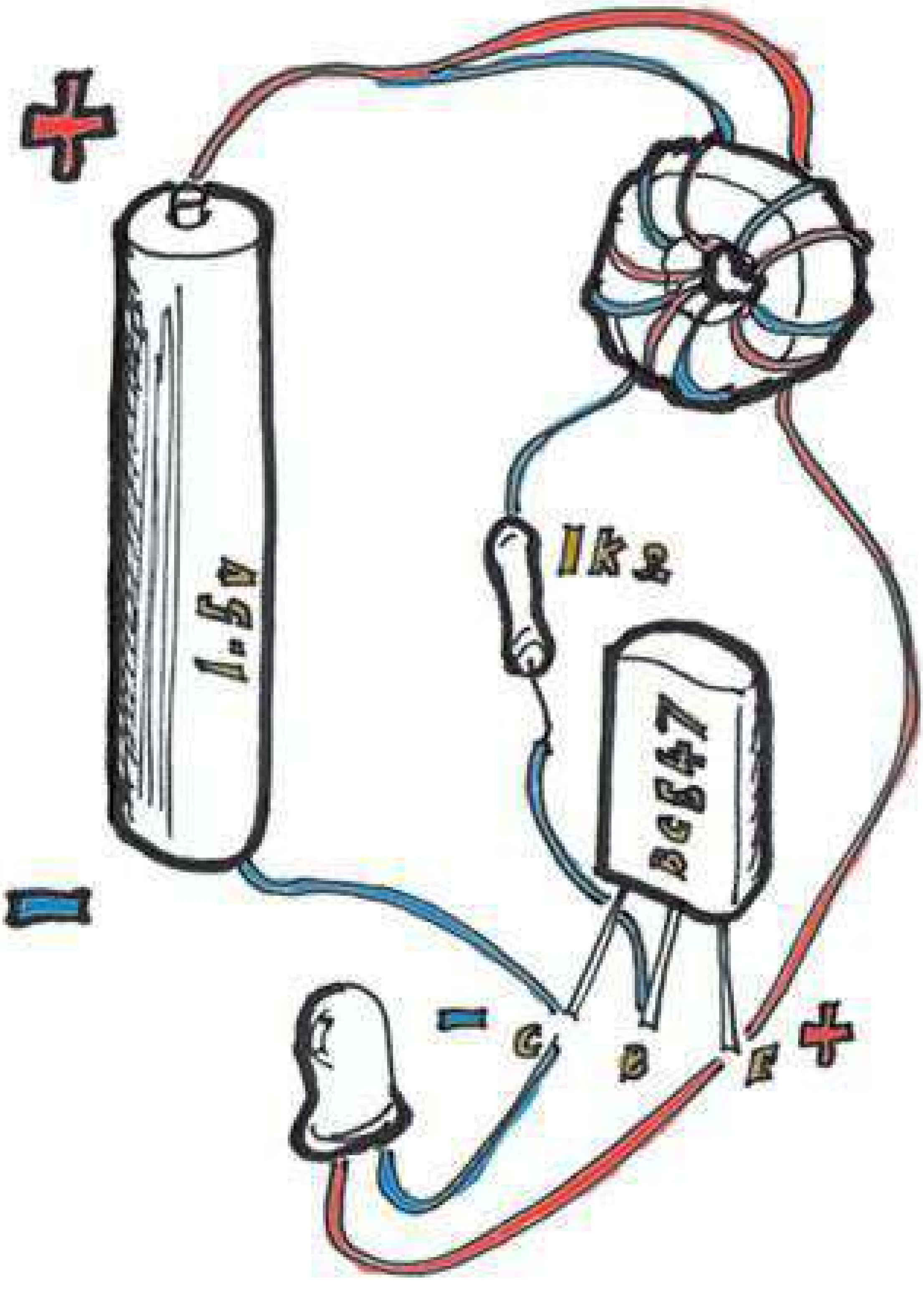
Try adding more and more LEDs...

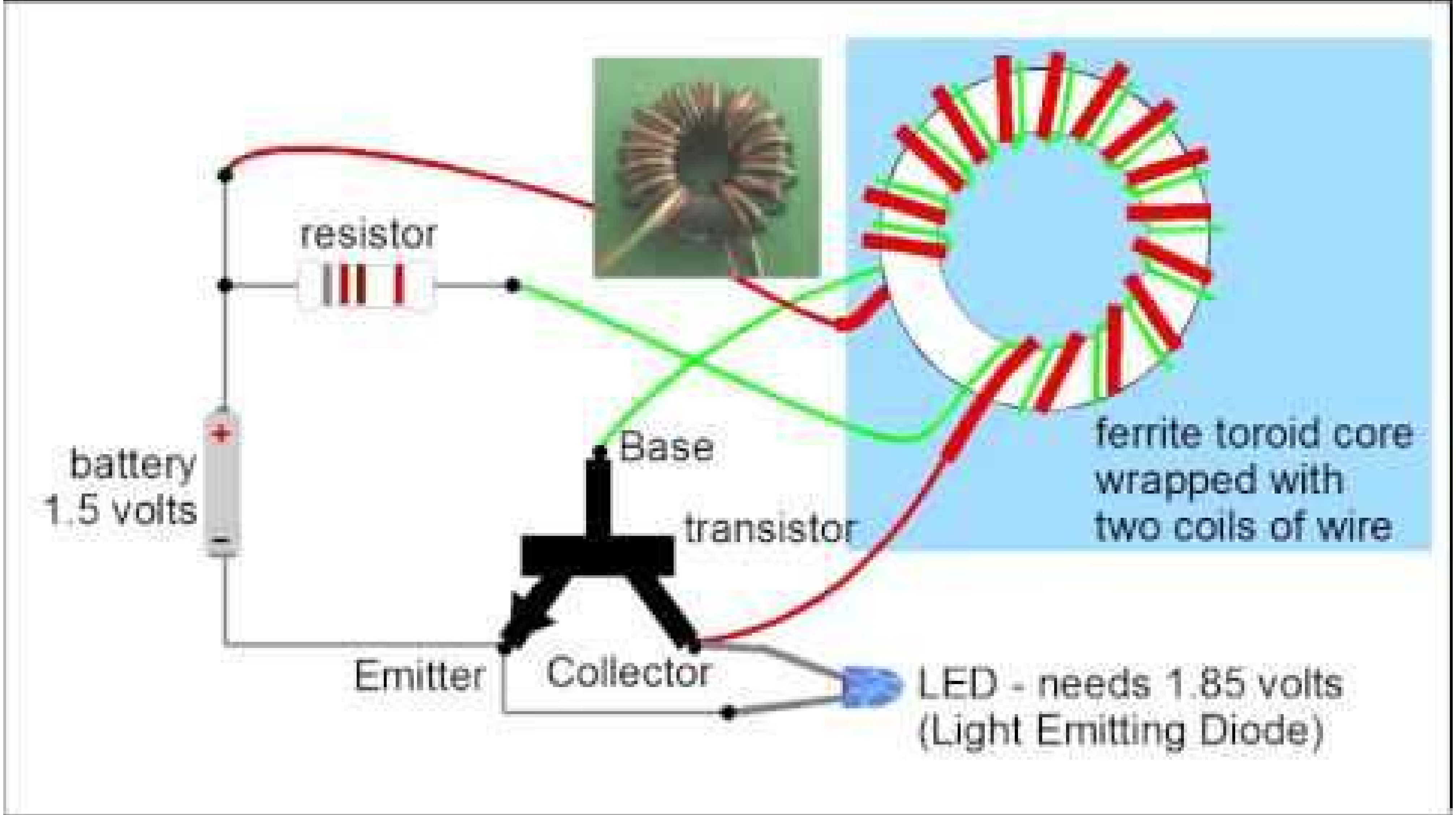


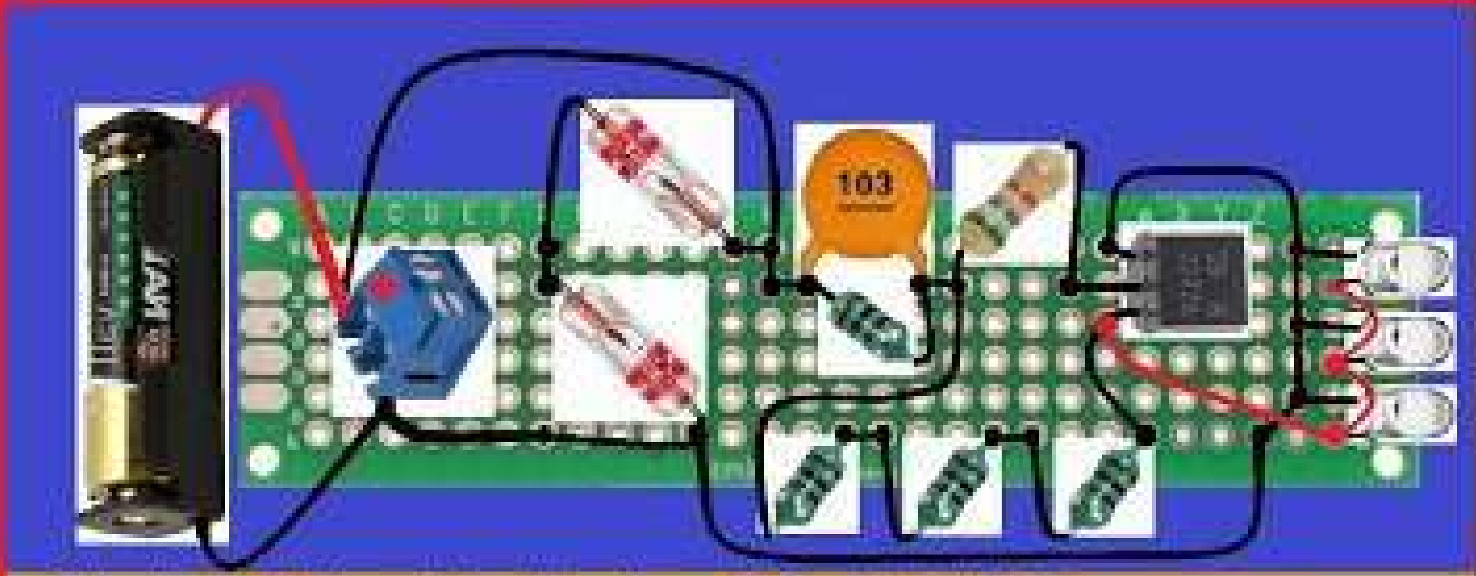
Joule Thief
Résistance
500- 2000 Ohms
NPN
B C E
AA
DURACELL
ALKALINE BATTERY

Its a Rubbish Challenge
Dog Light

Joule Thief
electronics circuit




resistor
battery
1.5 volts
Base
transistor
Emitter
Collector
ferrite toroid core
wrapped with
two coils of wire
LED - needs 1.85 volts
(Light Emitting Diode)



3* Axial lead inductor 82uH 1/4W

1* 10nf ceramic capacitor 103

2* AO90 Germanium signal diode

1* 2N2222 NPN Transistor bipolar 0.6A 40V

1* RESISTOR 5.6K Ohm 1/4W

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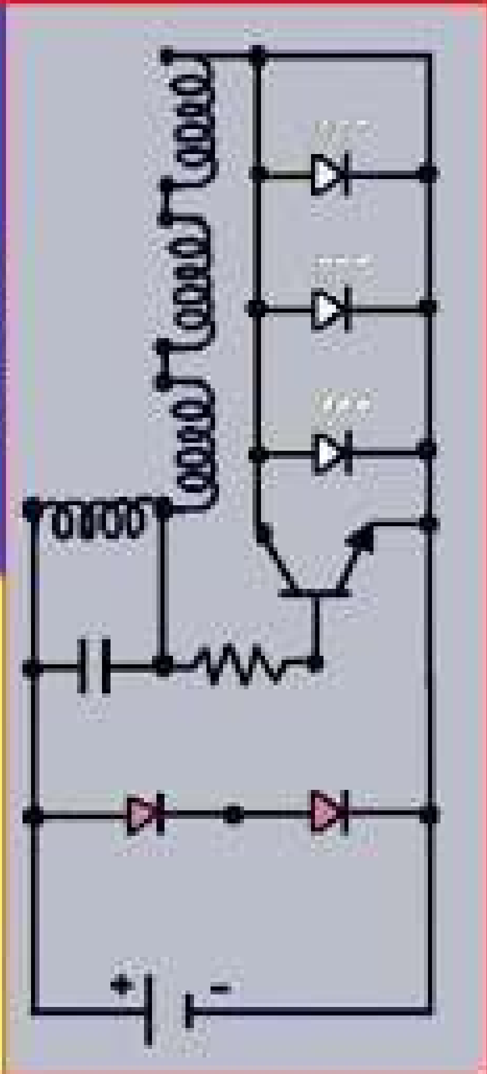
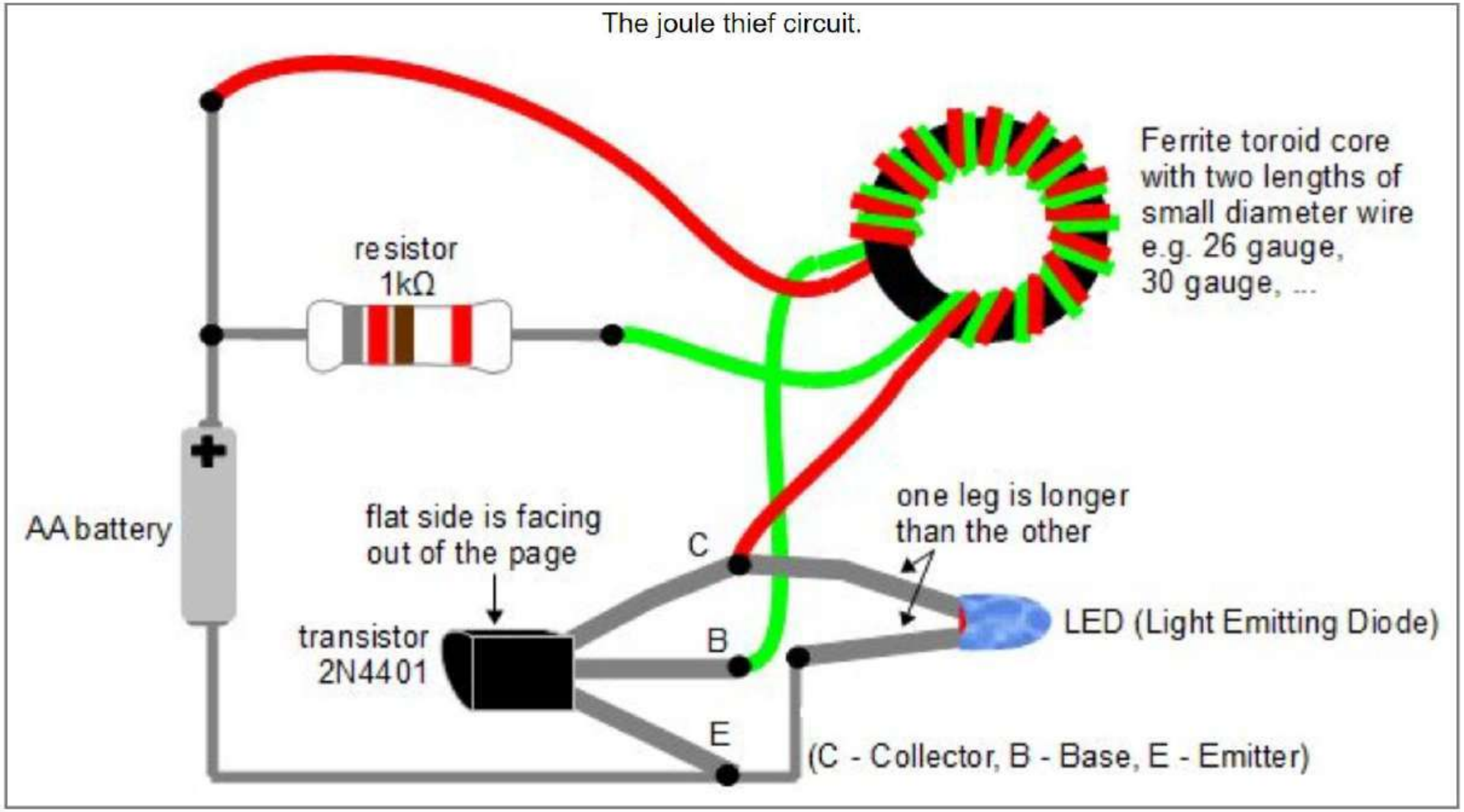



AA 1.5V
SANYO Energy (U.S.A.) Corporation

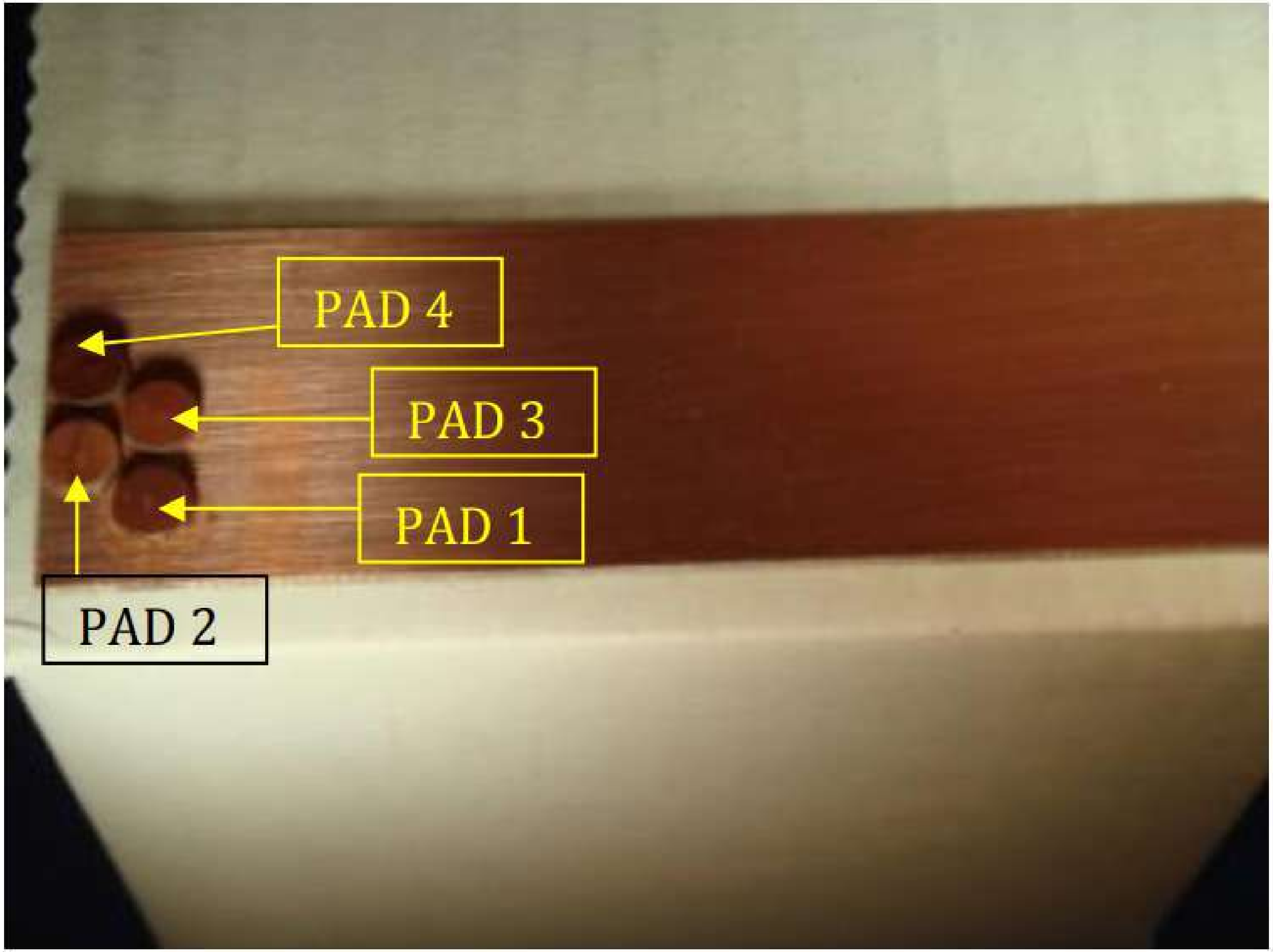


Transistor - The legs of the transistor can be determined by noticing that there's a flat side to the transistor case. See the diagram above. A large number of transistors have been reported to work: 2N4401, NET123AP, BC547B, 2SC2500, BC337, PN2222, to name just a few.

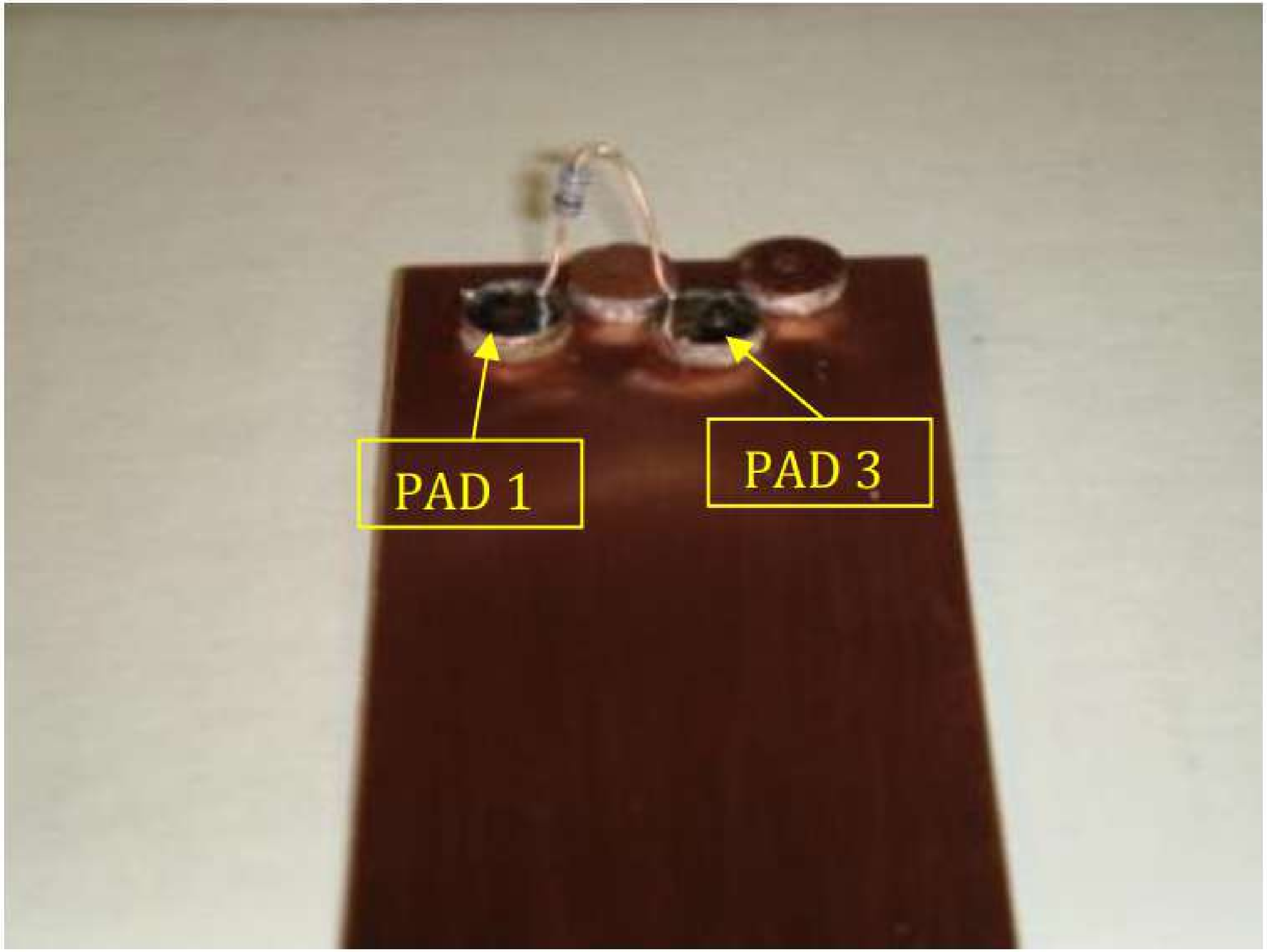
LED - One leg of the LED is longer than the other leg. Use this to determine which one goes where. See the diagram above.

Resistor - The diagram says use a 1 kilo ohm resistor but I've used an 820 ohm one just fine. I've also seen a 2 kilo ohm one in use. Use whatever works for you. You can also use a potentiometer (a variable resistor) so that you can easily adjust it to select the resistance that gives the best light.

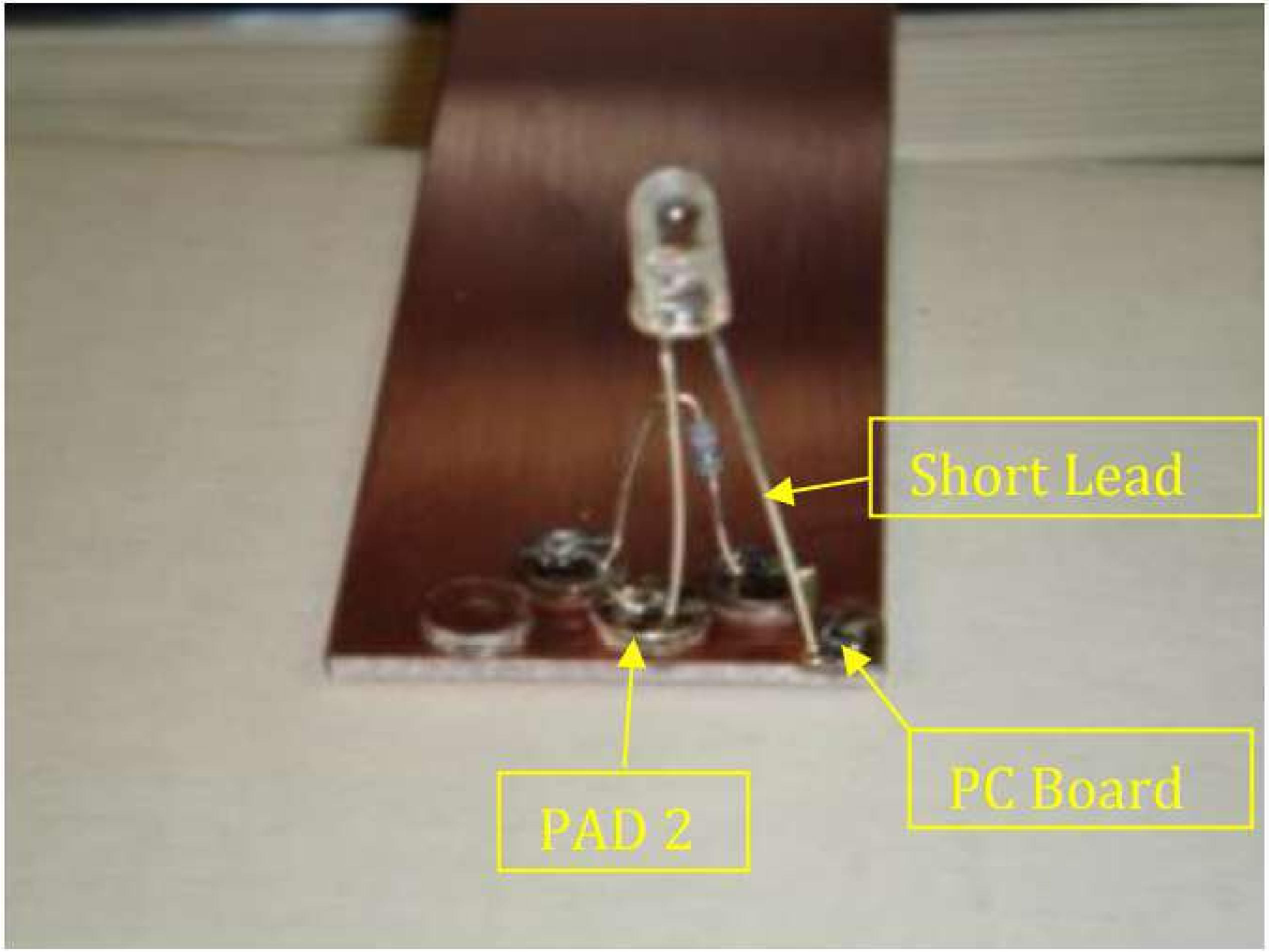
Toroid ferrite core - Some people have gotten these by opening up compact fluorescent lightbulbs (CFLs). I took mine out of some device whose original function I don't know. To get it working, my first one had just 13 turns for each wire and I used a 30 gauge wire and a 26 gauge wire. The wire must be insulated. A variety of number of turns will work. This is something you can play with. Look at the diagram carefully to determine where the wires connect to.



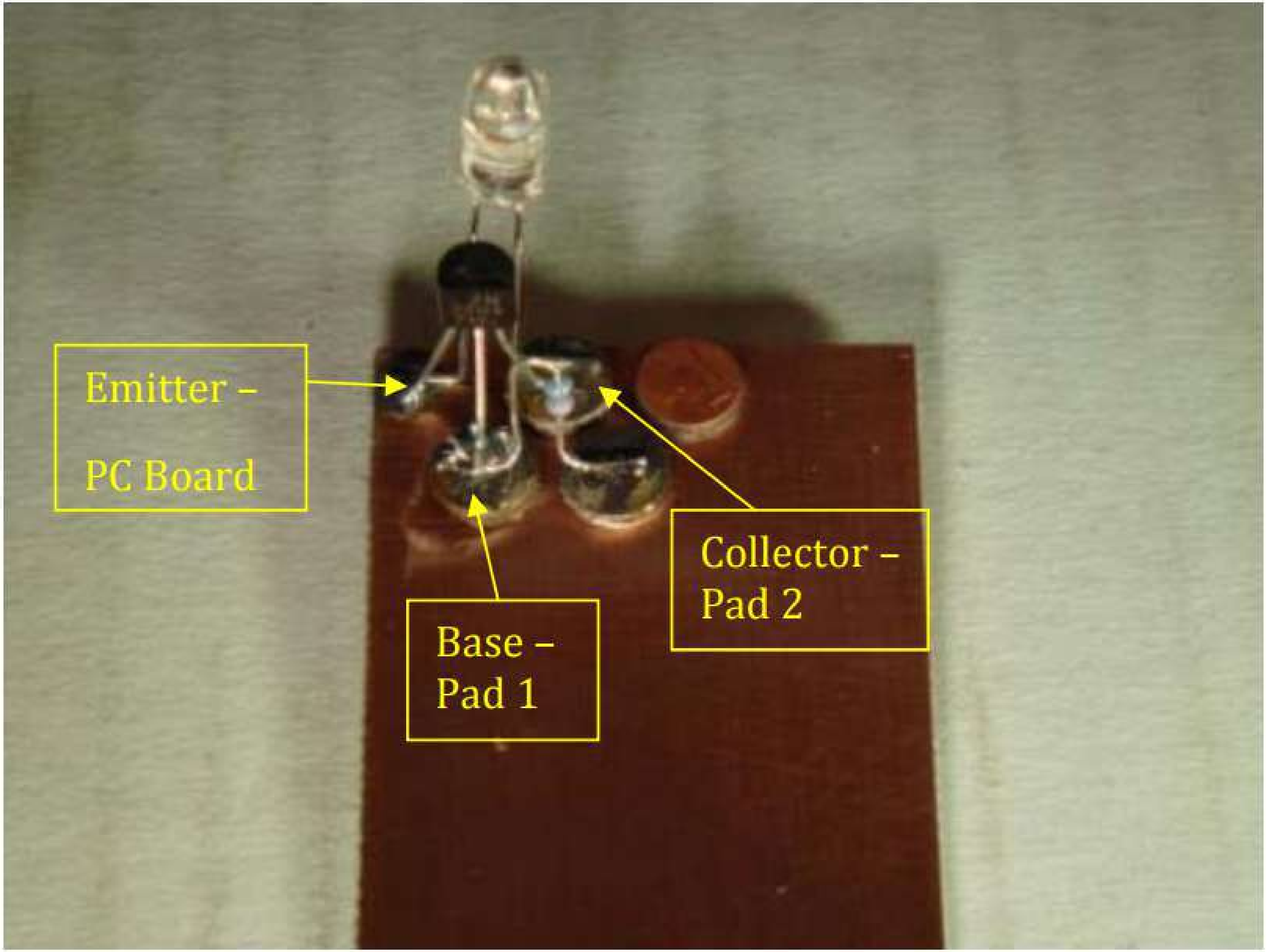
Superglue four pads to the PC board. Make sure they are not touching each other. You should have roughly 1/8 inch between the pads. Apply a small drop of superglue on the board and press the pad onto the board with the small dimple up. Use a small screwdriver to hold pressure on the pad until the glue dries (about 10 seconds).



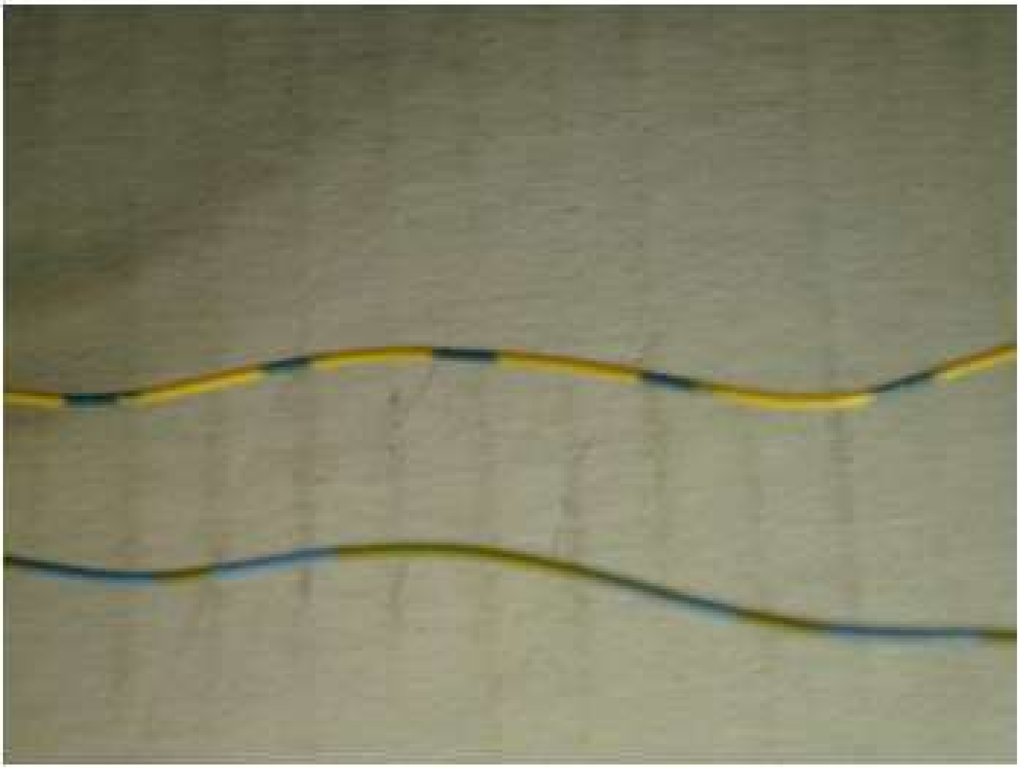
Solder the 1,000 ohm resistor onto pads 1 and 3. When soldering all components, place a 90-degree bend on the ends of the component where they touch the pad to allow better soldering. There is no polarity on a resistor.



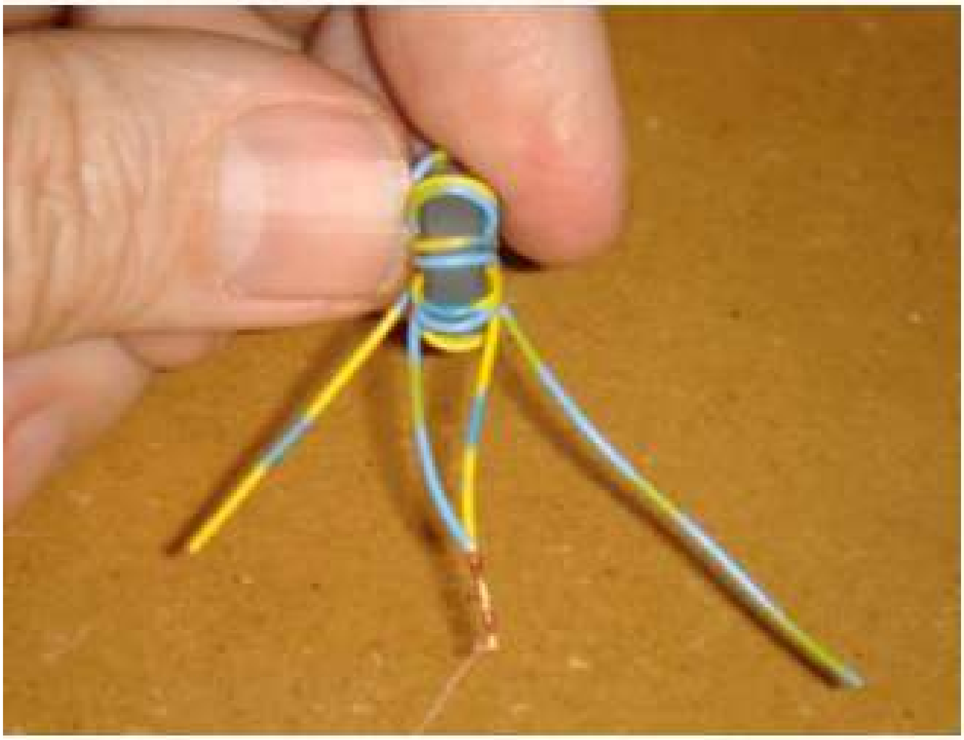
Solder the LED to the board. **VERY IMPORTANT**: Solder the **long lead** to pad 2 and the **short lead** directly to the PC board. The LED will not illuminate of you put it in backwards. If you look into the LED, the anvil shaped part is the lead that gets soldered to the PC board.



Solder the transistor to the board. With the flat part facing you the left lead (emitter) is soldered directly to the PC board. The center lead (base) is soldered to pad 1. The right lead (collector) is soldered to pad 2. Failure to install this part correctly will prevent the Joule Thief from working.



Take the two pieces of wire and **untwist** them if they are twisted. The toroid requires 12 inches of wire. You will wind the toroid with this pair of wires side by side.



Wind the toroid with **9 turns** of the wire. Each turn through the hole in the center counts as one turn. **VERY IMPORTANT:** You must take one wire **from each side of the winding** and twist them together. This makes the transformer windings out of phase. This is critical to operation. Connect one wire of each color.

Solder the twisted wires on the toroid to pad 4. Solder one of the other toroid wires (doesn't matter which one) to pad 2.

Solder the other wire on the toroid to pad 3.

Solder the battery holder. Connect a short piece of wire from the positive terminal (the one without the spring) to pad 4. Solder the negative terminal (the one with the spring) directly to the PC board using a short piece of wire. Use hot glue or some other glue to secure the battery holder to the PC

Step 1 – Wound the Toroid

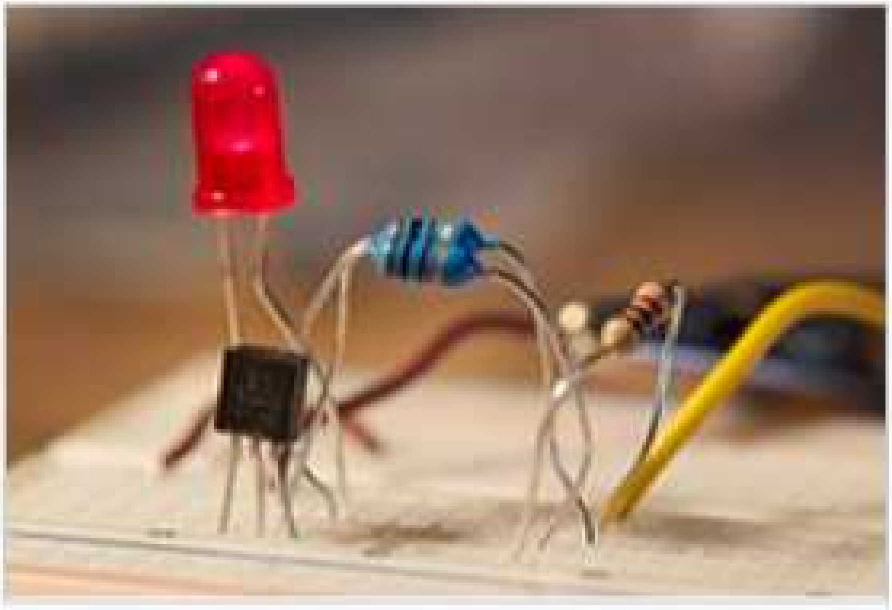
Take the two strands of plastic insulated wire and hold them together. Start off by sticking then through the middle of the toroid until you have 2 cm of wire left to make a connection with later. Keep the two wires together and wrap them around the toroid until you have covered the whole toroid. If you have wire left you can continue until you have about 2 cm of wire free on either side. Remove about a 0.5 cm of the plastic insulation on all four of the wires as in the photo. You have now wound your toroid and we are ready to continue.

Step 2 – Join the two coils of Toroid

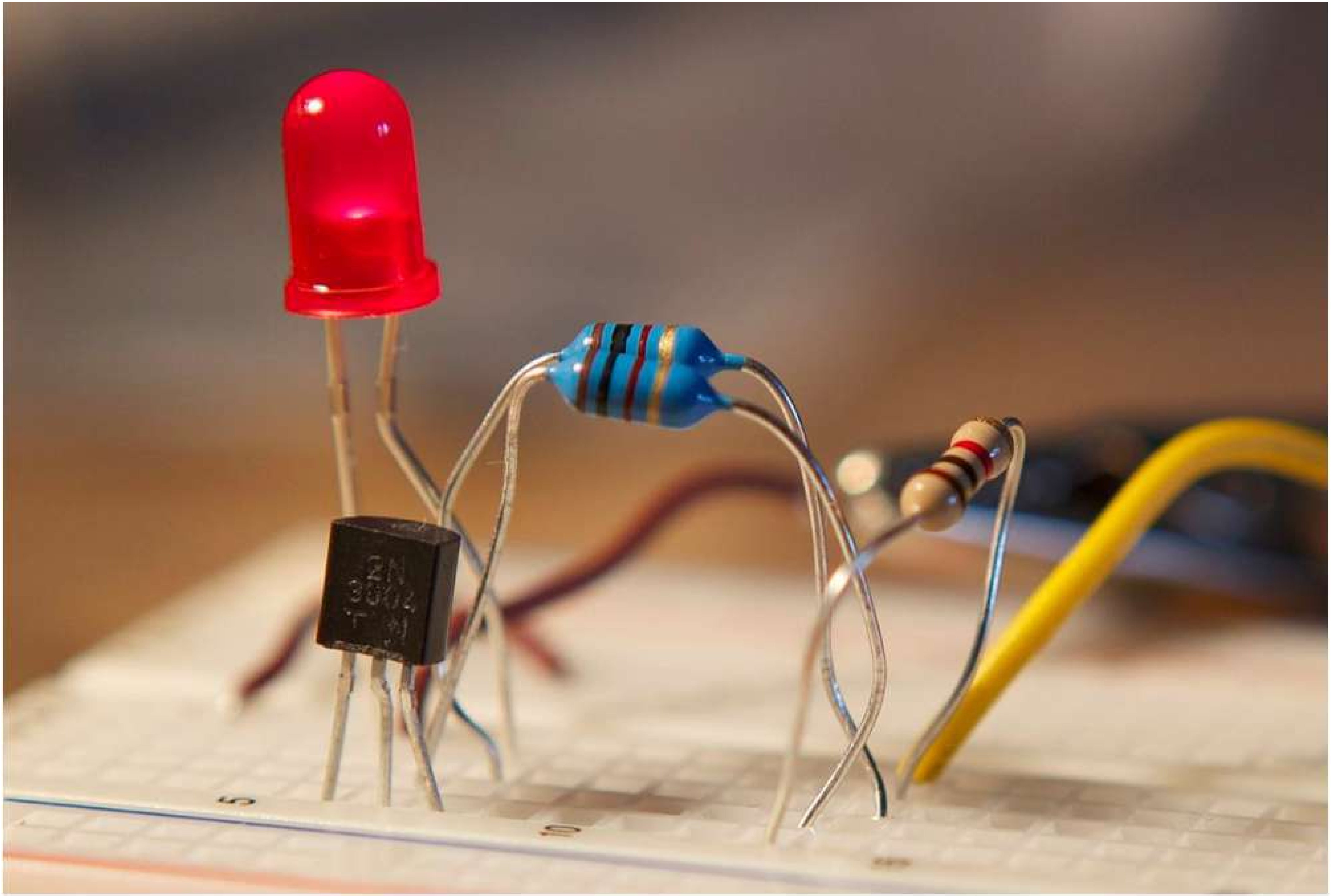
The next step is to join the two coils or windings of the toroid. You may have noticed the two dots next to the toroid windings in the circuit diagram. These two dots indicate the polarity of the transformer and as you can see the two windings are opposite to each other. To make sure that the polarity of our toroid windings are correct we must do the following:

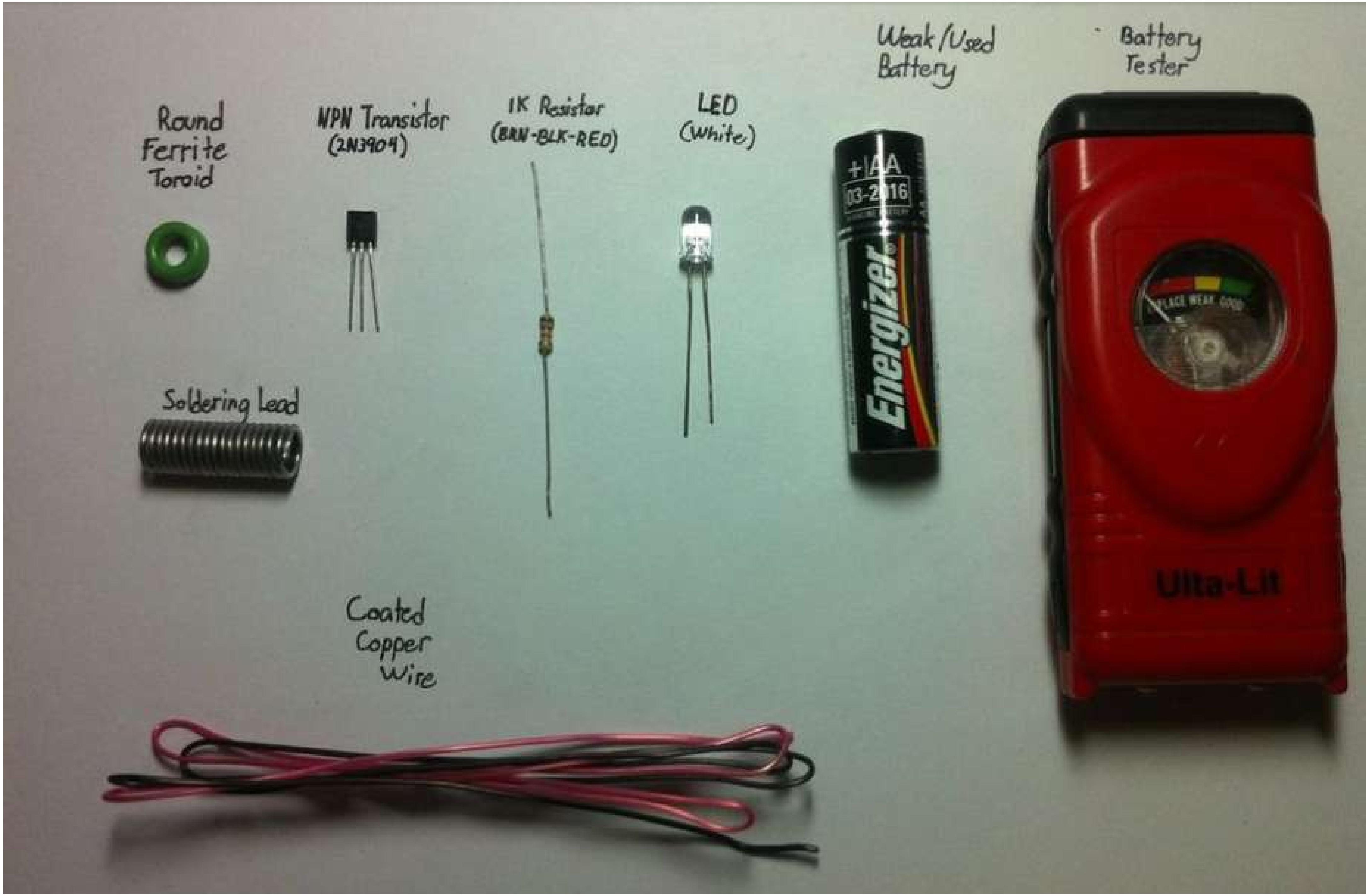
- If we look at the toroid we noticed that we have two wires of different colours sticking out at both ends of the toroid.
- Take one wire of a specific colour (green in the example) on the one side of the toroid and one wire of the other colour (white in the example) on the other side of the toroid and connect (or solder) them together. These two wires forms the top pole of the toroid as in the circuit diagram and is connected to the positive terminal of the battery.

A conventional joule thief, shows components and how they are connected. This example uses a red LED. A ferrite toroid is wound to form a coil with primary (white) and feedback (green) windings. A 2N2222A transistor and 1000 ohm resistor are used.

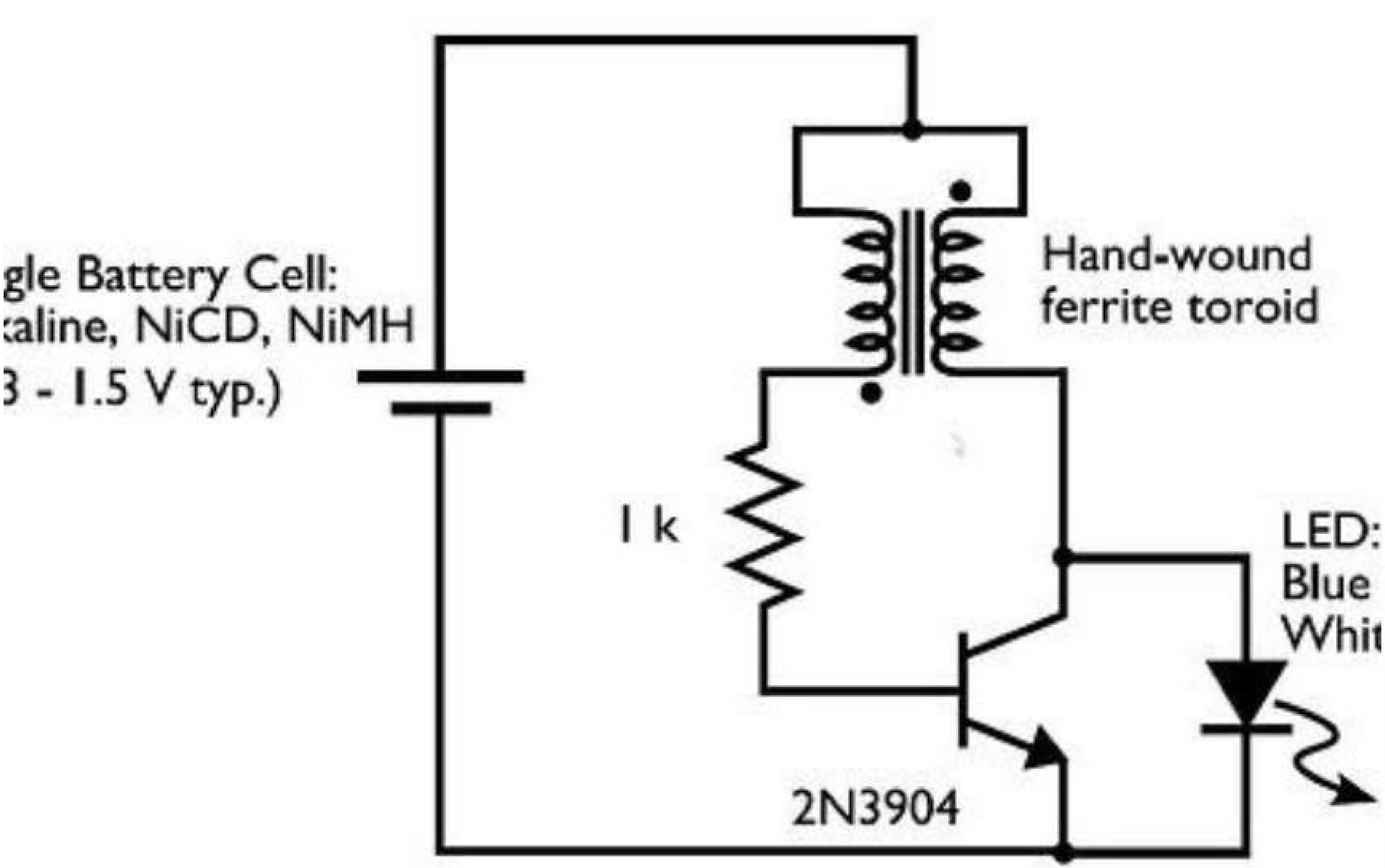


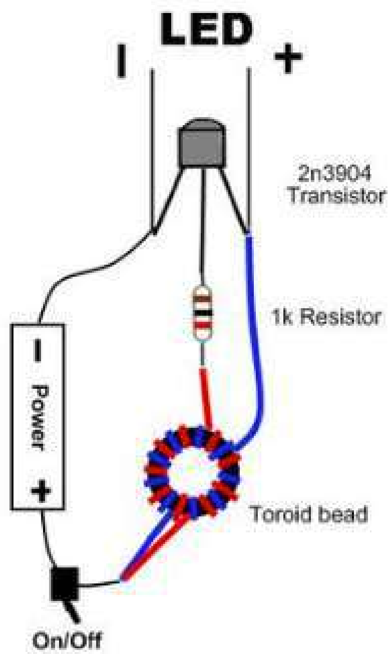
A joule thief with two axial inductors replacing the ferrite toroid, shown on a solderless breadboard

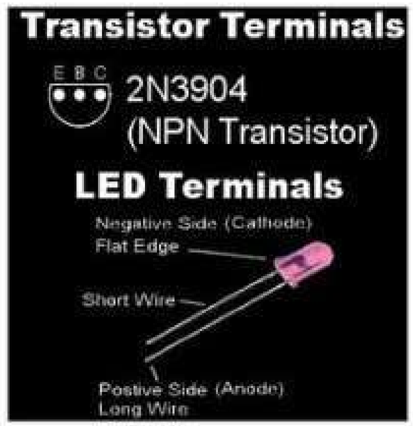

2N

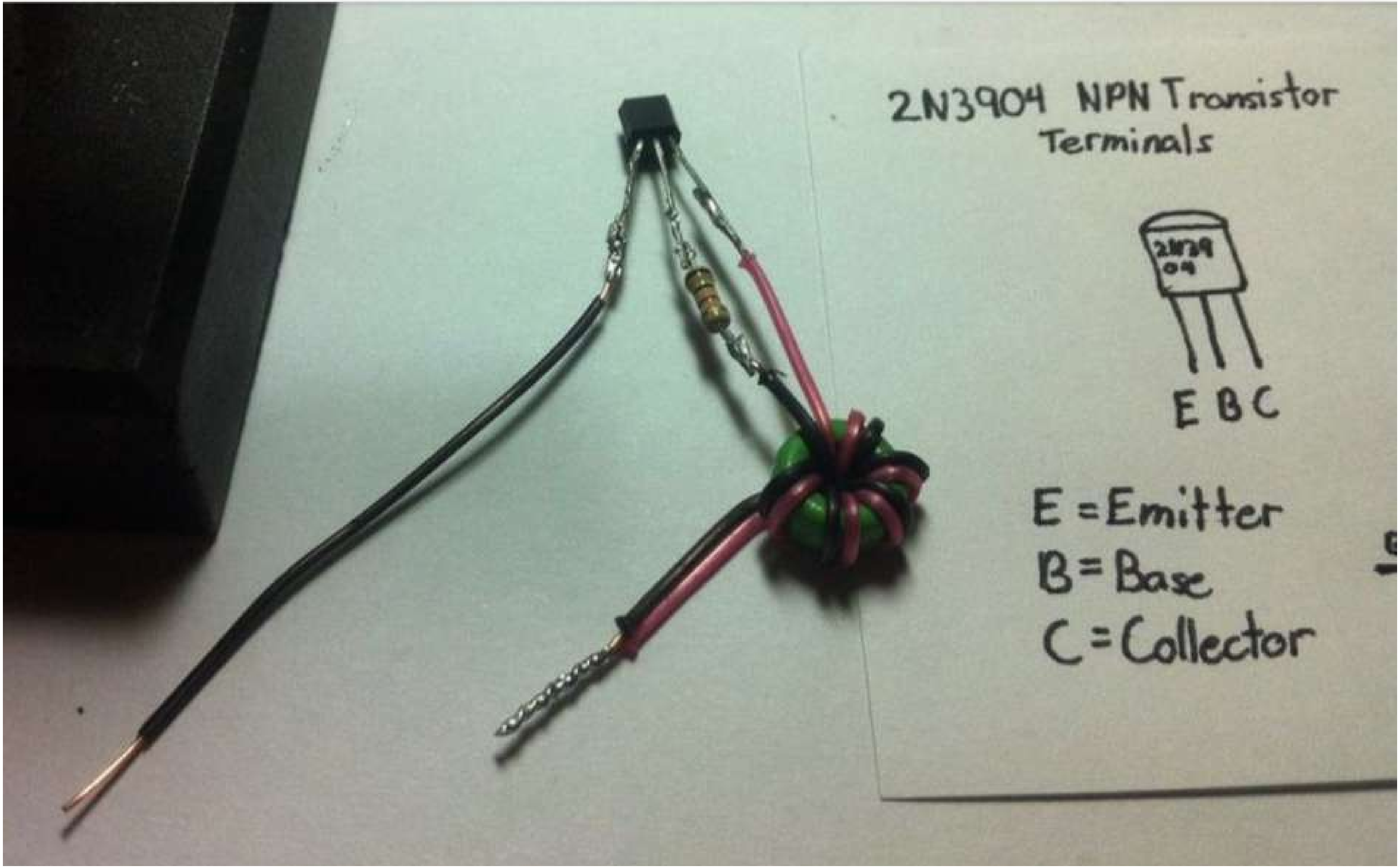

Round Ferrite Toroid
NPN Transistor (2N3904)
1K Resistor (BRN-BLK-RED)
LED (White)
Weak/Used Battery
Battery Tester
+AA
03-2016
Energizer
REPLACE WEAK GOOD
Ulta-Lit
Soldering Lead
Coated Copper Wire

Step 2: Schematic Diagrams

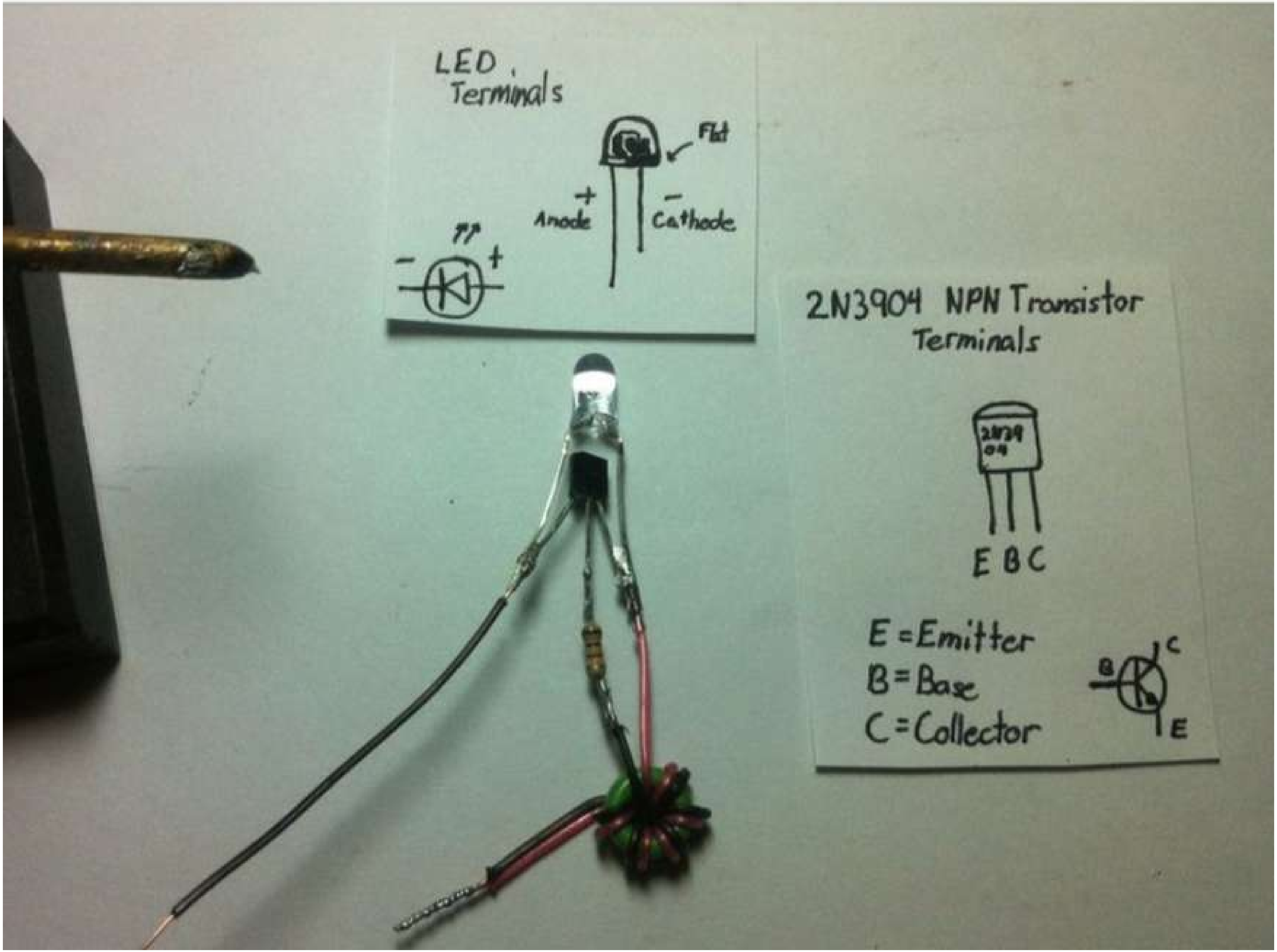






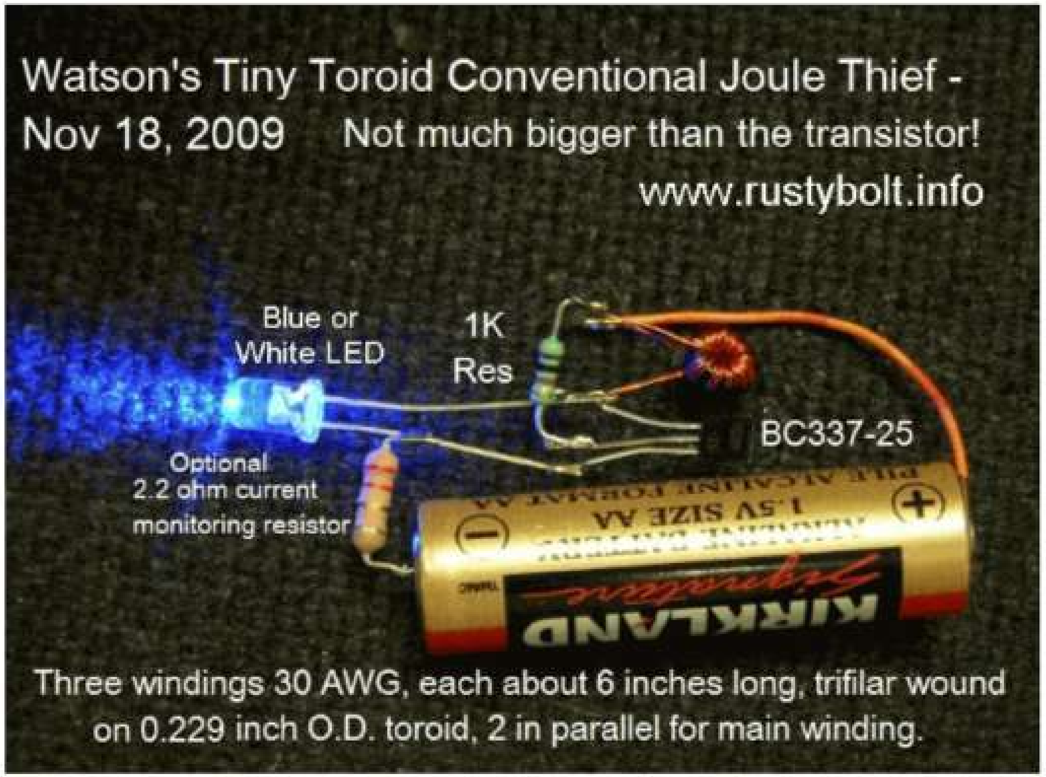


2N3904 NPN Transistor
Terminals
E B C
E = Emitter
B = Base
C = Collector

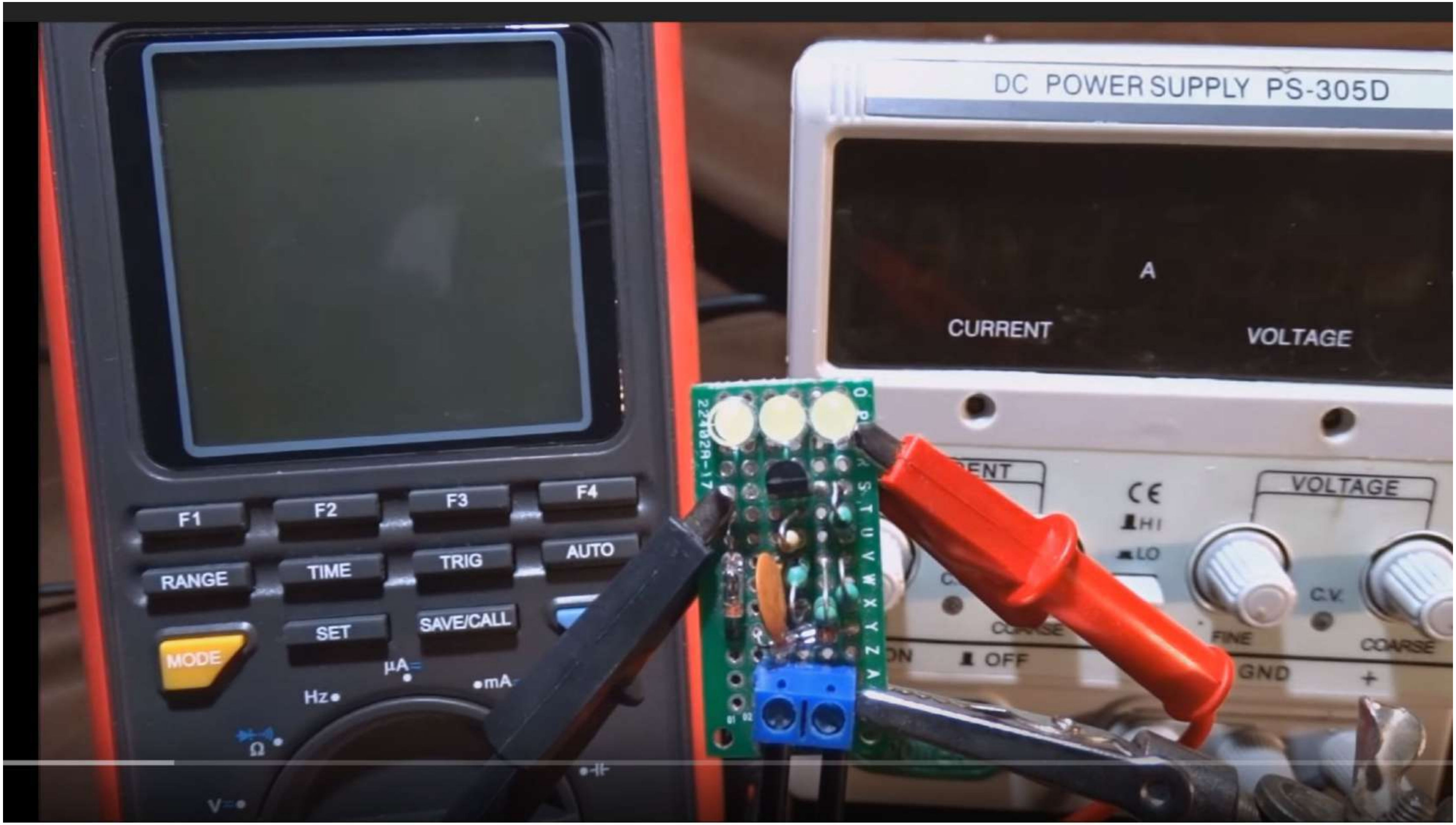


LED
Terminals
Flat
+
Anode
-
Cathode
-
+
2N3904 NPN Transistor
Terminals
E B C
E = Emitter
B = Base
C = Collector
B
C
E

These tiny T231212T toroids from Surplussales.com are high permeability so it doesn't take much wire to make a good Joule Thief coil. The core is less than a quarter inch diameter (here is a data sheet in .PDF.). Six inches of 30 AWG magnet wire trifilar wound, with two of the windings connected in parallel for the primary winding.

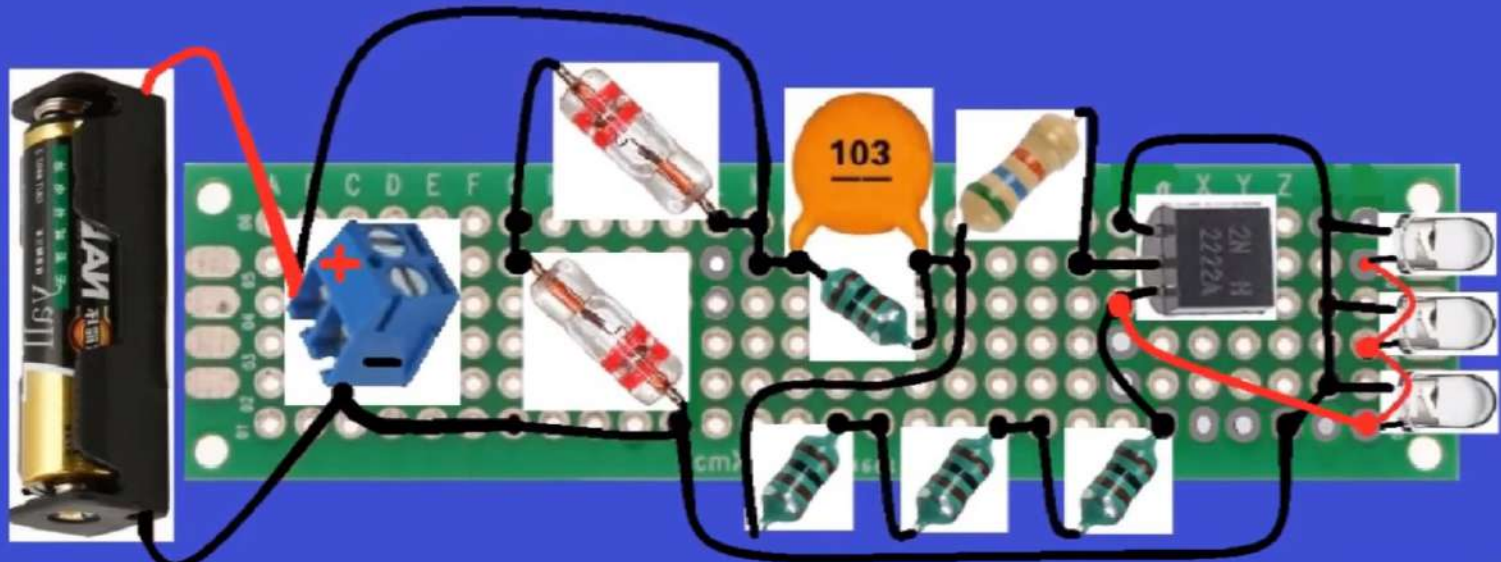


The transistor is a BC337-25. I put a 2.2 ohm resistor in series with the circuit to measure the battery current. It can be put there temporarily and removed when the LED current is what you want. How do you change the LED current? Change the 1k resistor to a different value. Higher values will reduce the LED current. With the BC337-25 and 1k resistor, the LED current should be close to 20 milliamps so it's probably not wise to go much below 1k. If you use another transistor, especially the pipsqueak 2N3904, you may have a hard time getting it to put out 20 milliamps.



DC POWER SUPPLY PS-305D
A
CURRENT
VOLTAGE
VOLTAGE
HI
LO
C.V.
FINE
COARSE
OFF
GND
F1
F2
F3
F4
RANGE
TIME
TRIG
AUTO
MODE
SET
SAVE/CALL
Hz
µA
mA


B
103M



3* Axial lead inductor 82uH 1/4W

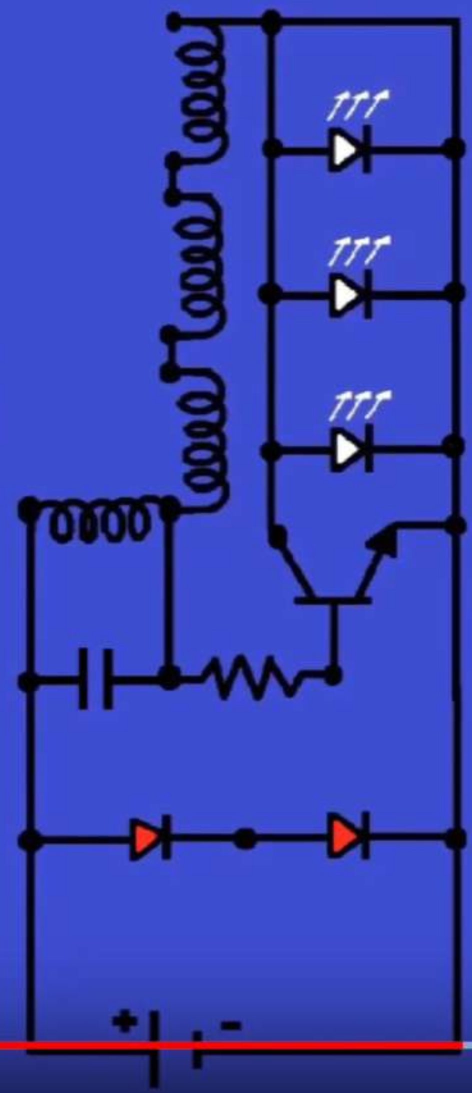
1* 10nf ceramic capacitor 103

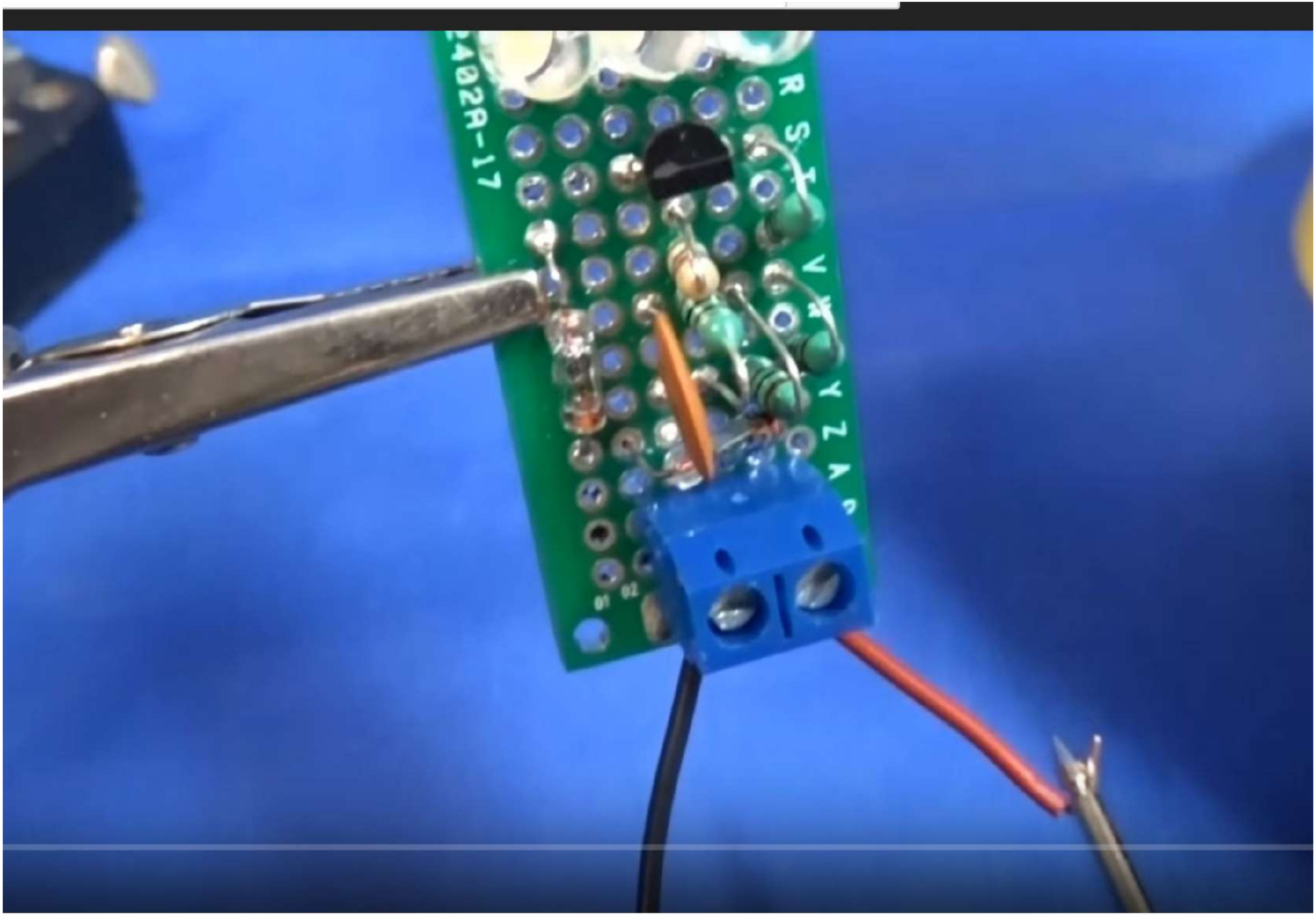
2* AO90 Germanium signal diode

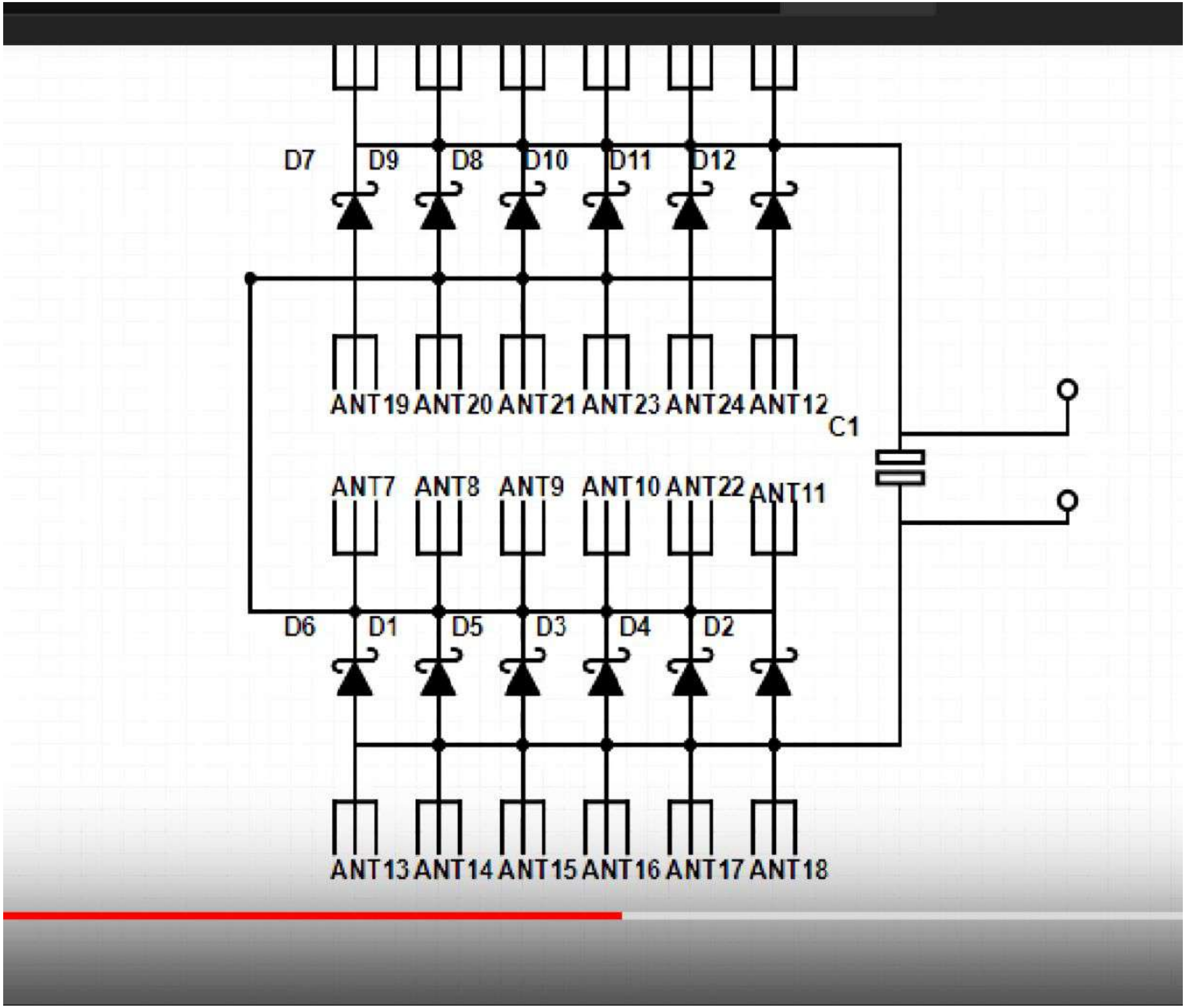
1* 2N2222 NPN Transistor bipolar 0.6A 40V

1* RESISTOR 5.6K Ohm 1/4W

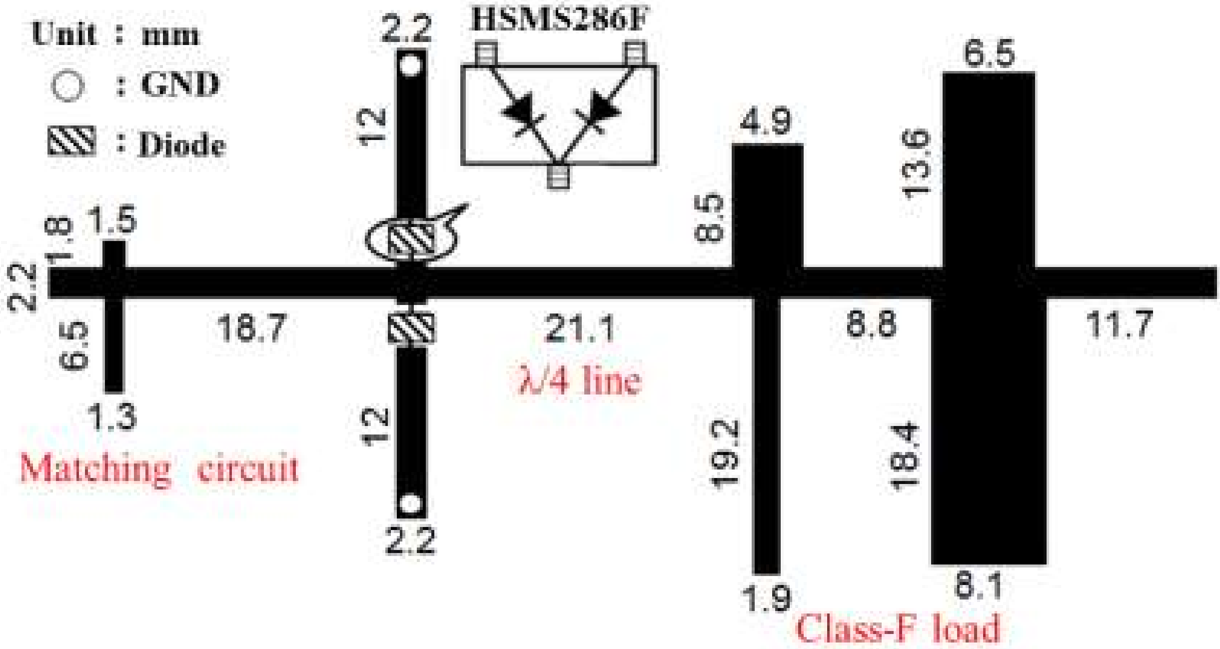
3* 5mm white Emitting led Diode 20 mA 3.2 V



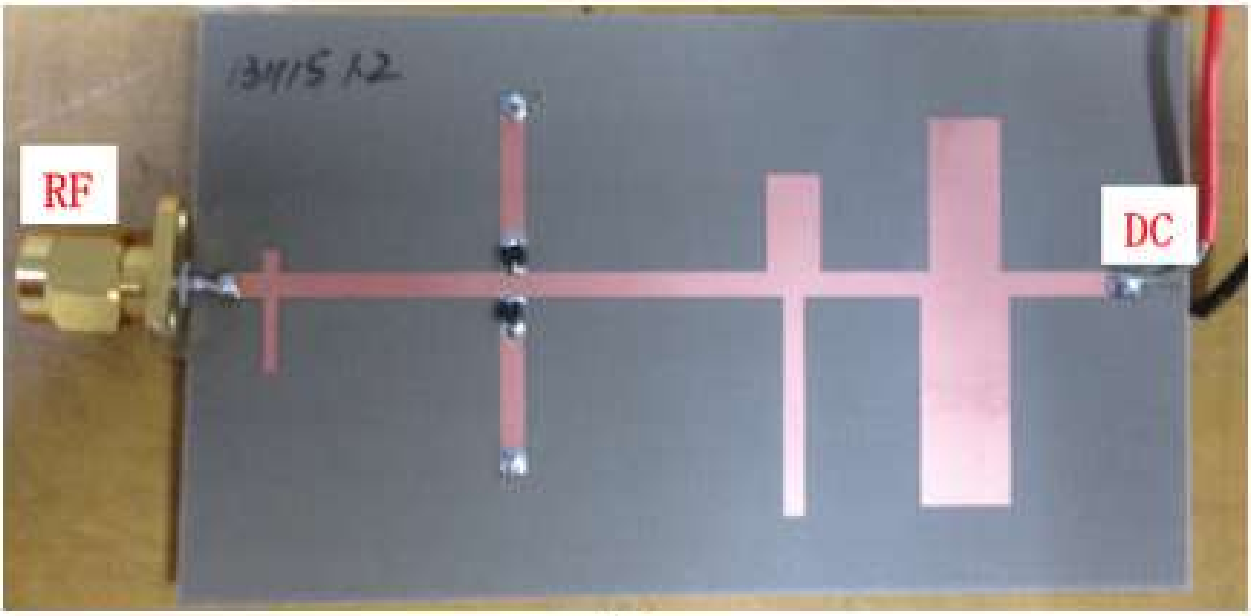




D7
D9
D8
D10
D11
D12
ANT19
ANT20
ANT21
ANT23
ANT24
ANT12
C1
ANT7
ANT8
ANT9
ANT10
ANT22
ANT11
D6
D1
D5
D3
D4
D2
ANT13
ANT14
ANT15
ANT16
ANT17
ANT18



(a)



(b)

Figure 4.1: Proposed positive output voltage rectifier. (a) Structure and size. (b) Photograph.

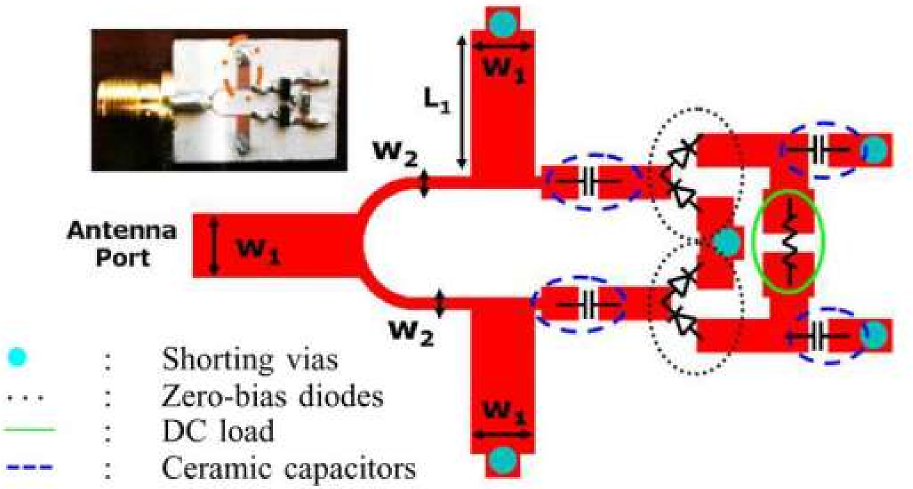
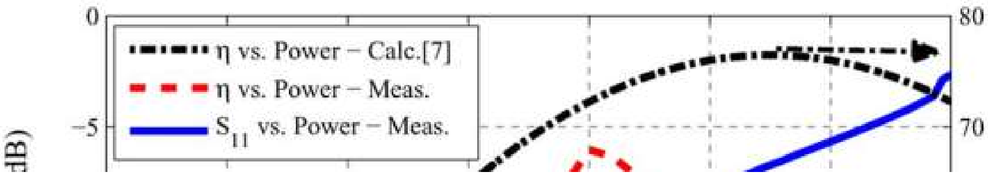


Fig. 3. Layout of the rectifier prototype, printed on RO3206. $w_1 = 72$ mil, $w_2 = 15$ mil, and $L_1 = 171$ mil. Fabricated sample is shown in top left, and the impedance matching stub is encircled.



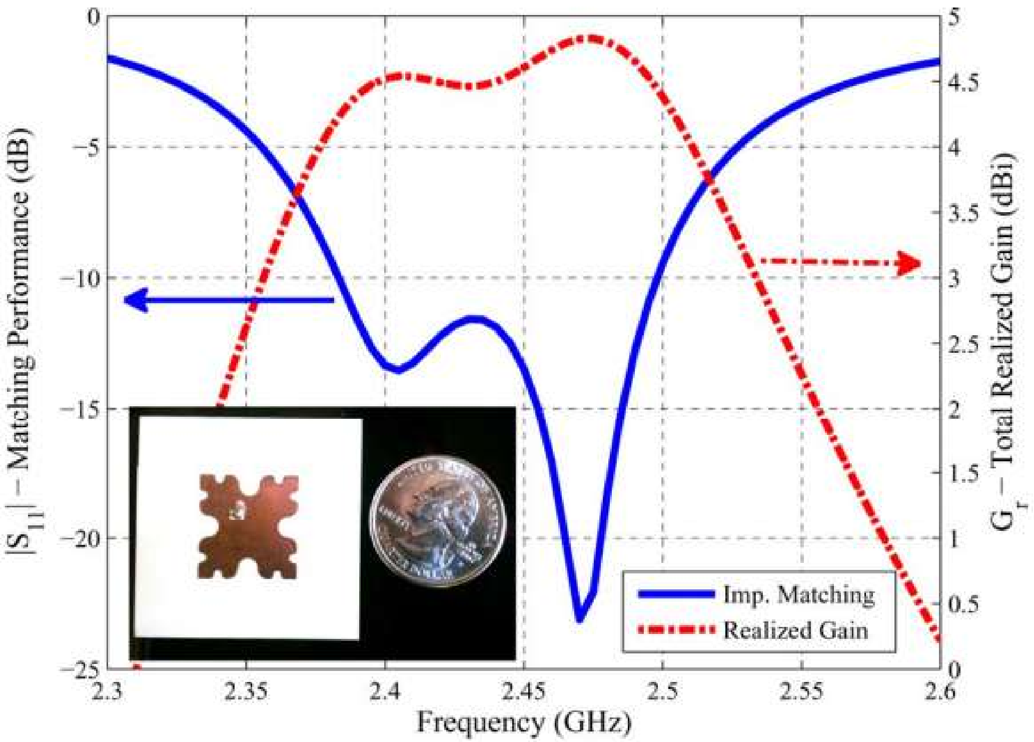
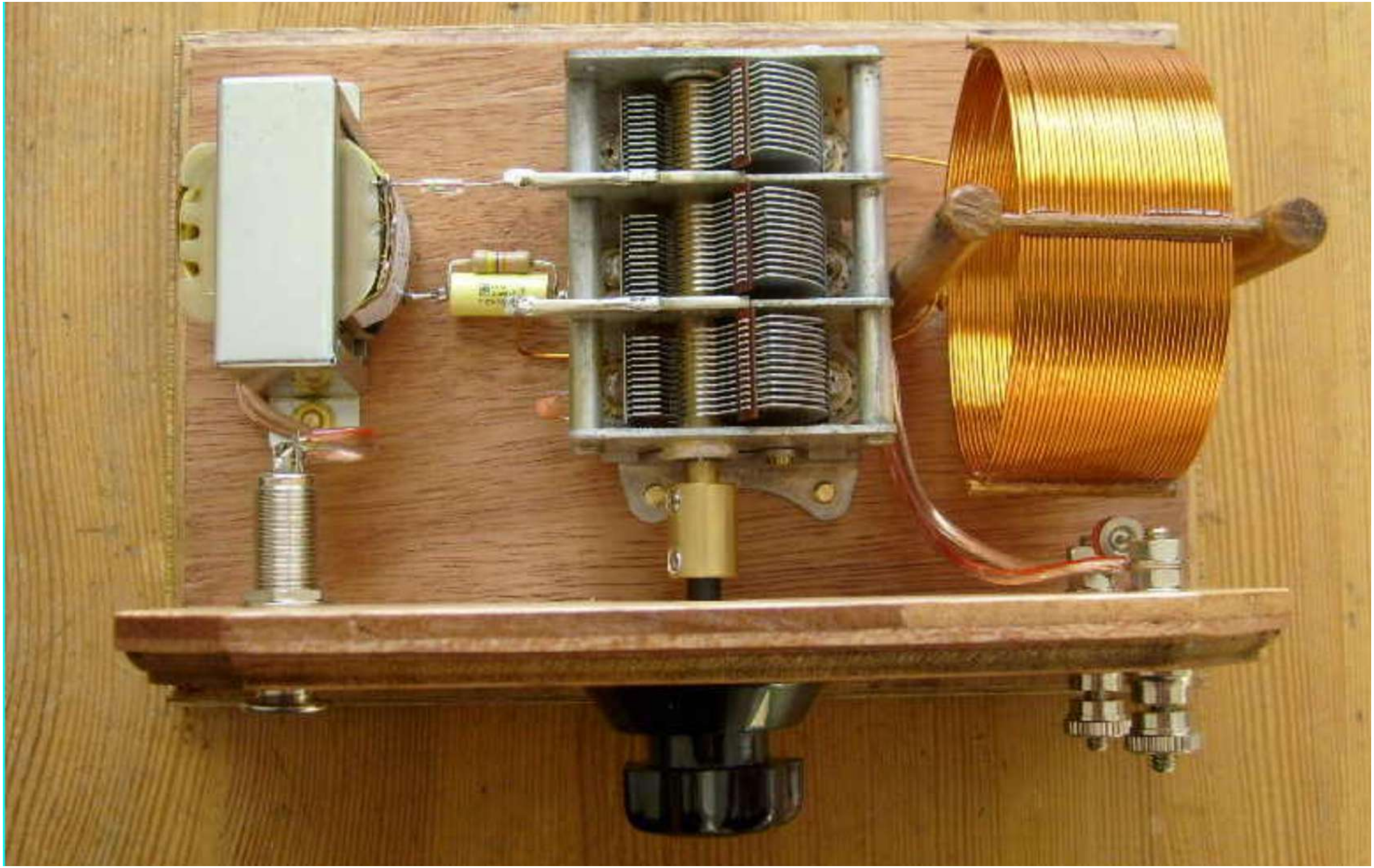
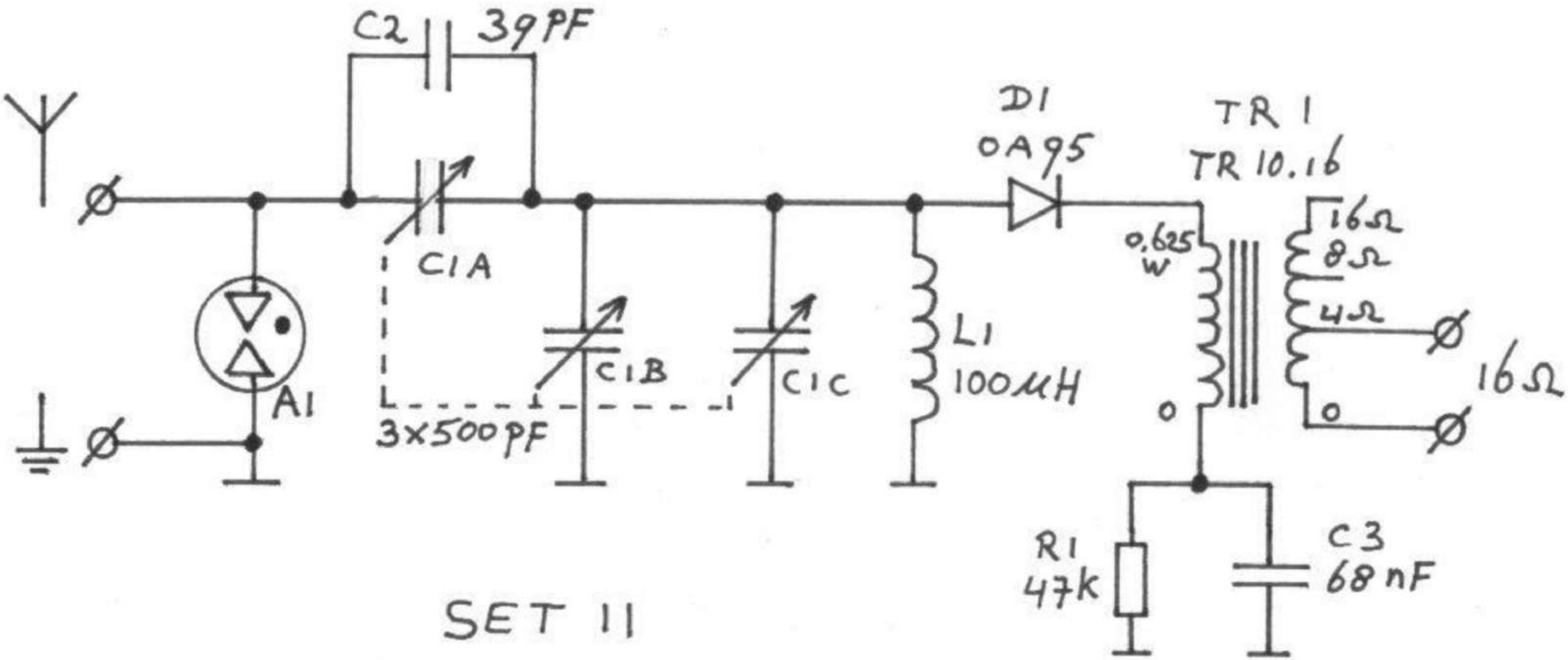
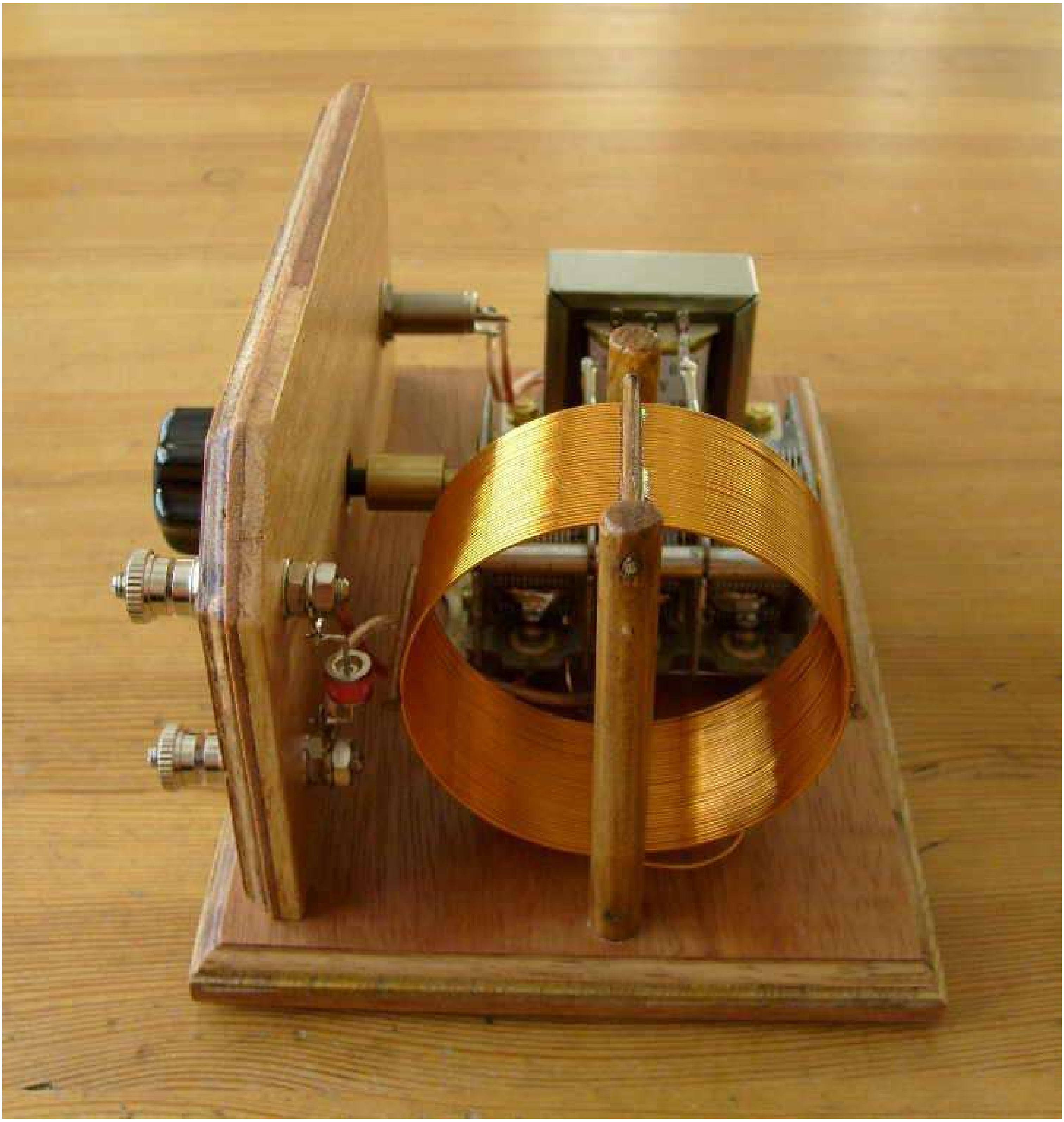


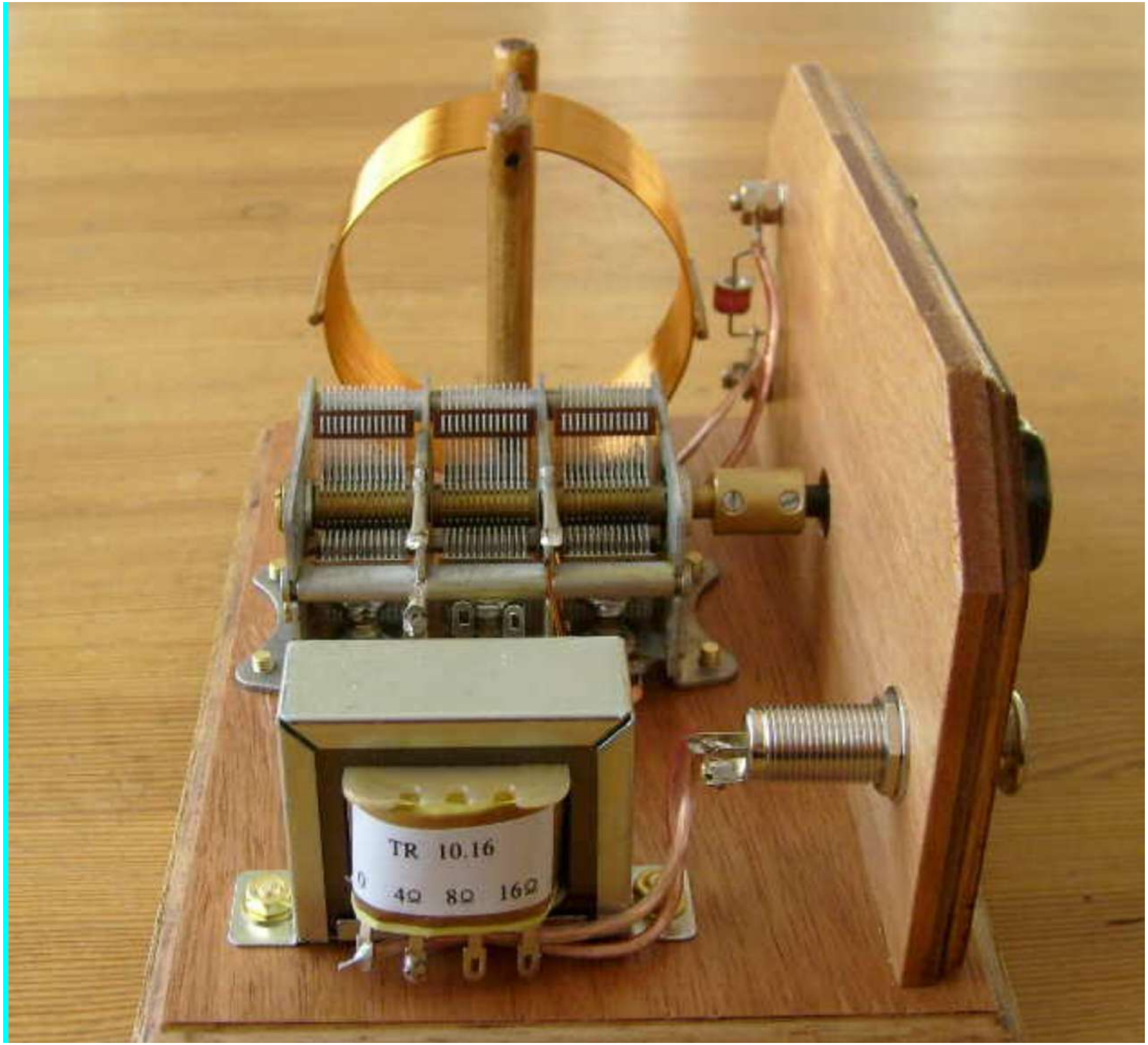
Fig. 5. Measured $|S_{11}|$ performance and total realized gain (at boresight) of the proposed antenna. Fabricated sample is shown in bottom left.



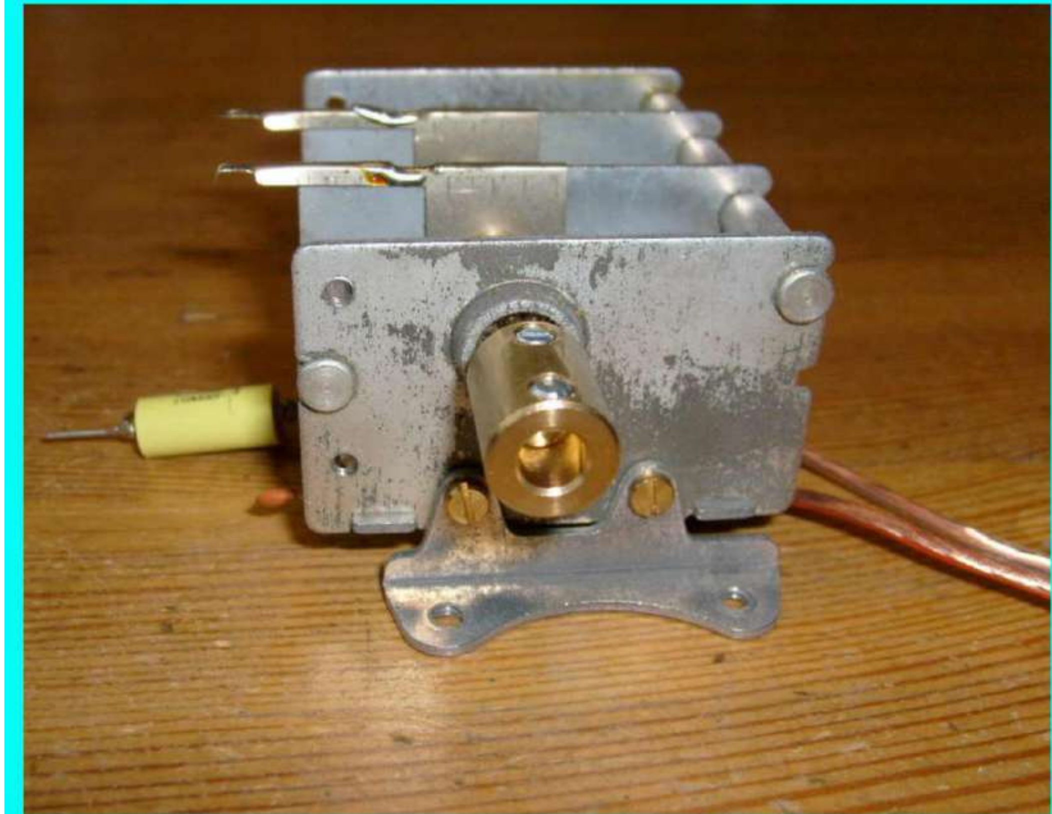


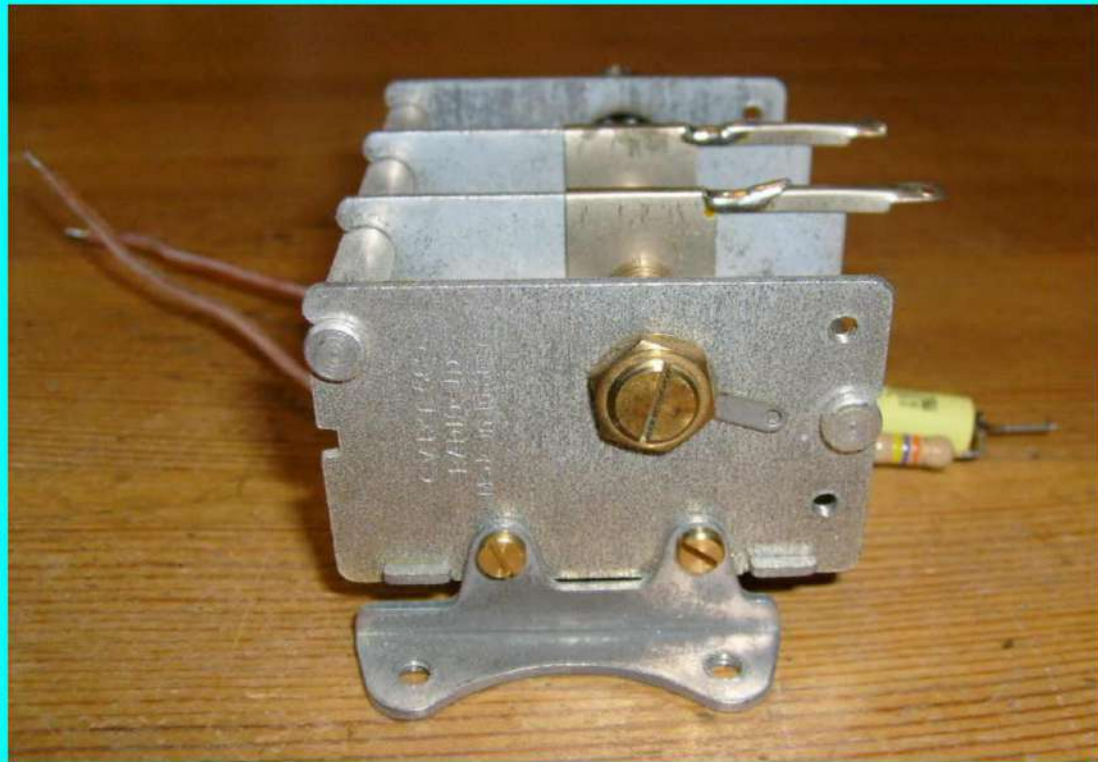
C2
39 PF
C1A
3x500 PF
C1B
C1C
L1
100 μH
D1
OA95
TR 1
TR 10.16
0.625 W
16 Ω
8 Ω
4 Ω
0
16 Ω
A1
R1
47k
C3
68 nF
SET 11



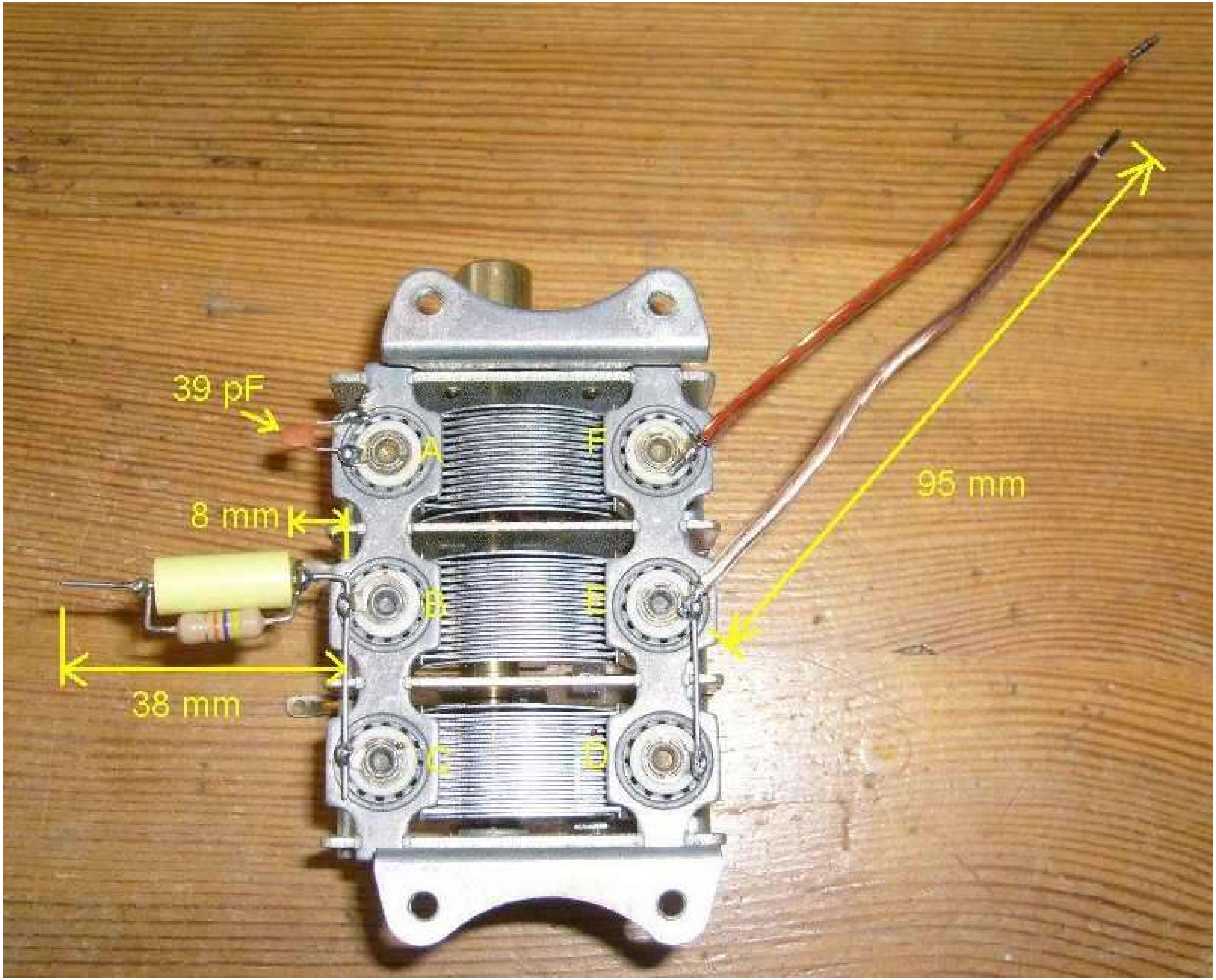

TR 10.16
4Ω 8Ω 16Ω

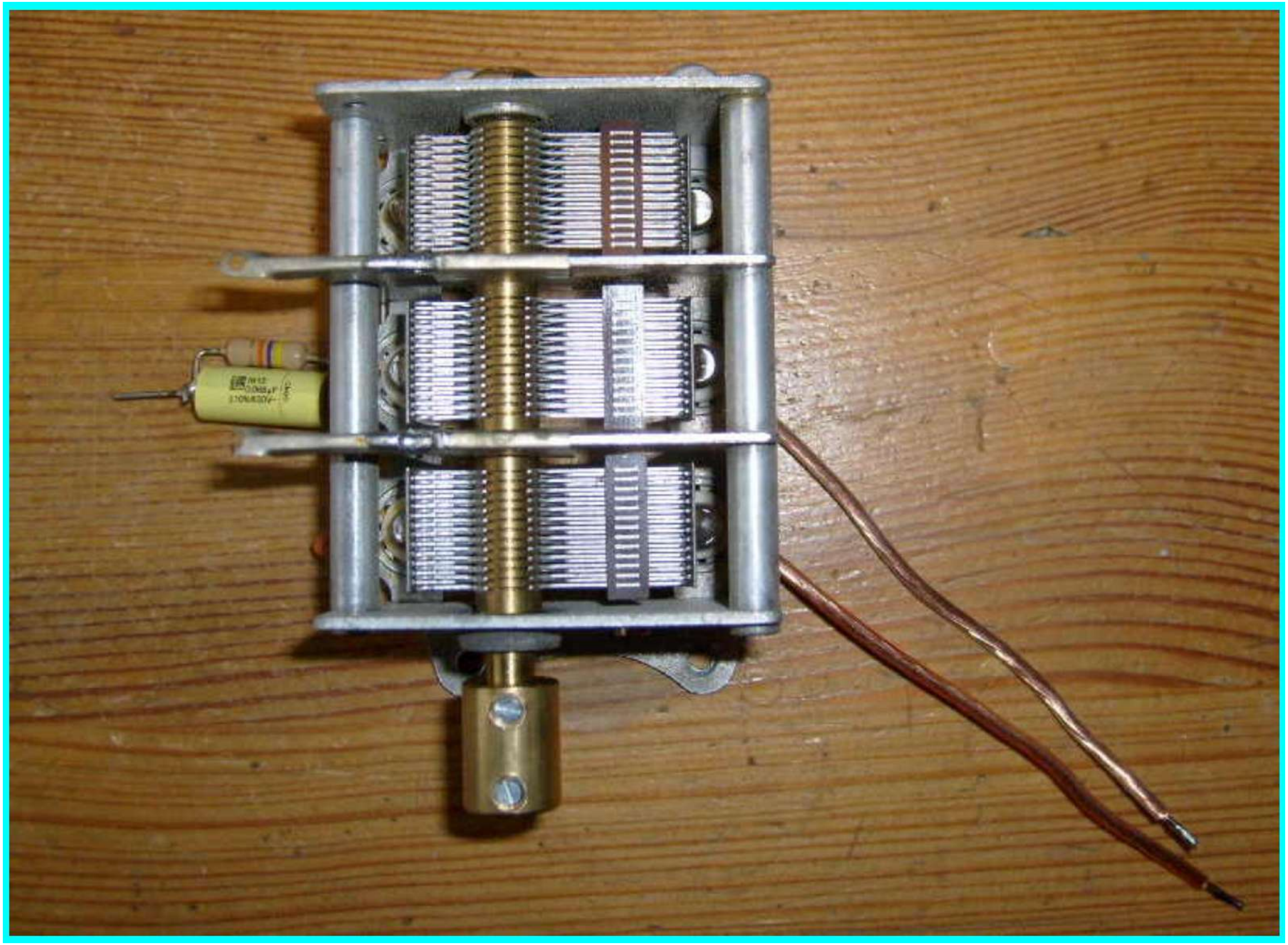
Preparation of the tuning capacitor

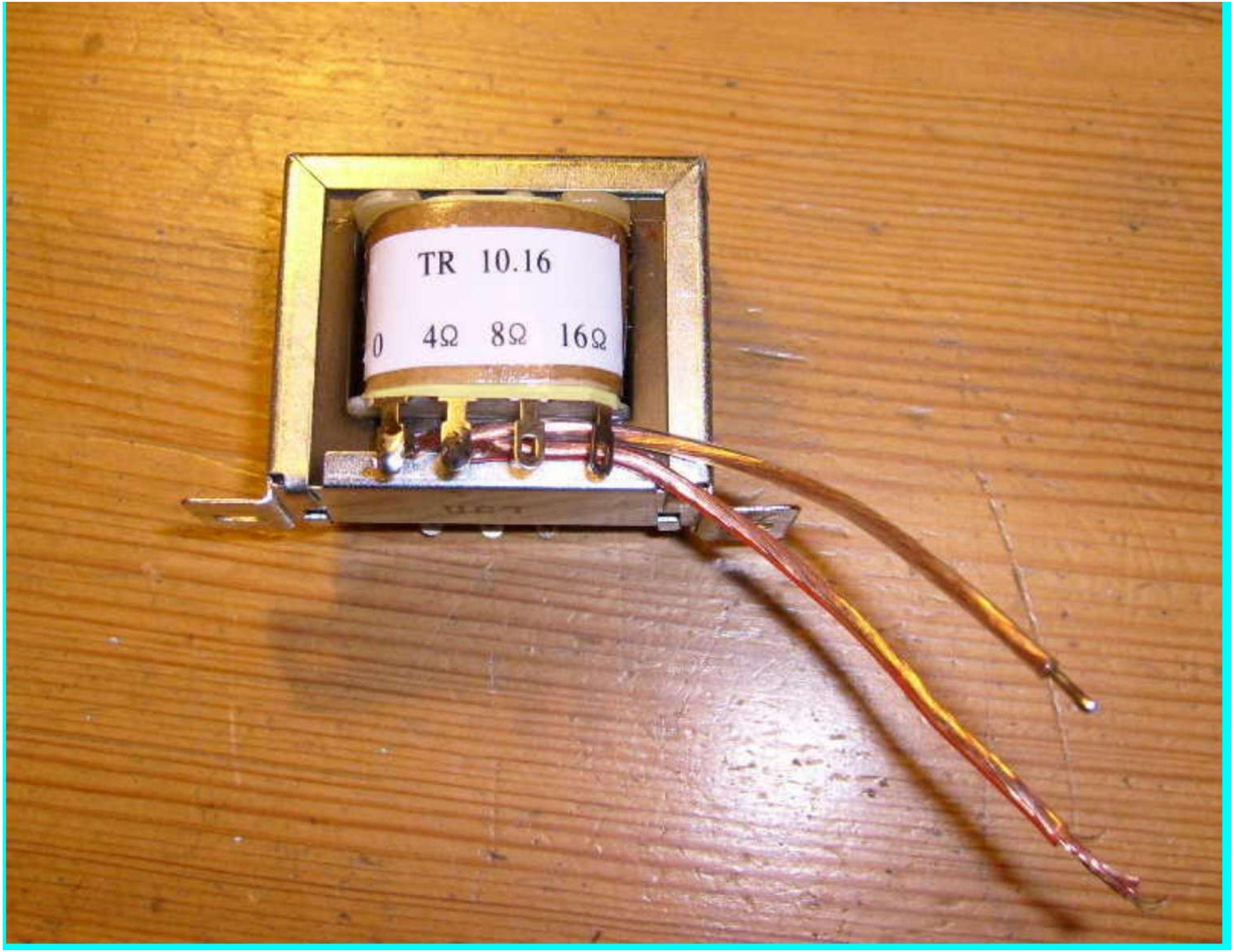


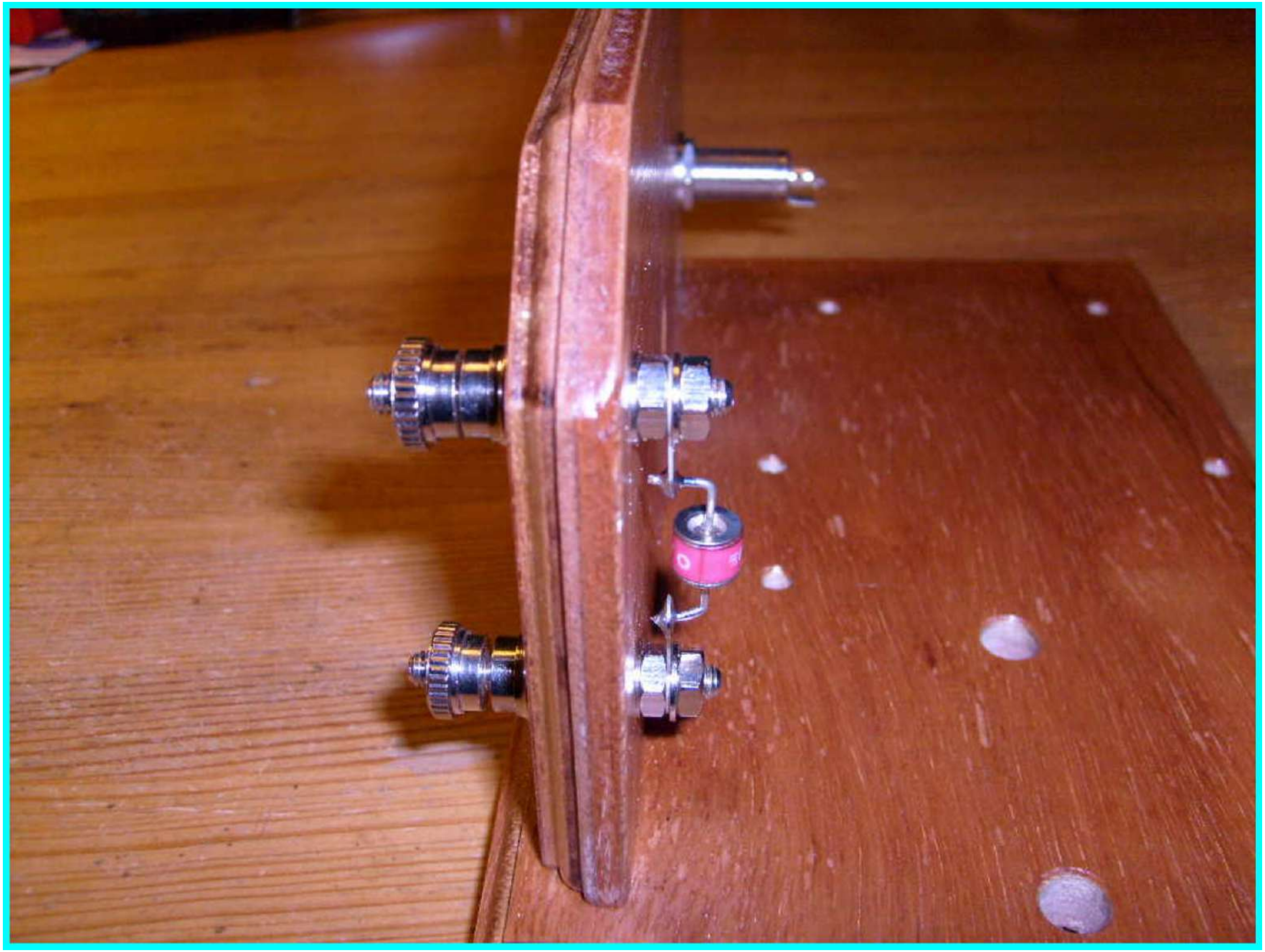


Mount the mounting supports on the tuning capacitor (they are delivered with the tuning capacitor).
Place the shaft coupler on the shaft of the tuning capacitor.


39 pF
A
F
95 mm
8 mm
B
E
38 mm
C
D

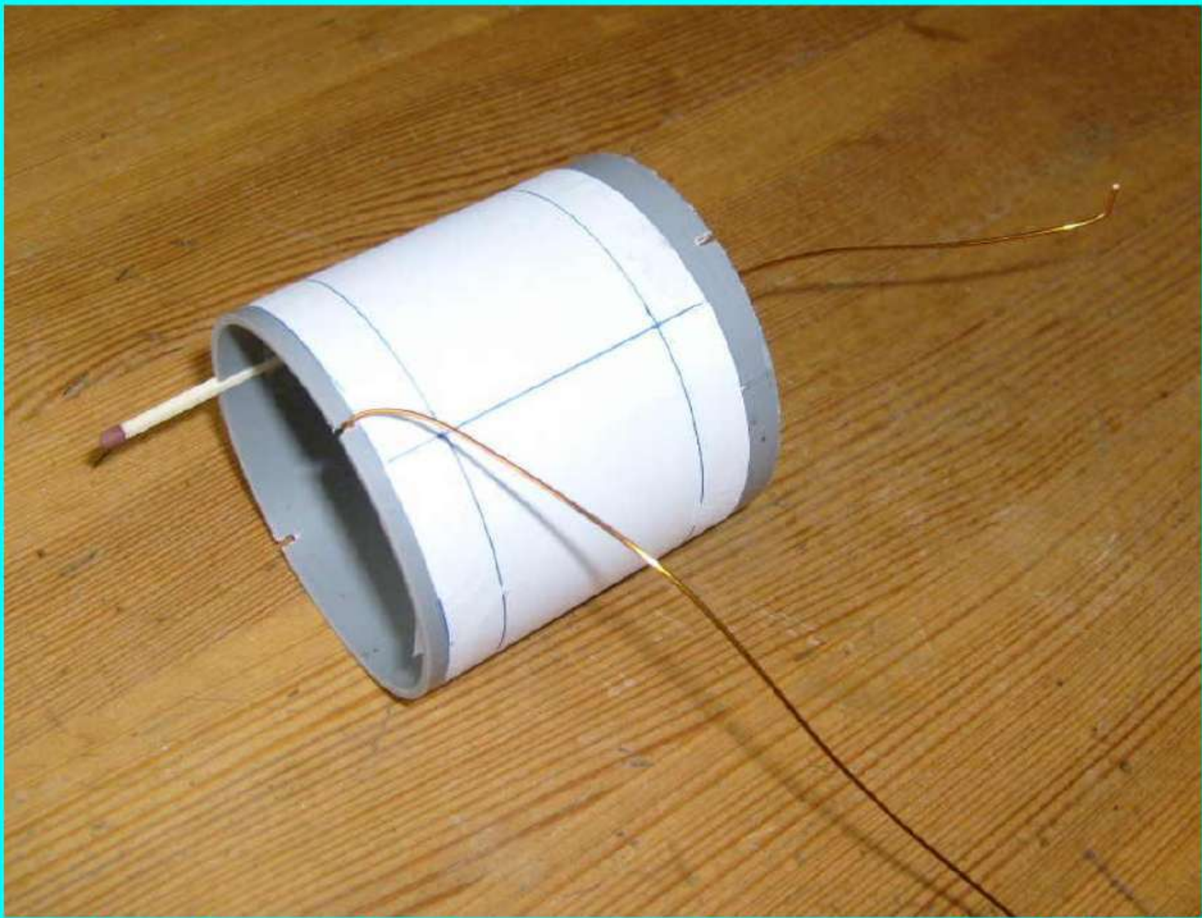



TR 10.16
0 4Ω 8Ω 16Ω

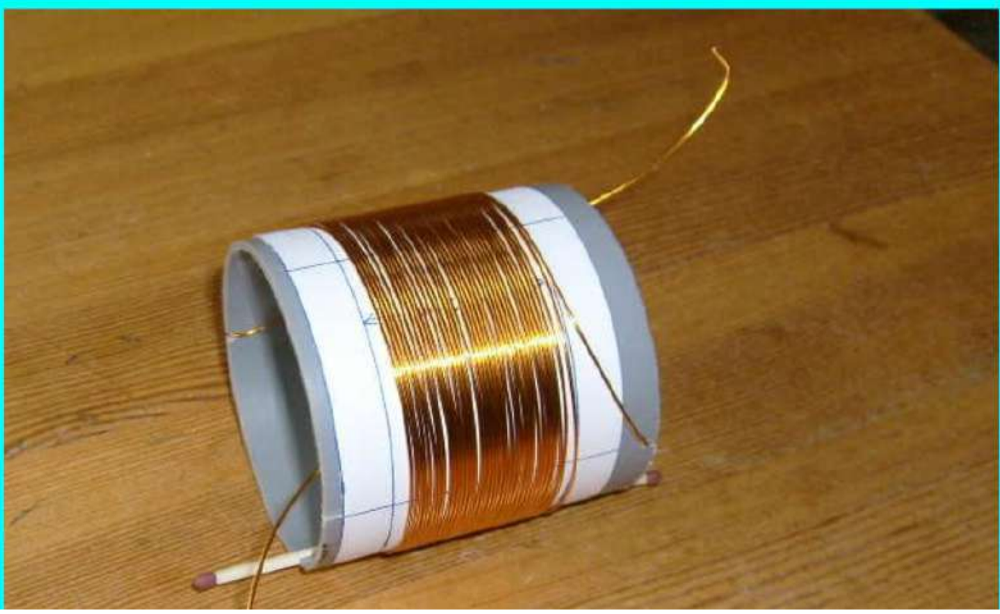


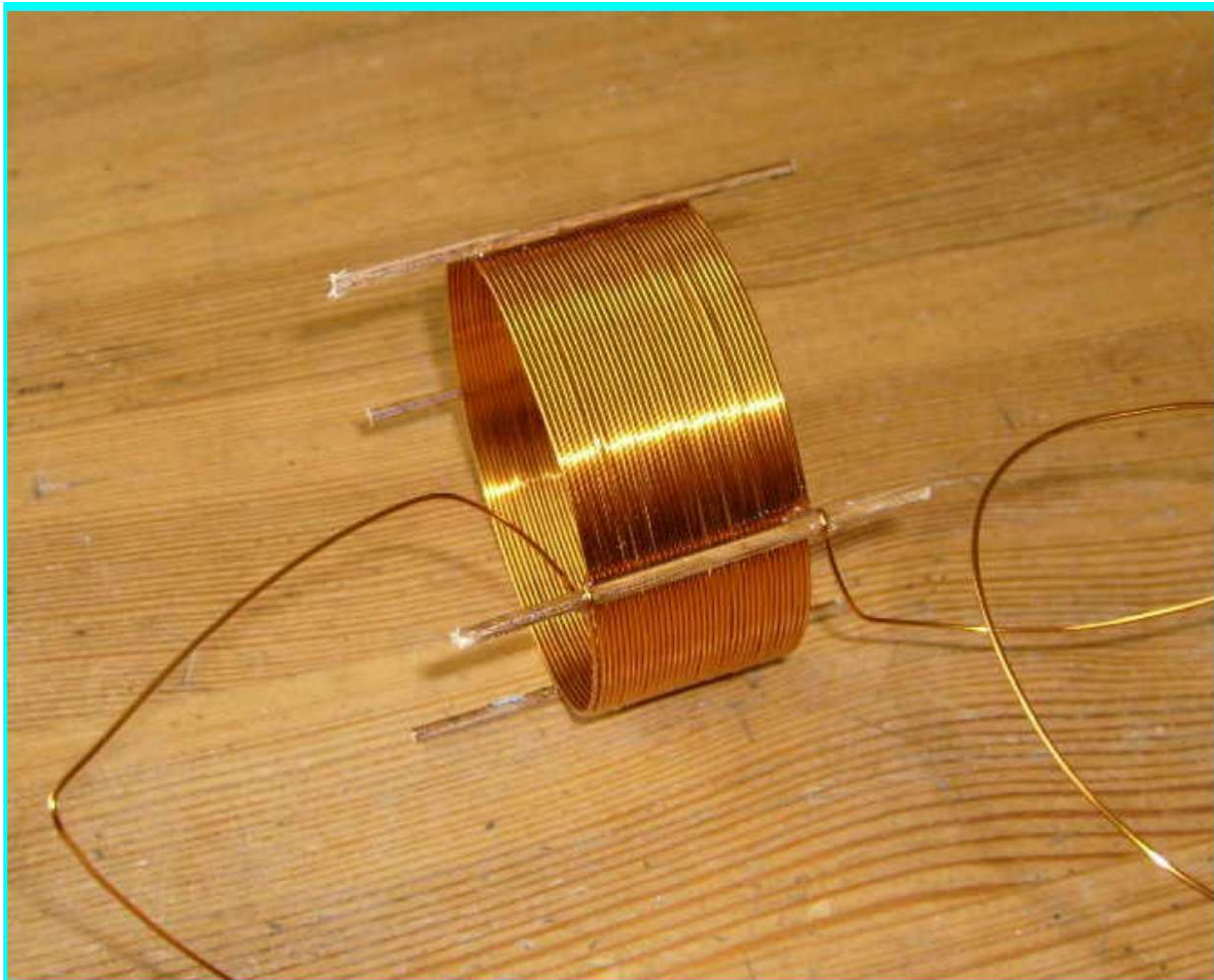
Screw the front on the bottom plate with four screws 3x45 mm.
Place the headphone socket.
Place the two terminal posts and the gas discharge tube.

Make a paper strip with 4 sections of 40x55 mm on it.
Do the strip around the tube, and fix it with a piece of tape.
Don't tape the strip onto the tube on places where later the coil is wound.

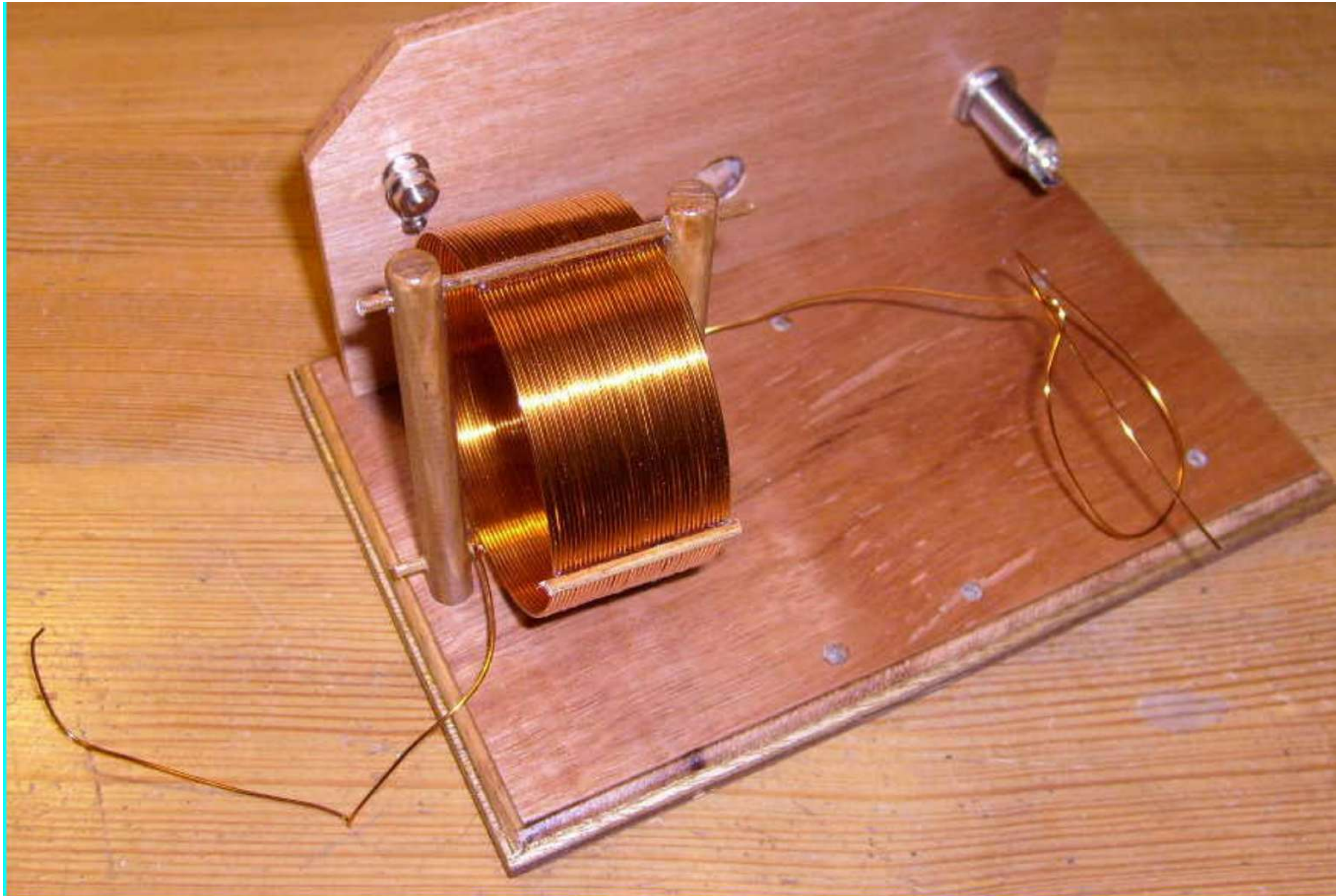


For the coil we need 8.6 meter enamelled copper wire with 0.8 mm thickness.
Hook the begin of the coilwire onto the slot in the tube.
Also fix the begin of the wire on the inside of the tube with some tape.

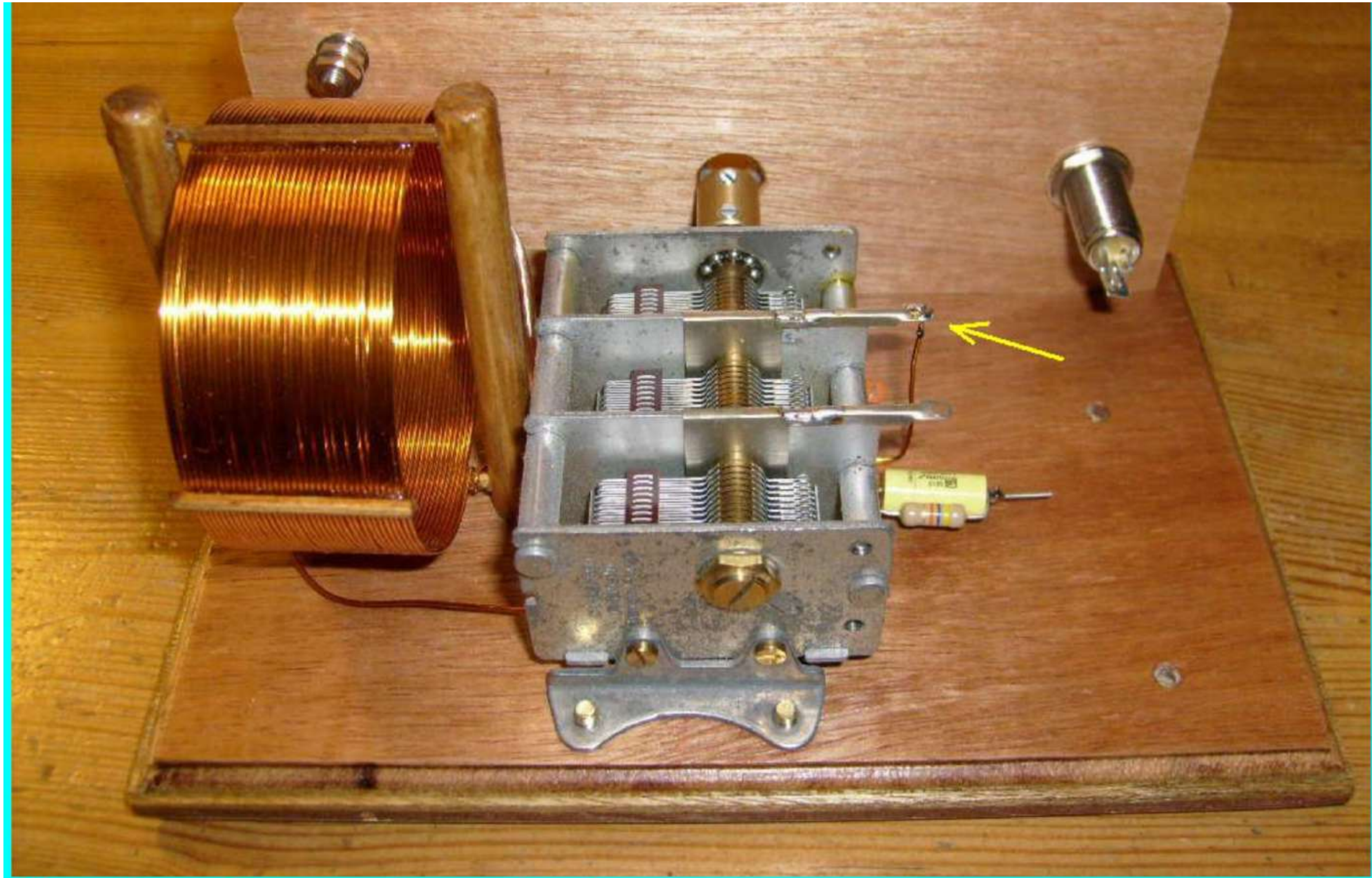




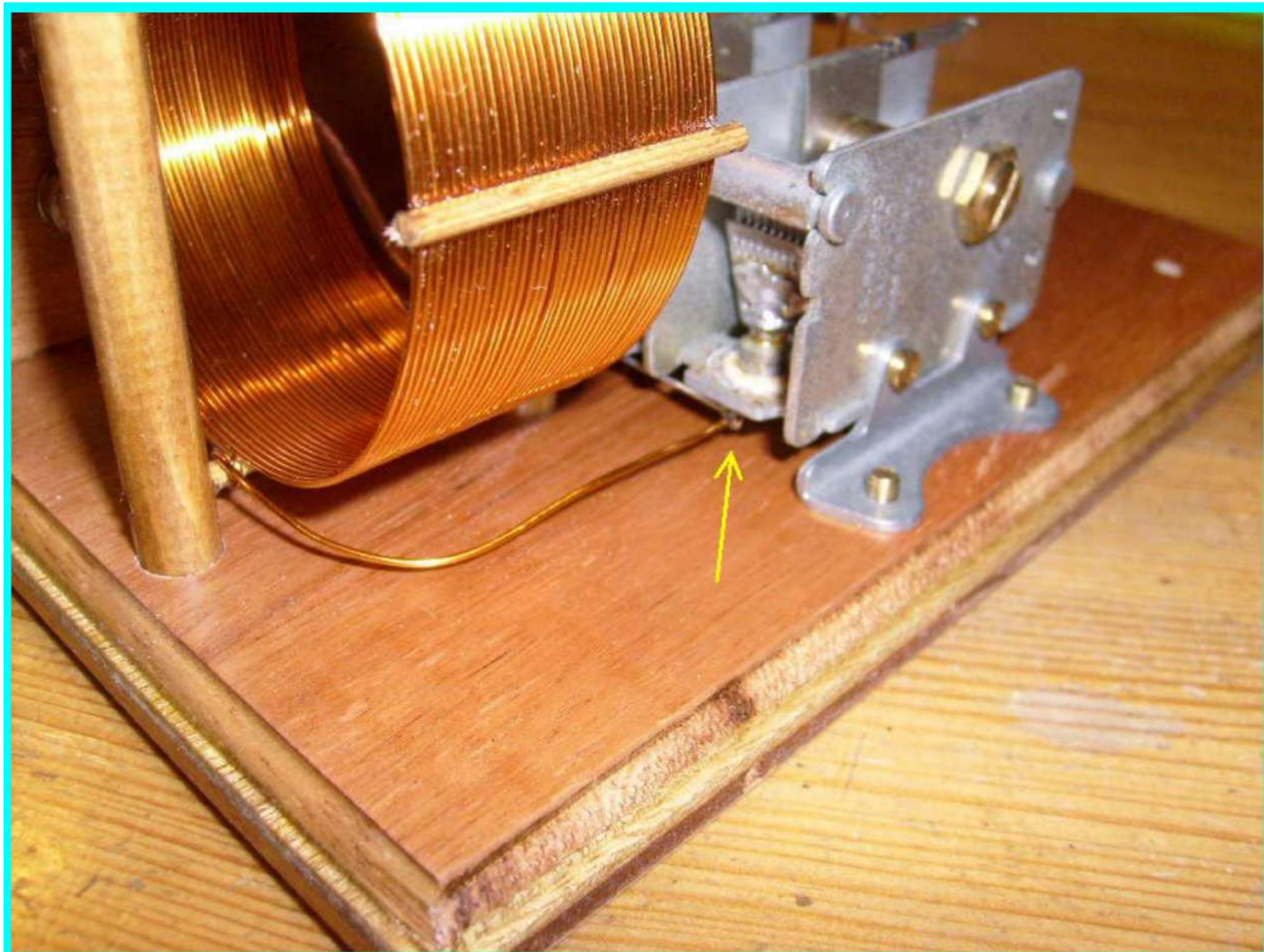
Wait until the glue is hardened.
Remove the rubber bands, the tape and the matches.
Shift the tube out of the coil, and remove the paper out of the coil.
Turn the both ends of the wire one time around the stick at the bottom side of the coil, and apply some extra glue here.



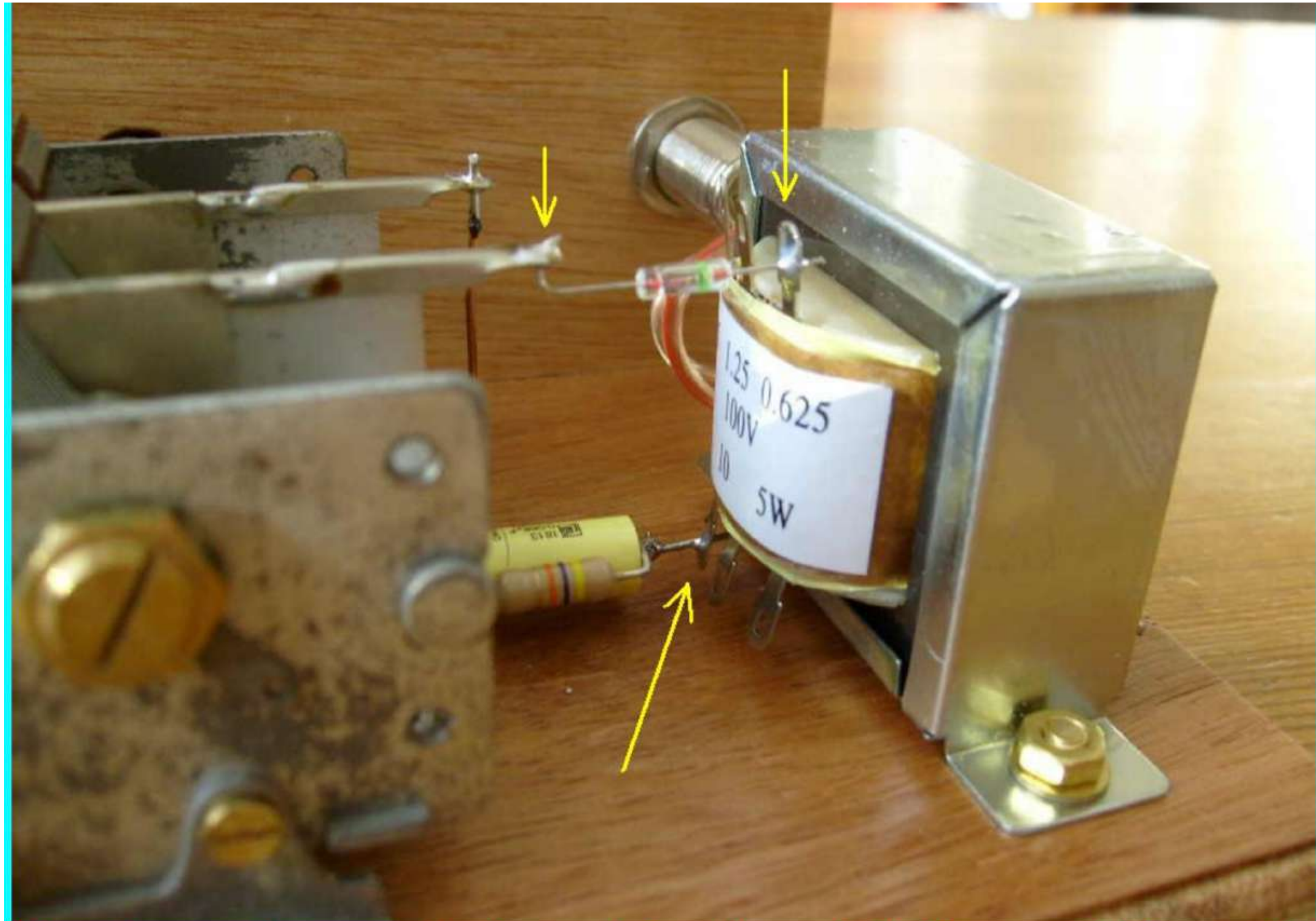
Apply some glue in the holes in the 9 mm sticks
Also apply some glue in the 9 mm holes in the bottom plate.
Place the coil as shown in this picture.
Wait until the glue is dry.



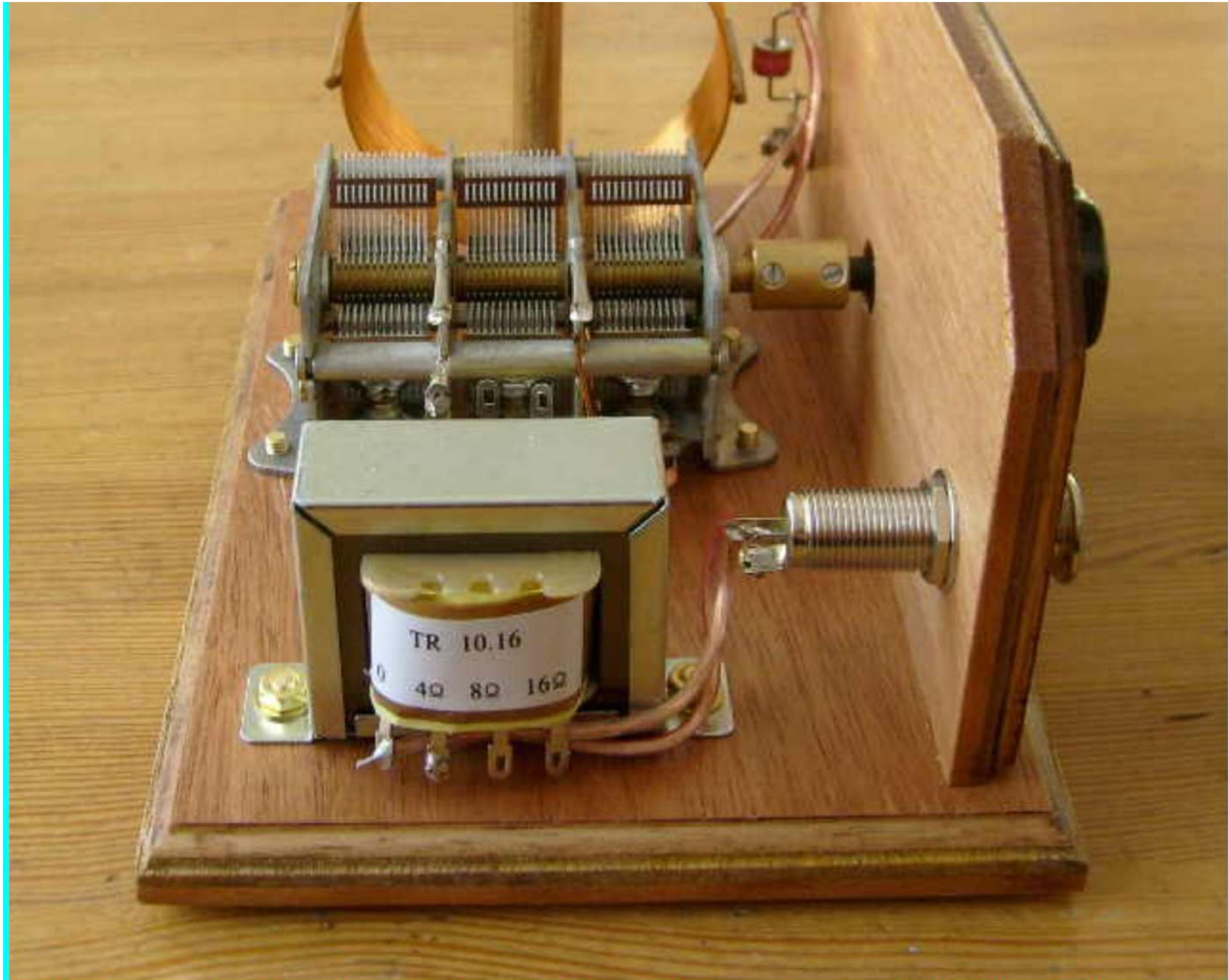
Place the tuning capacitor on the frame.
Fix it with four screws M4x16
One coilwire runs underneath the tuning capacitor, is then bend upwards and cut to length.
Solder this wire to the tuning capacitor (indicated with the arrow in the above picture).
Scrap of the lacquer from the wire, before soldering.



The other wire is cut to length, and soldered to the solder tag of the tuning capacitor (indicated with arrow).

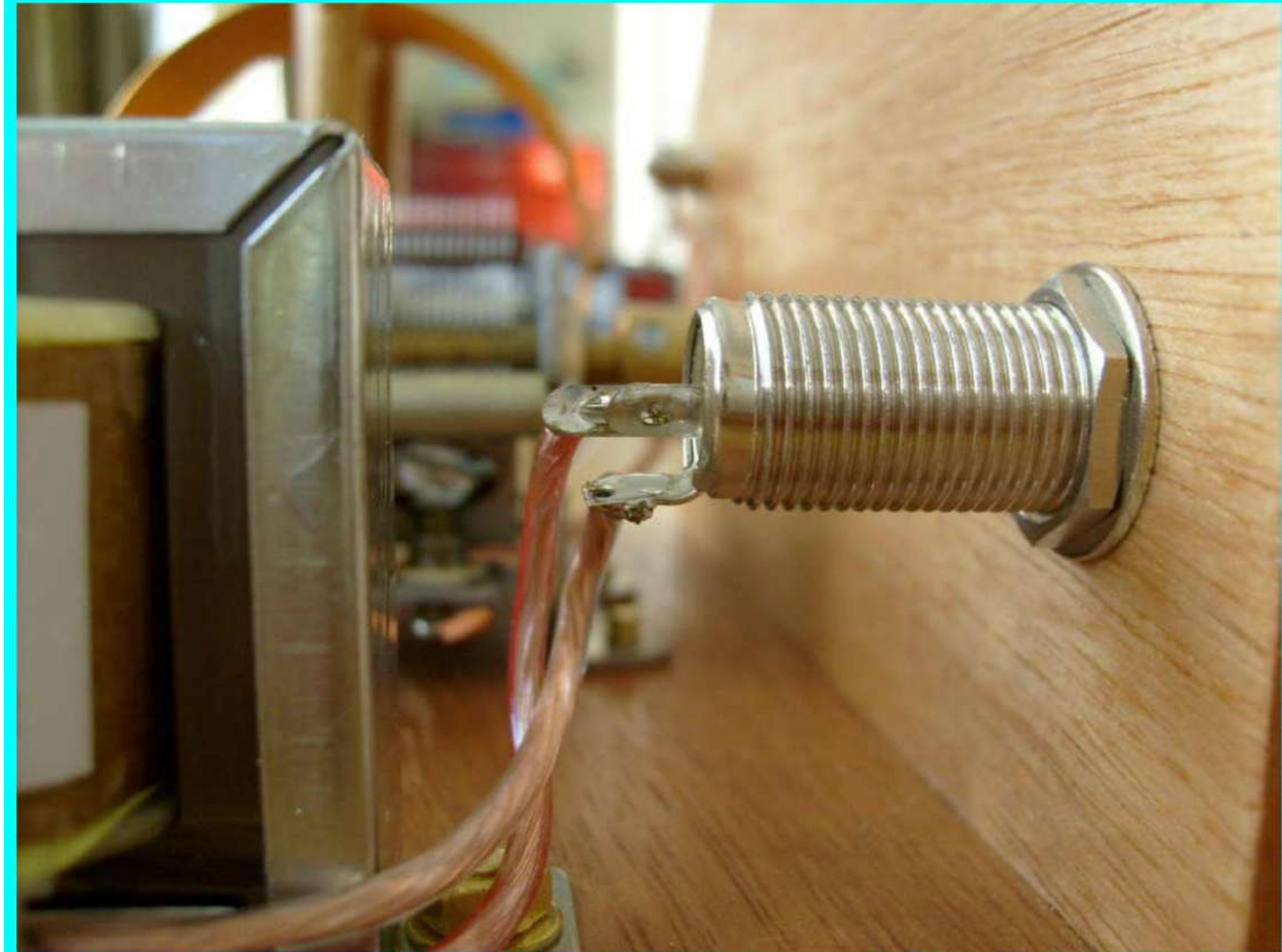


Place the transformer on the frame, fix it with two M4x16 screws, 2 rings and 2 nuts
The wire of the 68 nF capacitor must stick through the "0" connection of the transformer, and is then soldered.
Solder the OA95 diode between tuning capacitor and the "0.625W" connection of the transformer.
The green band on the diode must point towards the transformer.

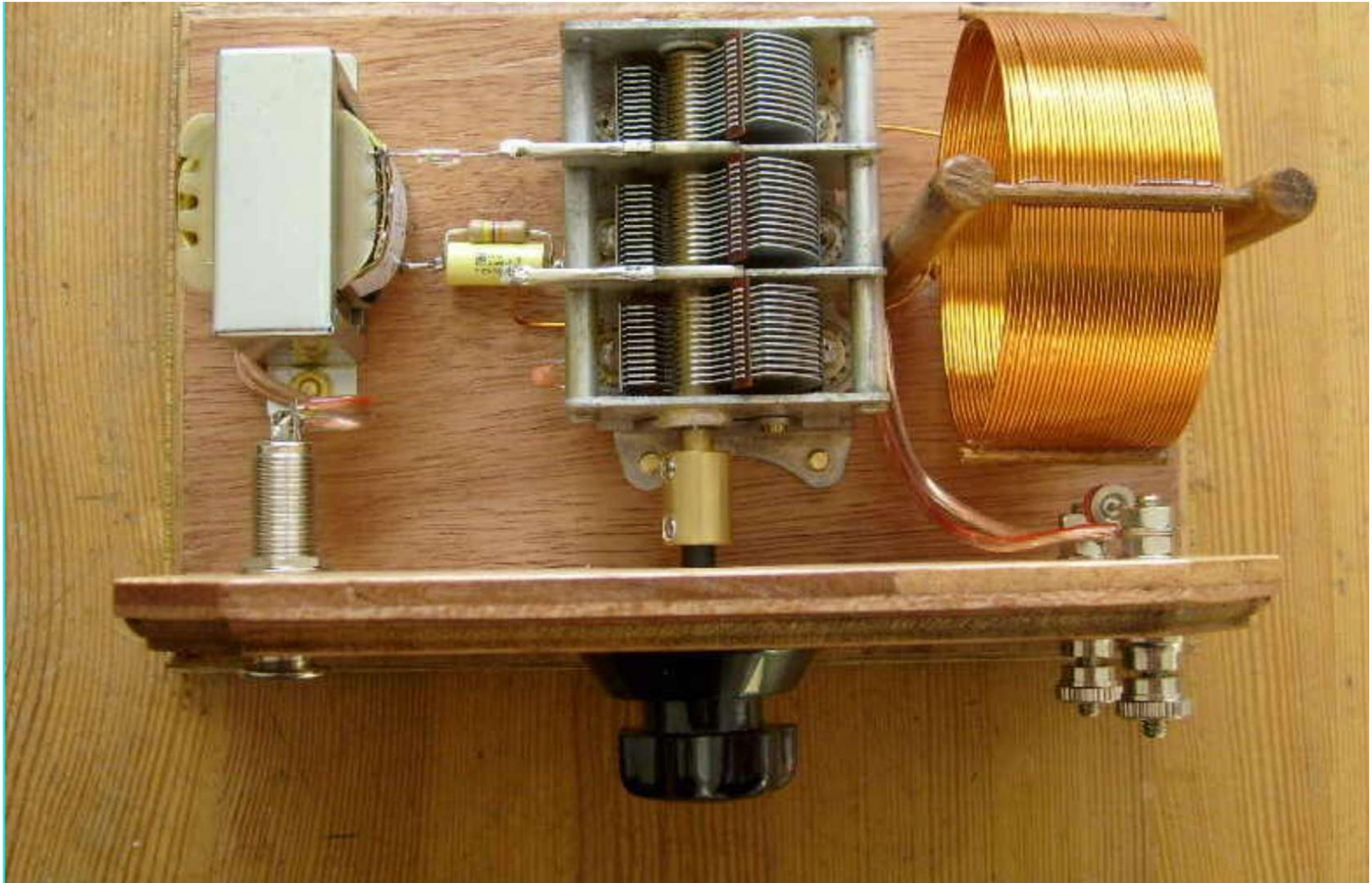


Solder the two wires from the transformer to the headphone socket (see for detail: next picture).

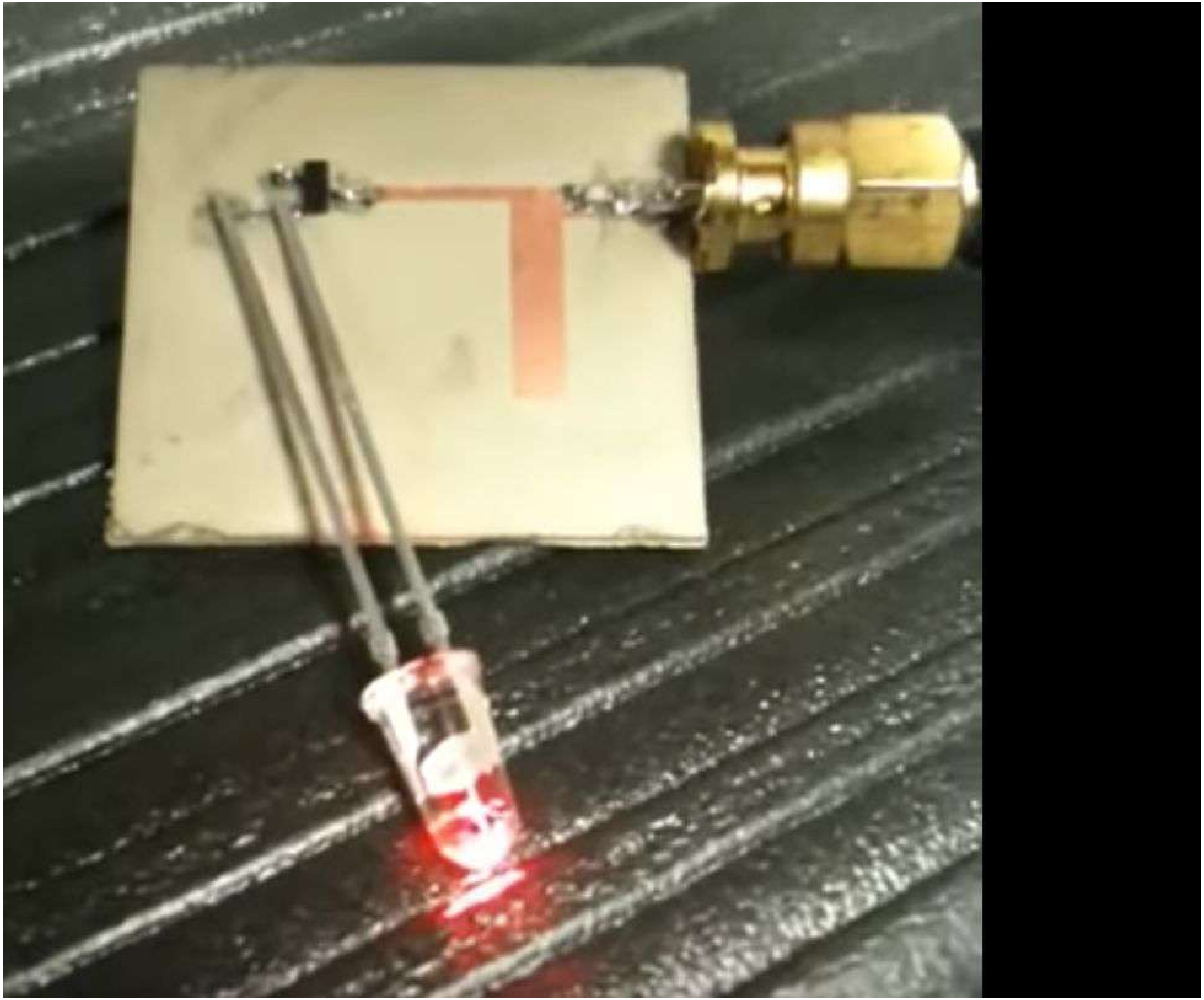
Solder the two wires from the tuning capacitor to the terminal posts.
The wire with the red line on it, comes on the upper (antenna) connection.
The wire without red line, comes on the lower (ground) connection.

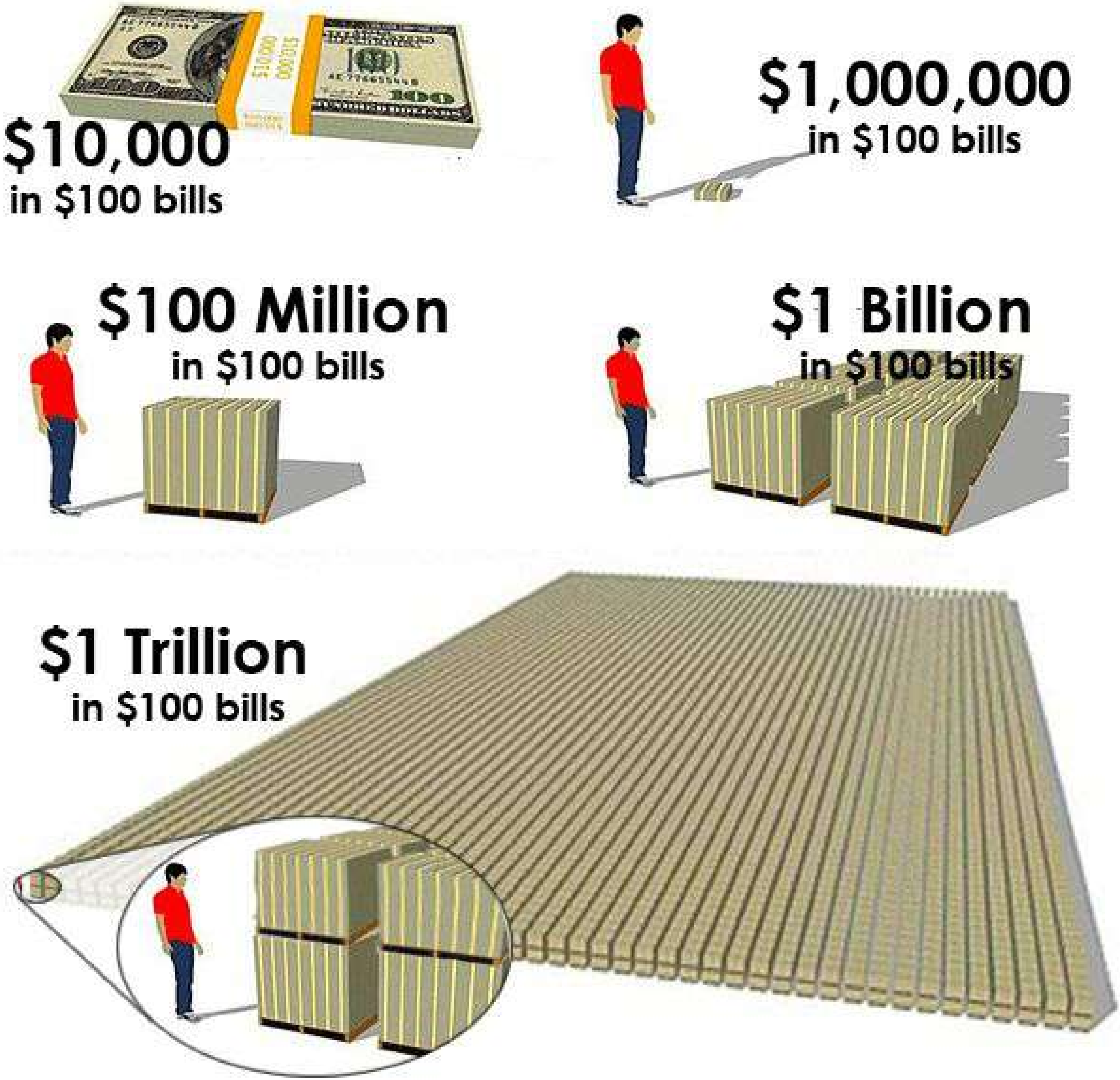


Detail of the wires on the headphone socket.
The wire without red line comes on the ground connection.
The wire with the red line comes on the two signal pins, so these two signal pins are connected together.



Mount the extension shaft and the knob on the tuning capacitor.
In the middle position, the pointer on the knob must point upwards.




$10,000
in $100 bills
$1,000,000
in $100 bills
$100 Million
in $100 bills
$1 Billion
in $100 bills
$1 Trillion
in $100 bills

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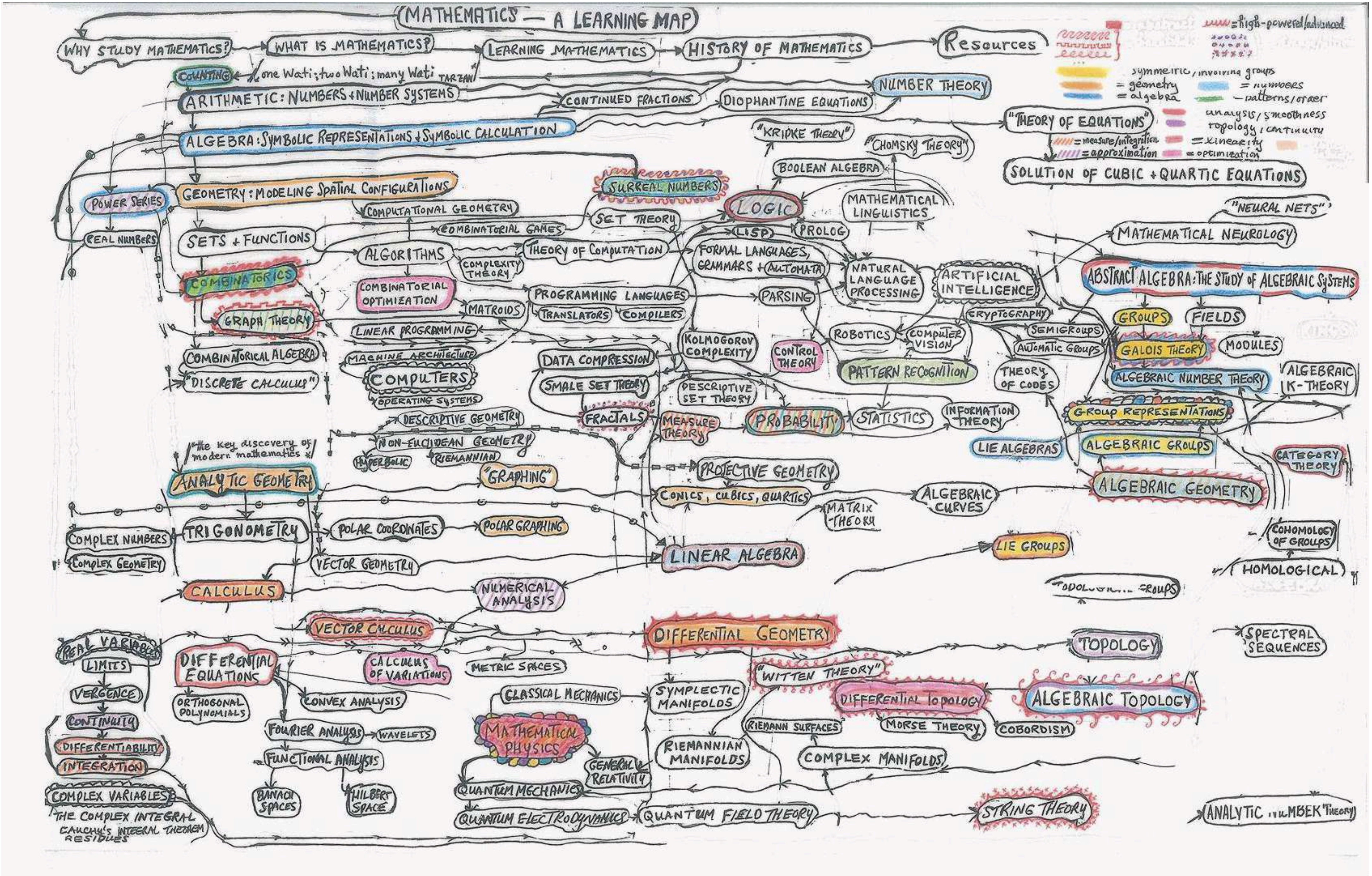
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WHY STUDY MATHEMATICS?
WHAT IS MATHEMATICS?
LEARNING MATHEMATICS
HISTORY OF MATHEMATICS
Resources
= high-powered/advanced
symmetric, involving groups
= geometry
= algebra
= numbers
= patterns/order
analysis/smoothness
topology/continuity
= measure/integration
= linearity
= approximation
= optimization
COUNTING
one Wati; two Wati; many Wati
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CONTINUED FRACTIONS
DIOPHANTINE EQUATIONS
NUMBER THEORY
ALGEBRA: SYMBOLIC REPRESENTATIONS + SYMBOLIC CALCULATION
"THEORY OF EQUATIONS"
"KRIPKE THEORY"
"CHOMSKY THEORY"
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POWER SERIES
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SET THEORY
"NEURAL NETS"
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GALOIS THEORY
MODULES
KOLMOGOROV COMPLEXITY
CONTROL THEORY
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PATTERN RECOGNITION
THEORY OF CODES
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"DISCRETE CALCULUS"
COMPUTERS
OPERATING SYSTEMS
SMALE SET THEORY
DESCRIPTIVE SET THEORY
DESCRIPTIVE GEOMETRY
FRACTALS
MEASURE THEORY
PROBABILITY
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GROUP REPRESENTATIONS
NON-EUCLIDEAN GEOMETRY
HYPERBOLIC
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"the key discovery of modern mathematics"
LIE ALGEBRAS
ALGEBRAIC GROUPS
CATEGORY THEORY
"GRAPHING"
PROJECTIVE GEOMETRY
ANALYTIC GEOMETRY
CONICS, CUBICS, QUARTICS
ALGEBRAIC CURVES
ALGEBRAIC GEOMETRY
MATRIX THEORY
COMPLEX NUMBERS
TRIGONOMETRY
POLAR COORDINATES
POLAR GRAPHING
COHOMOLOGY OF GROUPS
COMPLEX GEOMETRY
VECTOR GEOMETRY
LINEAR ALGEBRA
LIE GROUPS
HOMOLOGICAL
CALCULUS
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QUANTUM MECHANICS
THE COMPLEX INTEGRAL
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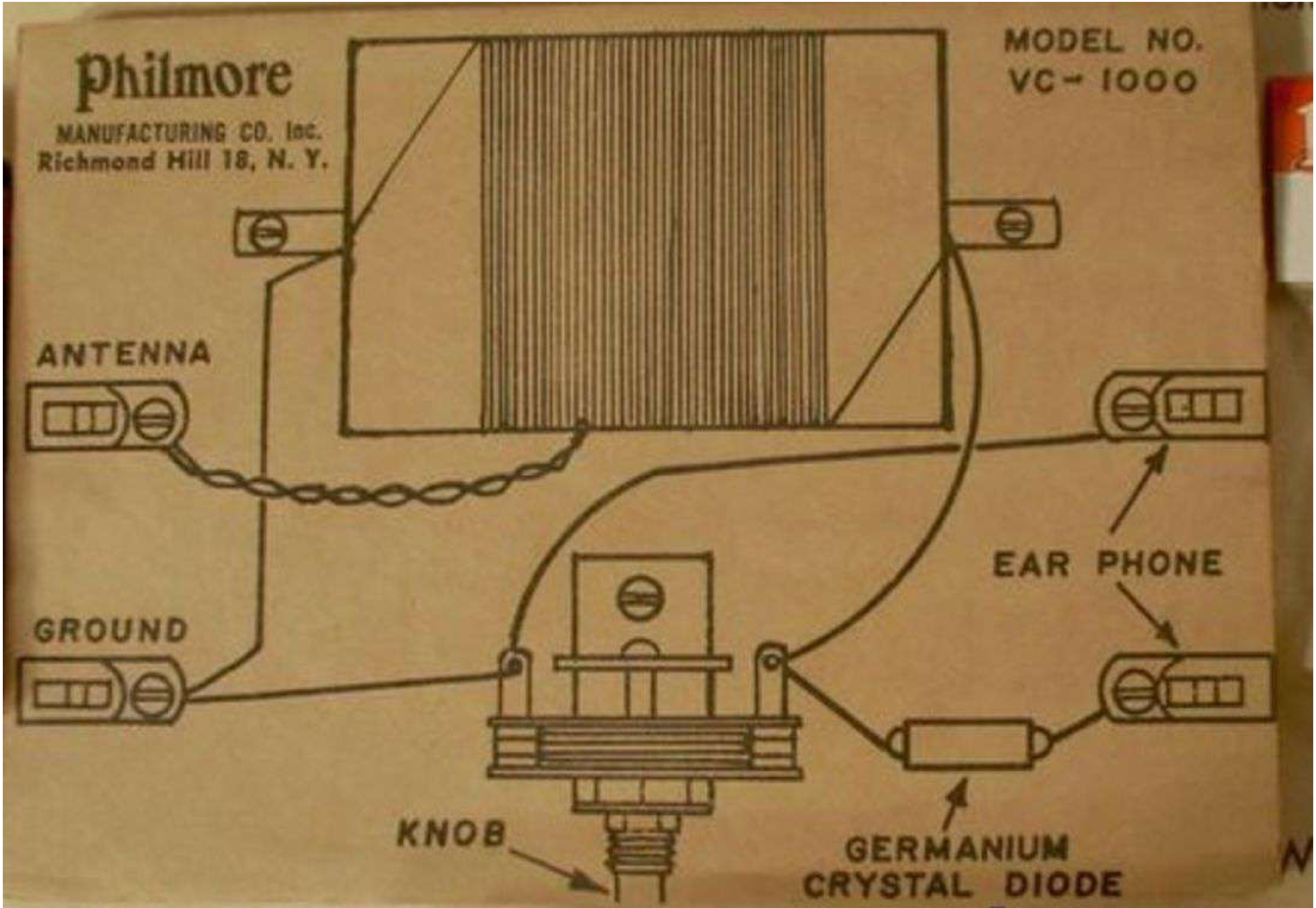
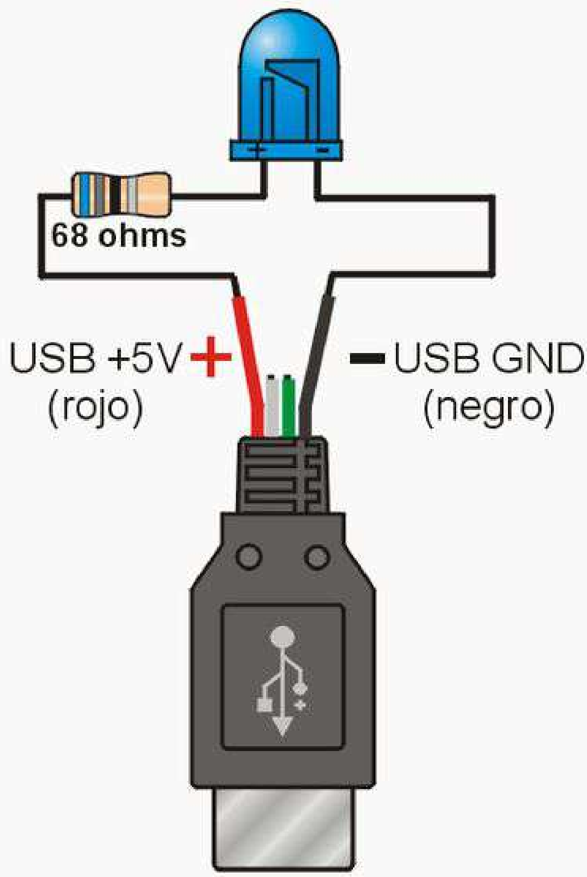
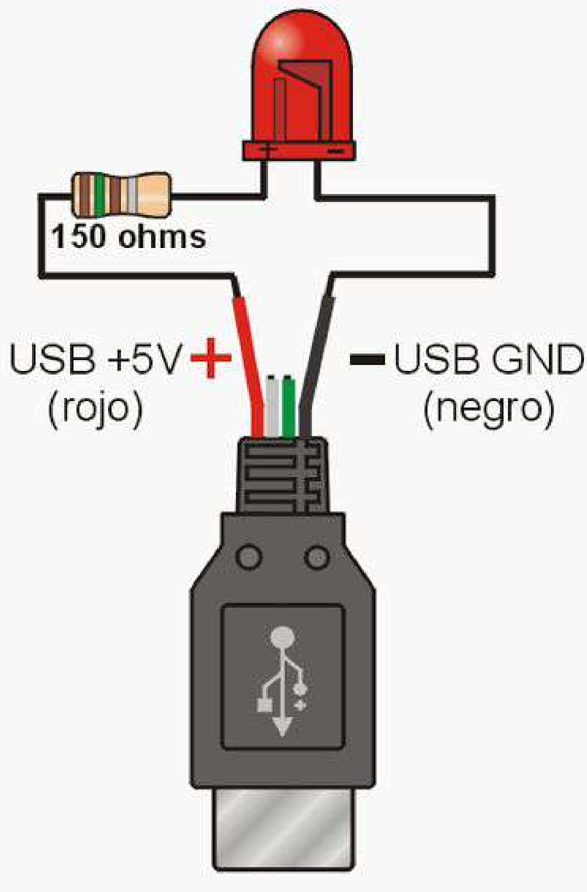
RESIDUES
QUANTUM ELECTRODYNAMICS
QUANTUM FIELD THEORY
STRING THEORY
ANALYTIC NUMBER THEORY


Philmore
MANUFACTURING CO. Inc.
Richmond Hill 18, N. Y.
MODEL NO.
VC-1000
ANTENNA
GROUND
EAR PHONE
KNOB
GERMANIUM
CRYSTAL DIODE

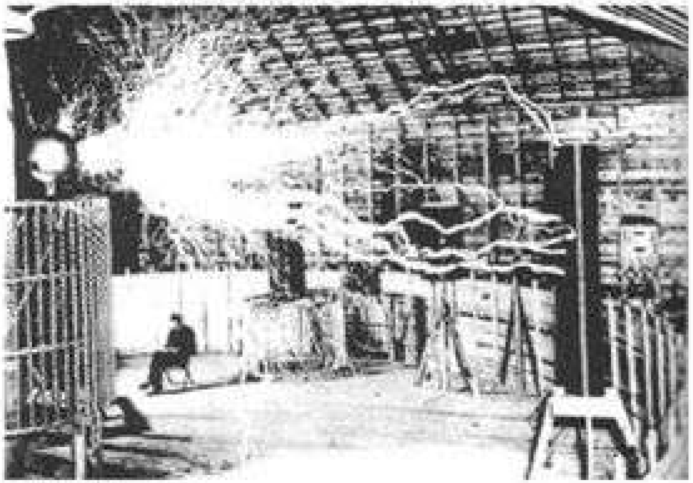
1 LED azul
(con tensión entre 3V y 3,6V)

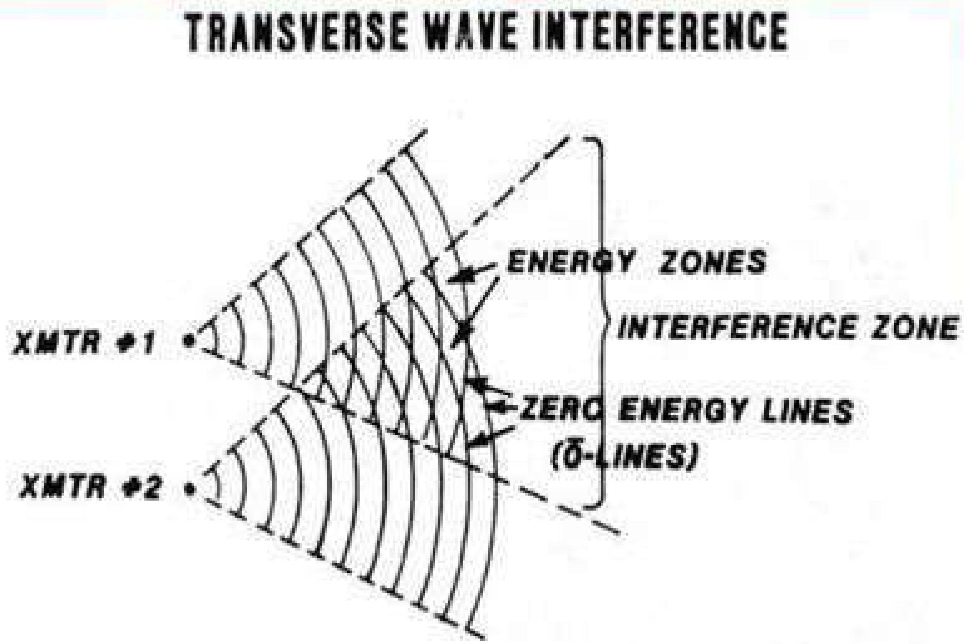


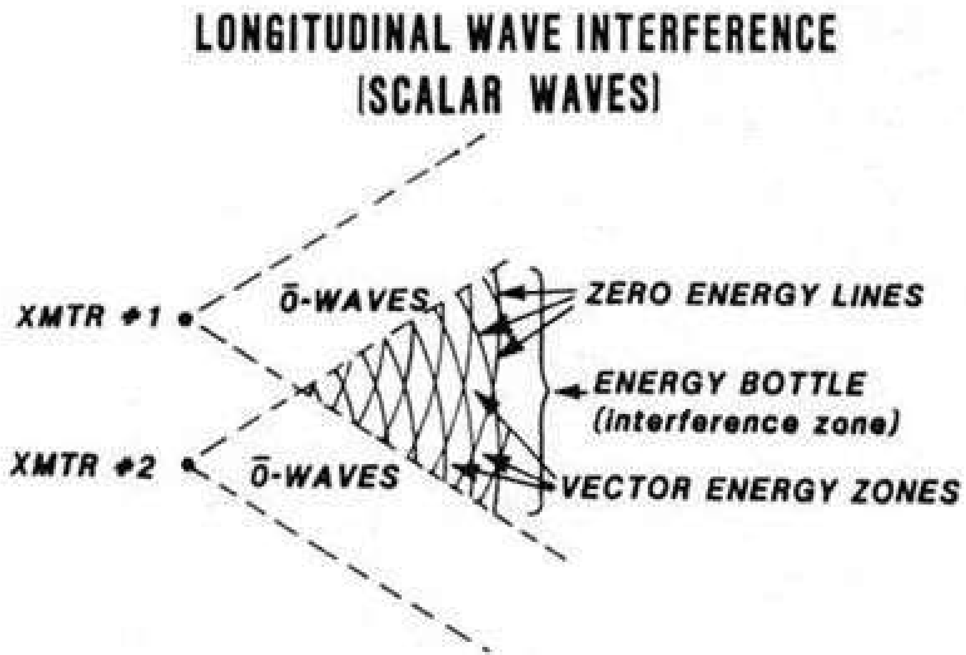
1 LED rojo
(con tensión entre 1,8V y 2,1V)



The Tesla Experiment

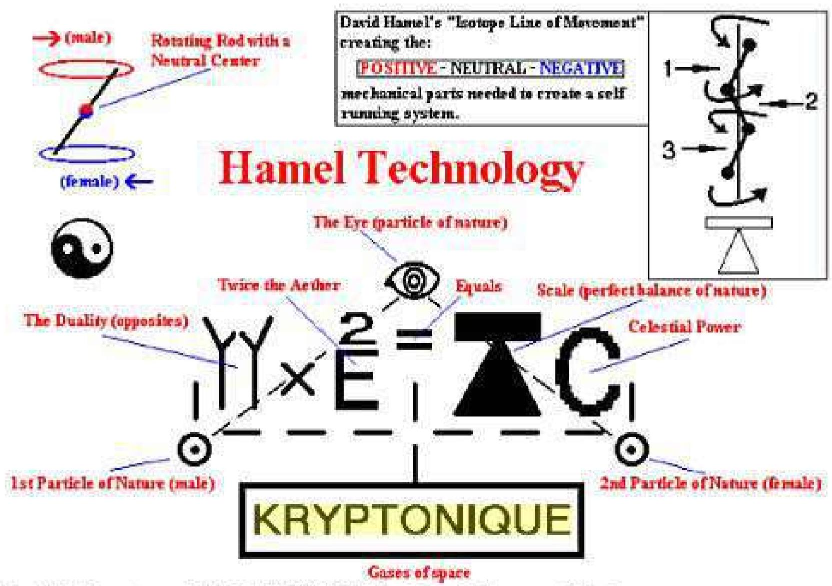






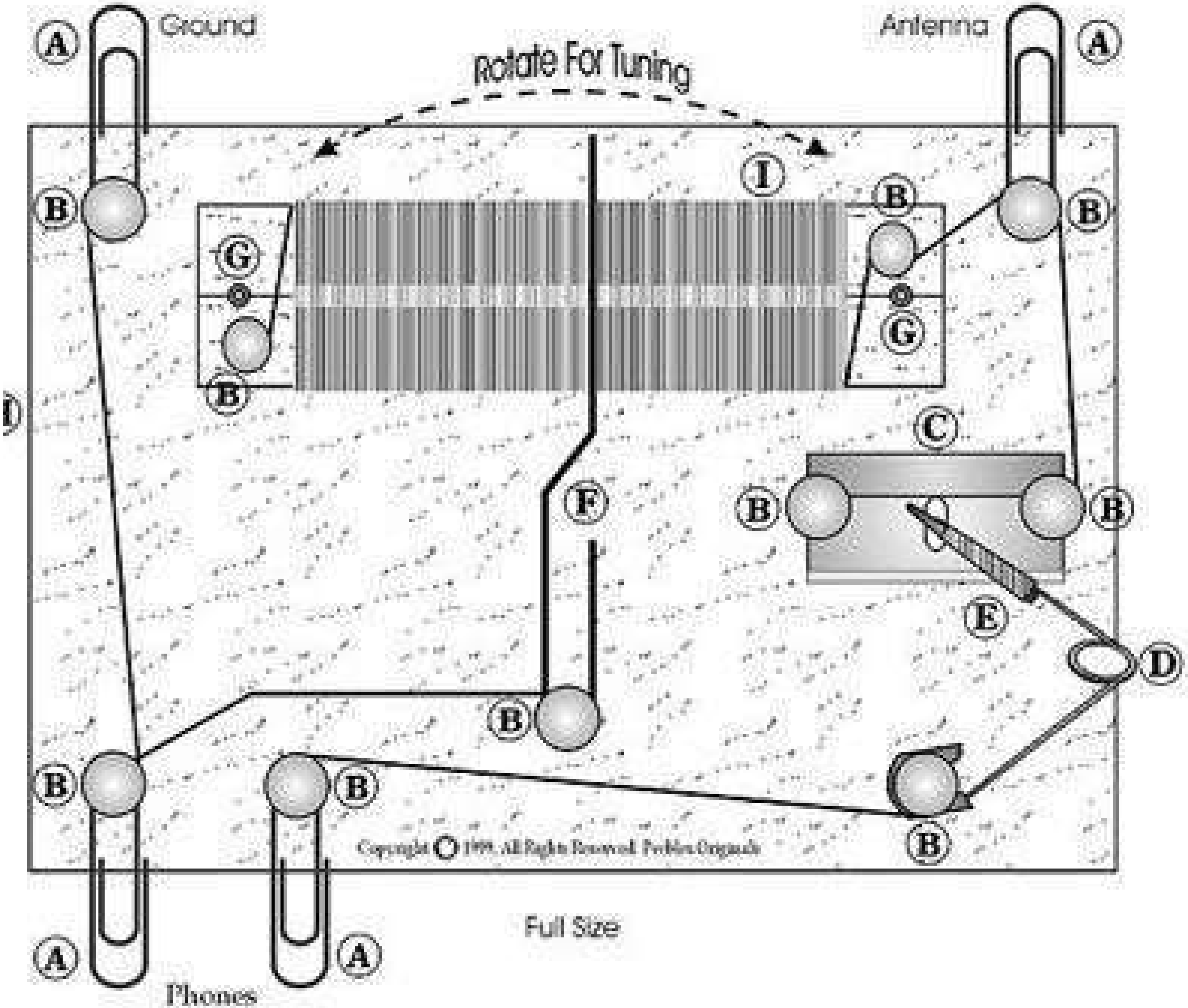
Lost Dwgs & Tech, Ancient India, & "Four"

THE LOST HAMEL DRAWINGS:



Particle Structure. [The MOST IMPORTANT Hamel Diagram of All.]


Addie's super foxhole radio schematic
magnet wire
120-200 winds
safety pin
jammed into
#2 pencil lead
shorter the pencil
the better
ground:
can be combined
with 1/4" jack
antenna:
the longer
the better
1/2 blued razor
other half connected
to inductor coil
1/4" jack or pickup
to be plugged into amp



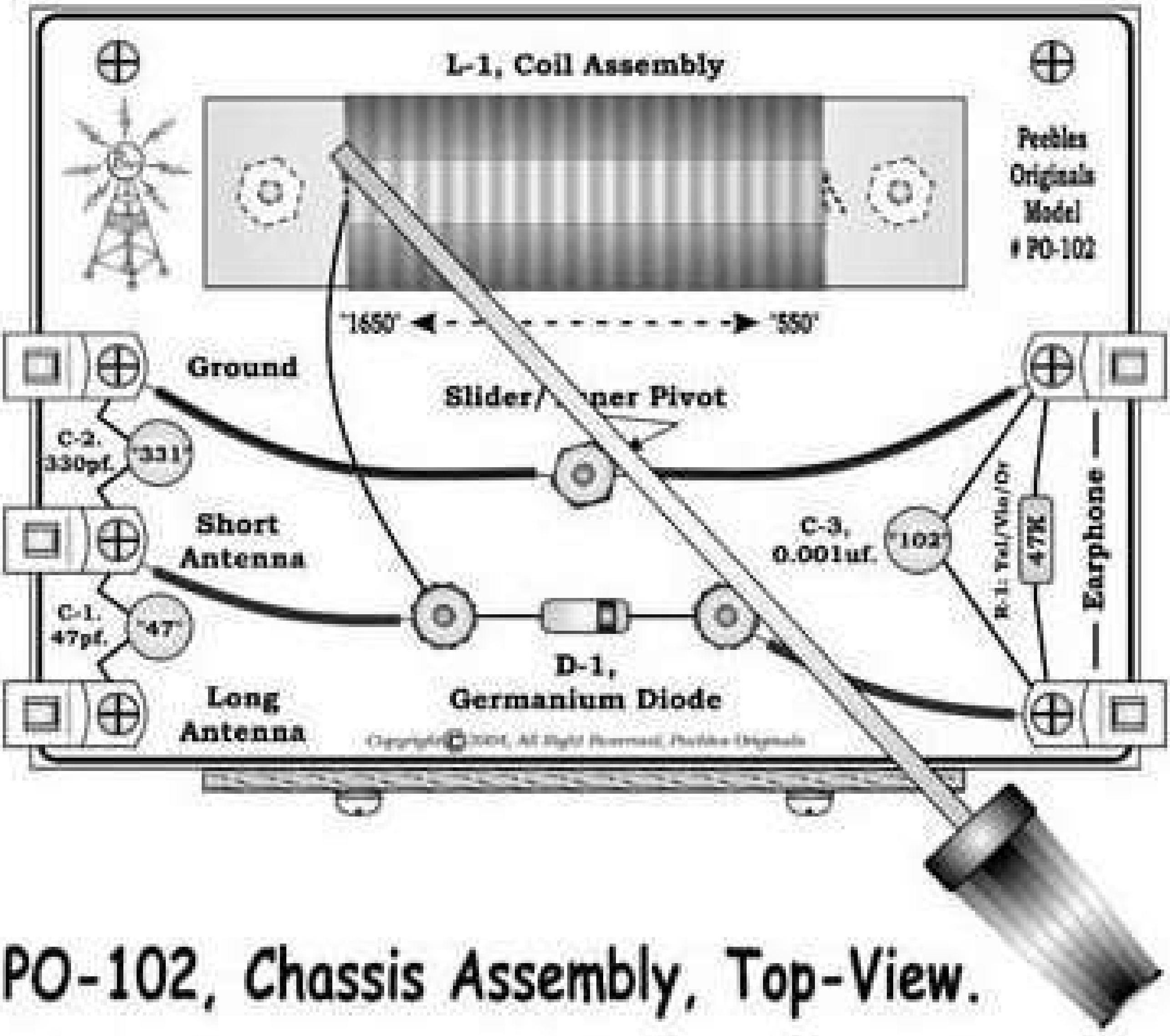
Ground
Antenna
Rotate For Tuning
A
A
B
B
I
B
B
G
G
B
C
B
B
F
E
D
B
B
B
B
Copyright © 1999, All Rights Reserved. Preblen Originals
A
A
Phones

Full Size

The PO-102, Crystal Radio Kit, w/Slider-Tuning!

Perfect for parents, grandparents, and teachers to build with kids! Also a super starter kit for the beginning adult builder! Includes small coil form, wire, slider assembly, capacitors, and diode. Easy parts layout guide provided for kids. Excellent performance for such a simple but elegant classic slider. Earplug included.

PO-102, w/Crystal Earphone



PO-102, Chassis Assembly, Top-View.


Fire Kit Example
Compressed Trioxane
WaterProof matches
in Waterproof Case
Water Proof Case
Waterproof
Fat Wood
Home-Made
Fire starters
Chem-lights
for starting fires in dark
9 Hour
Candle
Farro Rod
Key Chain
for Farro Rod

WWW.PREPPERSSHOP.CO.UK

THE ULTIMATE BUG OUT BAG

1. Anglo Arms Rambo Knife
2. Anglo Arms Machete
3. Austrian Ex-Military Water Flask
4. BCB Trekker Lifesaver Pack
5. BCB Compact Fishing Kit
6. Canadian Gas Mask w/ Filters
7. Feit Electric 500 LED Torch
8. French Military Mess Tins
9. Hexamine Solid Fuel Cooker
10. Heavy Duty Camo Tarp
11. Highlander Survival Bag
12. Highlander Solid Fuel Cooker
13. Highlander Trekker Hammock
14. Highlander Folding Saw
15. Kombat UK W/proof Matches
16. Kombat UK 40l Molle Bag
17. Kombat UK Fire Starting KIt
18. Kombat UK Compass
19. Kombat UK Throwing Axe
20. Oasis Water Purification Tablets
21. Pro Force Survival Saw
22. Sawyer Mini Water Filter
23. Sharpening Stone
24. Survival Mirror
25. Turboflame Lighter
26. UST Survival Poncho
27. Wateproof Rucksack Liner
28. Wind Up Solar Torch
29. Wooden Deluxe Knife w/ Case
30. 100ft Paracord
31. 24hr Ration Pack

£280

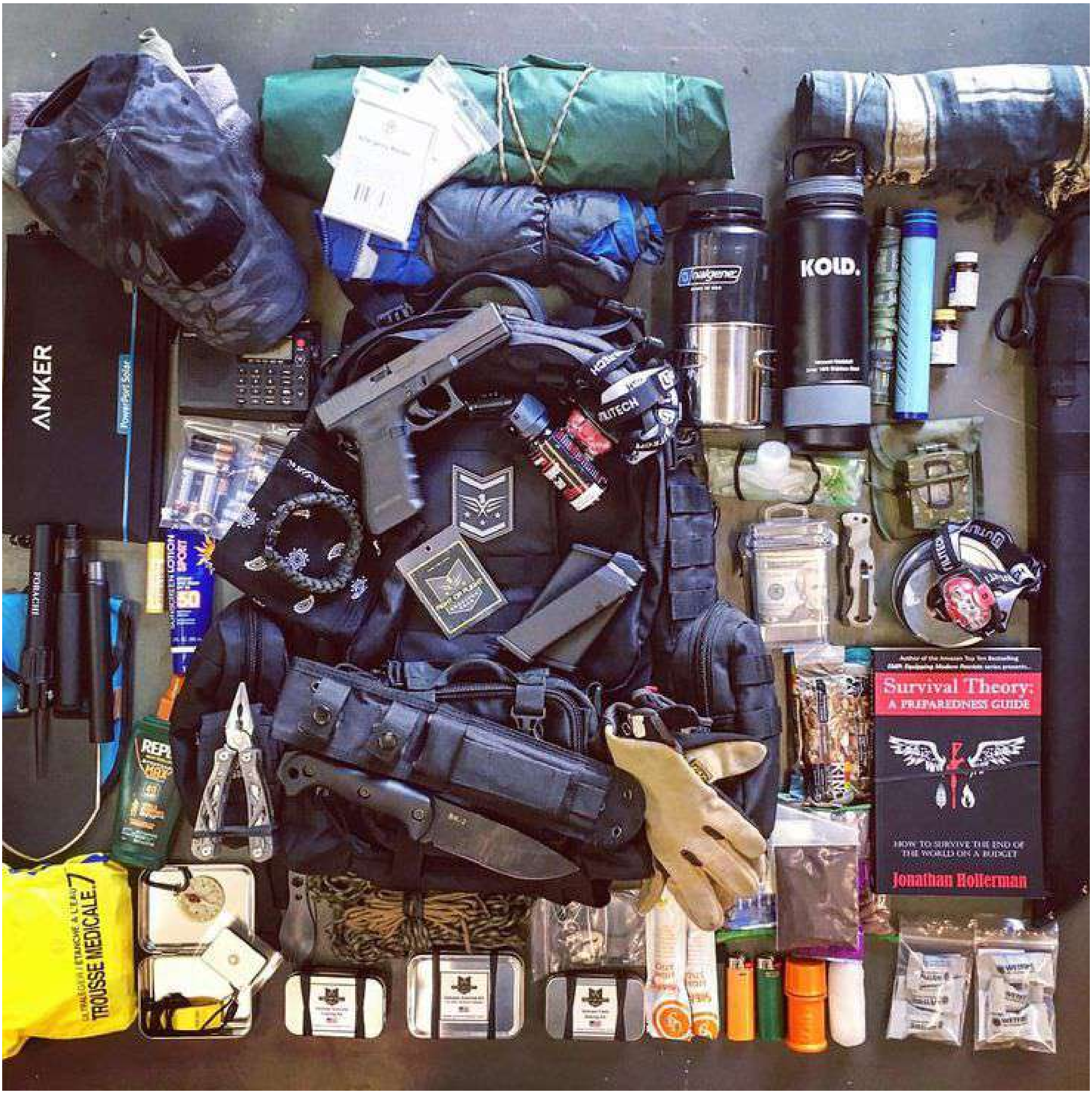

ERbar
FRONTIER STRAW

Maine Military Supply's 72 Hr Bug-Out-Bag

Item Description	SKU:	Org.Price:
#1: Solar Panel Charger	014318	$49.99
#2: Tactical Trauma Kit #1	0082110003	$39.99
#3: 8LED Head Lamp Silver	019140	$4.99
#4: 40IN-1 Dynamo Energy Radio	019138	$19.99
#5: 100' Black Parachute Cord	016704	$6.99
#6: One (1) Ameriglow 6" Light Stick	018848	$1.99
#7: Magnesium Fire Starting Tool	005608	$7.99
#8: Sabre 3-IN-1 Defense Spray	005555	$11.99
#9: Emergency Survival Blanket	05606	$2.99
#10: Spork OD	020362	$3.99
#11: New Wire Handle Canteen Cup	008506	$9.99
#12: Canteen w/ Cover OD 1qt	003927	$8.98
#13: Wise Emergency Food Kit 72hr	017279	$29.99
#14: Medium Transport Pack Black	020355	$48.99
#15: Adventurer Knife Kit	020363	$24.99
#16: Trip Wire: Yellow & Green	019917	$2.99
#17: Waterproof Storage Box	019152	$1.99
#18: 10hr Hand and Body Warmers (x3)	08016	$4.47
#19: Coin Towels 4pk Tubes (x3)	019415	$1.47
#20: 3-IN-1 Compass Whistle	019133	$2.99
#21: 3-IN-1 Waterproof Match Tube	019759	$1.99
#22: Marching Lensatic Army Compass	007127	$11.99
#23: Waterproof Matches	016379	$2.99
#24: Water Purification PA+Plus Tabs	012838	$11.99
#25: 11 Function Survival Tool	019145	$2.99
#26: German Folding Stove w/ Fuel	003929	$2.99
	Total:	$322.69
		-20%

Total Bug Out Bag Weight: 12.4lbs

Your Price: $258.15

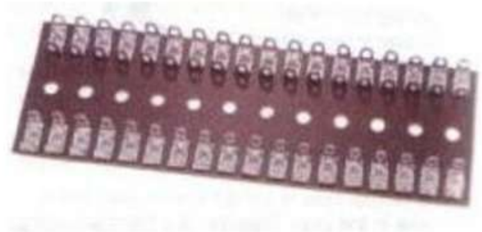

ANKER
PowerPort Solar
nalgene
KOLD.
Survival Theory:
A PREPAREDNESS GUIDE
HOW TO SURVIVE THE END OF THE WORLD ON A BUDGET
Jonathan Hollerman
TROUSSE MEDICALE .7


Bug out Bag
Water Bottle w/ Charcoal Filter
Aquamira Tablets
70 oz Camelbak Bladder in bag
Handwarmers
Cotton Balls
Fire Starter
Knife
Matches
TP
BG Parang
Fenix Flashlight w/
CR123 Batteries
6 MRE's
Fuel Stove Kit
Spare Contcats
First Aid Kit w/ Quikclot
Israeli Bandage
Walther P99 w/ 130 rds
of 9mm
Baby Wipes
Pampers


6 EMERGENCY USES FOR PARACORD
Did you know?
A single length of paracord has been tested to handle 550 lbs of weight.
1. Snare Trap
2. Fishing Line
3. Shelter
4. Fishing Net
5. Fire
SOCKET
BOW
DRILL
FIRE BOARD
CORD
6. Bear Bag
Did you know?
There are seven internal strands, each of which comes apart into two, so there's 14 thin lines.


AFTER 1 HOUR
© BRIGHTSIDE

5 WAY TAG STRIP



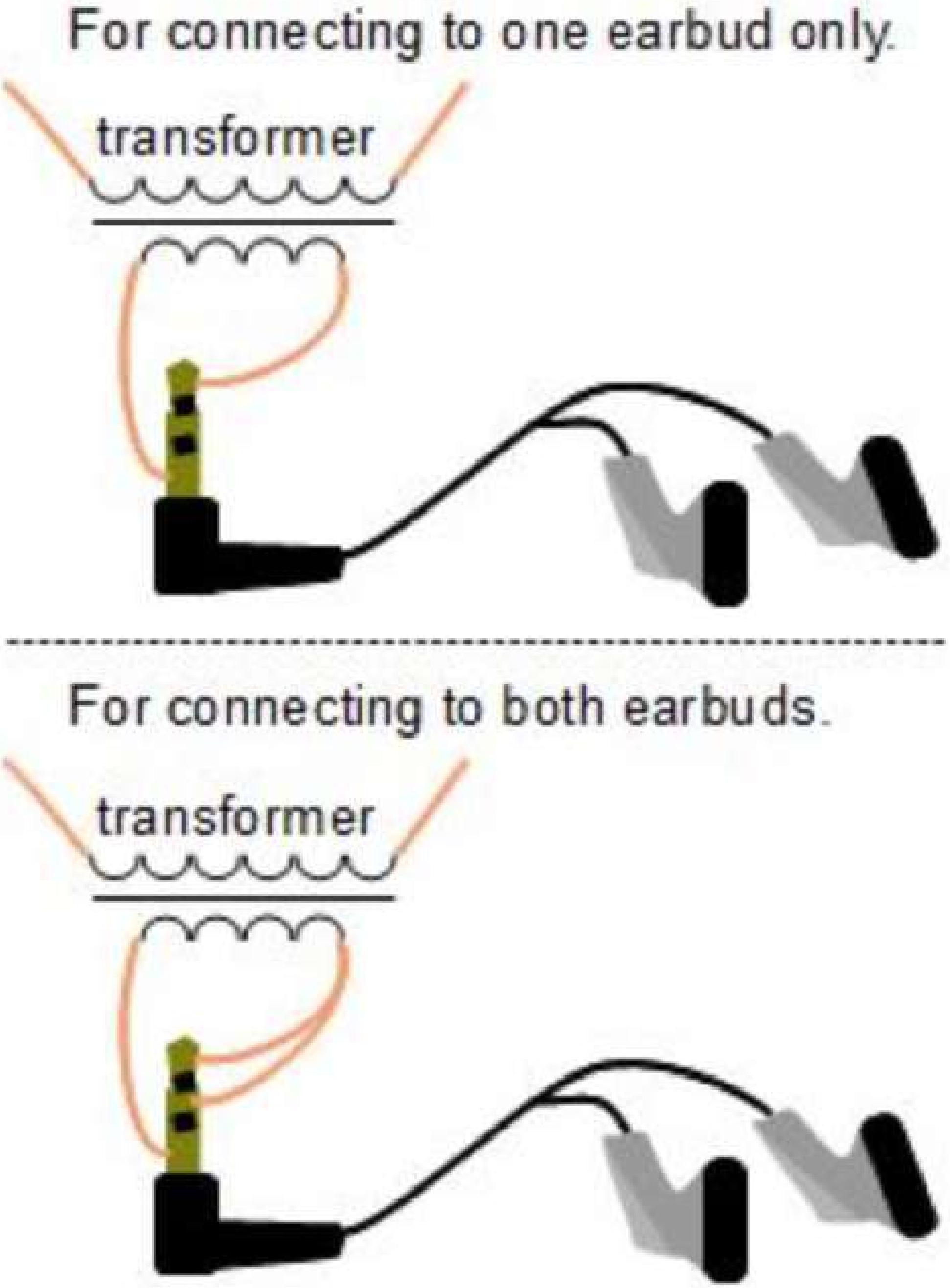
36 WAY TAG STRIP - TWO ROWS

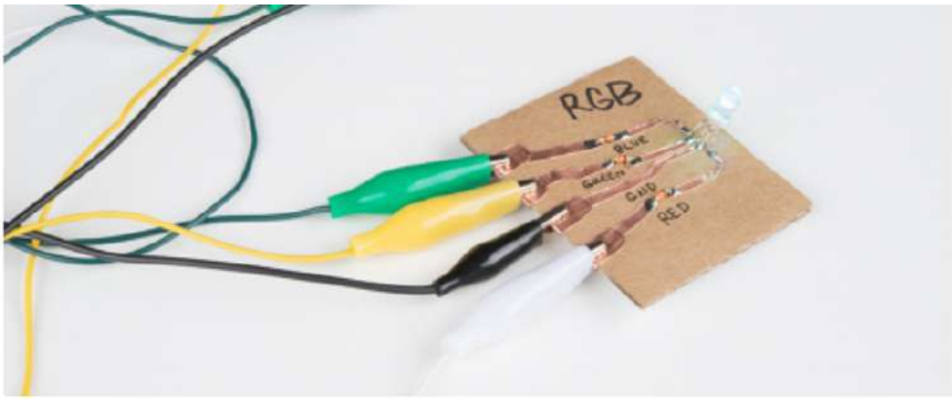
e wired together ,with a little ingenuity, with the component wires being held together in the grip of solderless crocodile clips, whereby the conne
older.

ex circuits a plastic Terminal Block (sometimes referred to as a choc' or chocolate block) can be utilised very effectively indeed. These are used
15 Amp and 30 Amp. The 5 and 15 Amp Terminal Blocks I have found to be the most suitable. The various component wires can be trappec
makes it easy to change the components around when experiment with different circuits. See The EXPERMENTAL CRYSTAL SET for more det

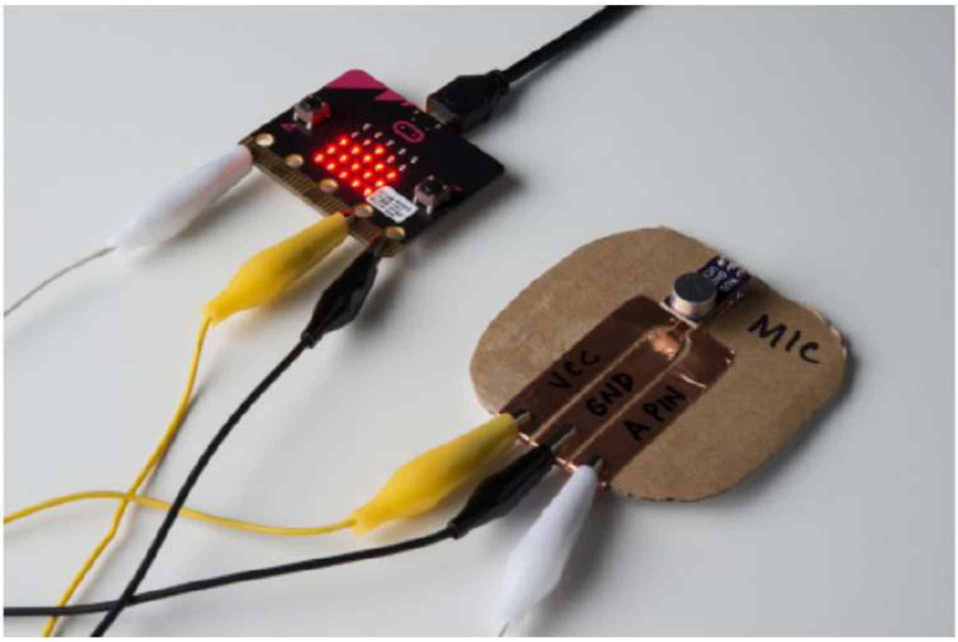
'CHOCOLATE' TERMINAL BLOCK

Where to connect to the earbud jack.





The current-limiting resistors are part of the cardboard circuit. The black spots are where I used the Bare Conductive paint



The micro:bit is plotting the analog values on the 5x5 LED matrix, which represent the noise level in the room.

All you need to get started is a roll of copper tape, a few components and conductive paint. One roll of tape and tube of paint can make about 200 circuits.

COSMIC VIBRATIONS

Octave	Manifestation	Vibrations per second	Gaps
1	TOUCH	2	
2		4	
3		8	
4		16	
5	SOUND	32	
6		64	
7		128	
8		256	
9		512	
10		1,024	
11		2,048	
12		4,096	
13		8,192	
14	ELECTROMAGNETIC (Longer Radio Waves)	16,384	
15		32,768	
16		65,536	
17		131,072	
18		262,144	
19		524,288	
20		1,048,576	
21		2,097,152	
22		4,194,304	
23		8,388,608	
24		16,777,216	
25		33,554,432	
26		67,108,864	
27		134,217,728	
28	ELECTROMAGNETIC	268,435,456	
29		536,870,912	
30		1,073,741,824	
31		2,147,483,648	
32		4,294,967,296	
33		8,589,934,592	
34		17,179,869,184	
35		34,359,738,368	
36		68,719,476,736	
37		137,438,953,472	
38	HEAT OR INFRARED	274,877,906,944	
39		549,755,813,888	
40		1,099,511,627,776	
41		2,199,023,255,552	
42		4,398,046,511,104	
43		8,796,093,022,208	
44		17,592,186,044,416	
45		35,184,372,088,832	
46		70,368,744,177,664	
47		140,737,488,355,328	
48	VISIBLE LIGHT	281,474,976,710,656	
49		562,949,953,421,312	
50		1,125,899,906,842,624	
51	ULTRAVIOLET	2,251,799,813,685,248	SPIRIT ELECTRONS
52		4,503,599,627,370,496	
53		9,007,199,254,740,992	
54		18,014,398,509,481,984	
55		36,028,797,018,963,968	
56		72,057,594,037,927,936	
57	X-RAY	144,115,188,075,855,872	
58		288,230,376,151,711,744	
59		576,460,752,303,423,488	
60			PSYCHIC PROJECTIONS
61			
62	GAMMA AND COSMIC RAYS	4,611,686,018,427,387,904	
63			
64		*The Vibrations in these octaves increase to an incomprehensible number per second.*	
65			
66			
67			
68			
69			
70		*The phenomena of psychic projections and soul essence occur in octaves considerably beyond those of any known material manifestations. Consequently, they must not be considered as immediately following any manifestations which we have shown on this chart.*	
71			
72			SOUL ESSENCE
73			
74			
75			
76			
77			
78			
79			
80			

(THESE INTERVALS AND FIGURES ARE APPROXIMATE AND NOT EXACT)

NOTICE

This chart was carefully compiled by the Editorial and Research Departments of AMORC College after consulting the most eminent scientific authorities on the subjects of physics and chemistry and comparing their observations and notations with the reports from the Rosicrucian laboratories in foreign countries.

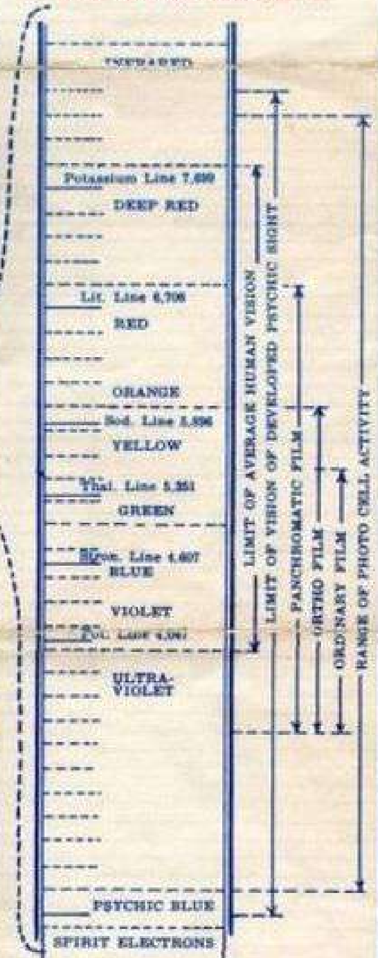
There is a slight disagreement in regard to the rates of vibrations for the various keys of the musical keyboard, due to different standards of pitch in various countries, and there is some disagreement among scientific authorities in regard to the colors associated with various musical notes. This chart represents not only the consensus of most of these authorities but also adheres strictly to what the Rosicrucians have been able to demonstrate as truth in our own laboratories and in the experiments of thousands of members in various parts of the world. Regardless, therefore, of any disagreement with authorities outside the organization, this chart is the authentic presentation of the Rosicrucian knowledge.

This chart is to be used by the members of the Rosicrucian Order in connection with their studies and experiments and is not to be used for any other purpose or in any other way. Like the lessons themselves, this chart and the facts contained on it are reserved and restricted in use under the rules and regulations of the organization.

INTERNATIONAL SEAL OF THE SUPREME LODGE of the Rosicrucian Order

AD ROSAM PER CRUCEM · AD CRUCEM PER ROSAM

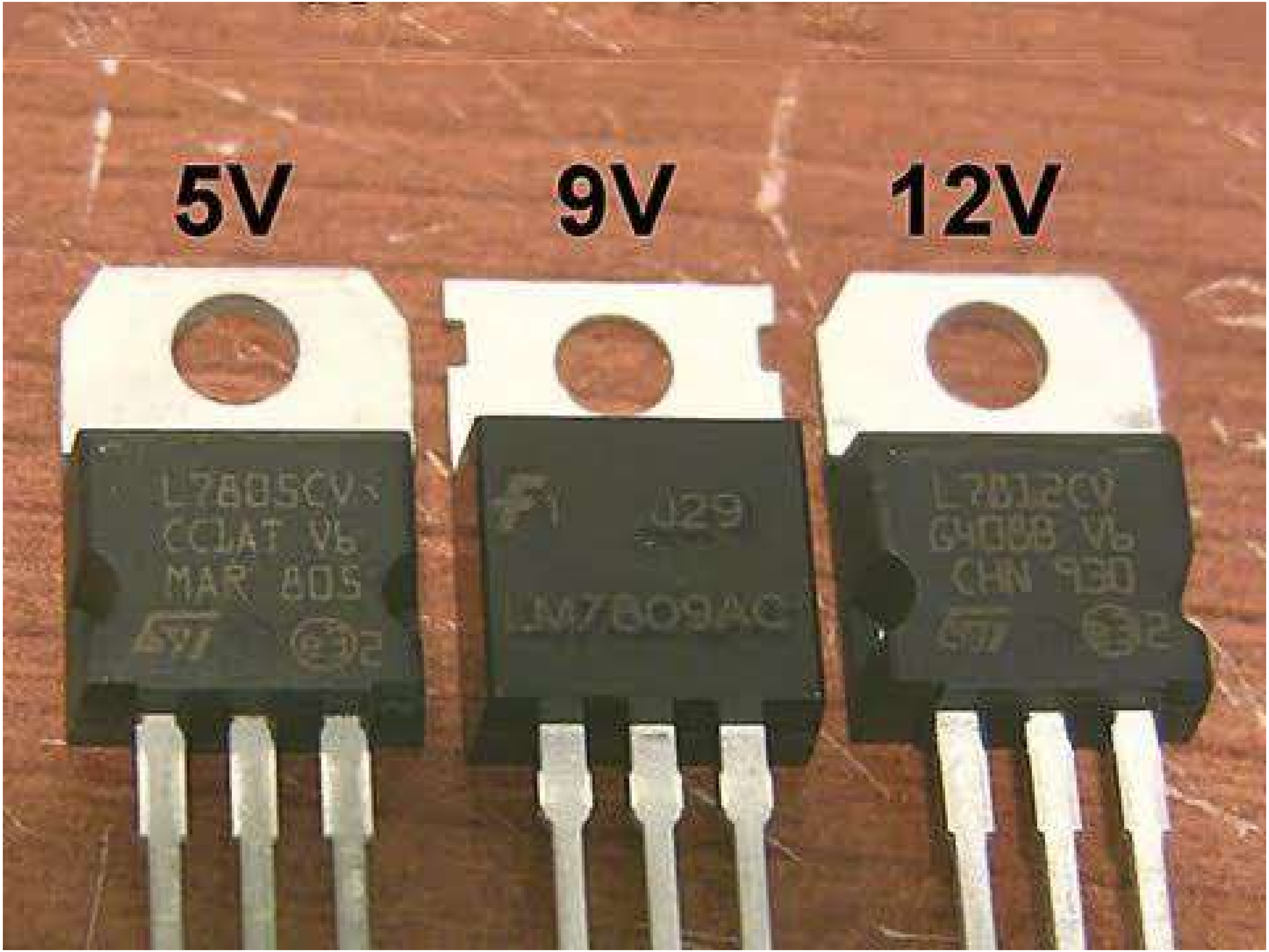
THE SOLAR SPECTRUM



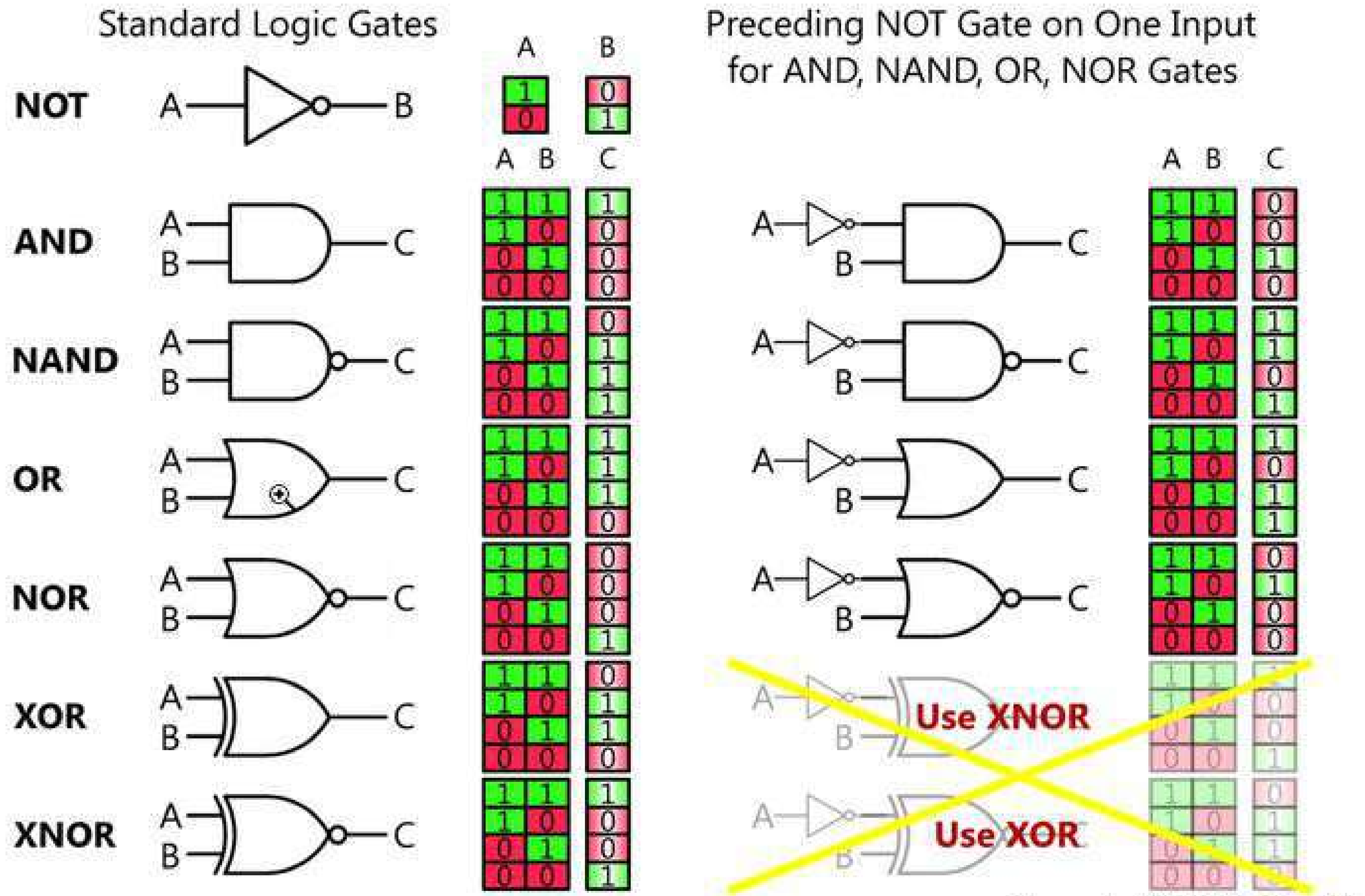
AMORC

THE *Rosicrucian Order* San Jose, California

LITHO. IN U.S.A.


5V
9V
12V
L7805CV
LM7809AC
L7812CV

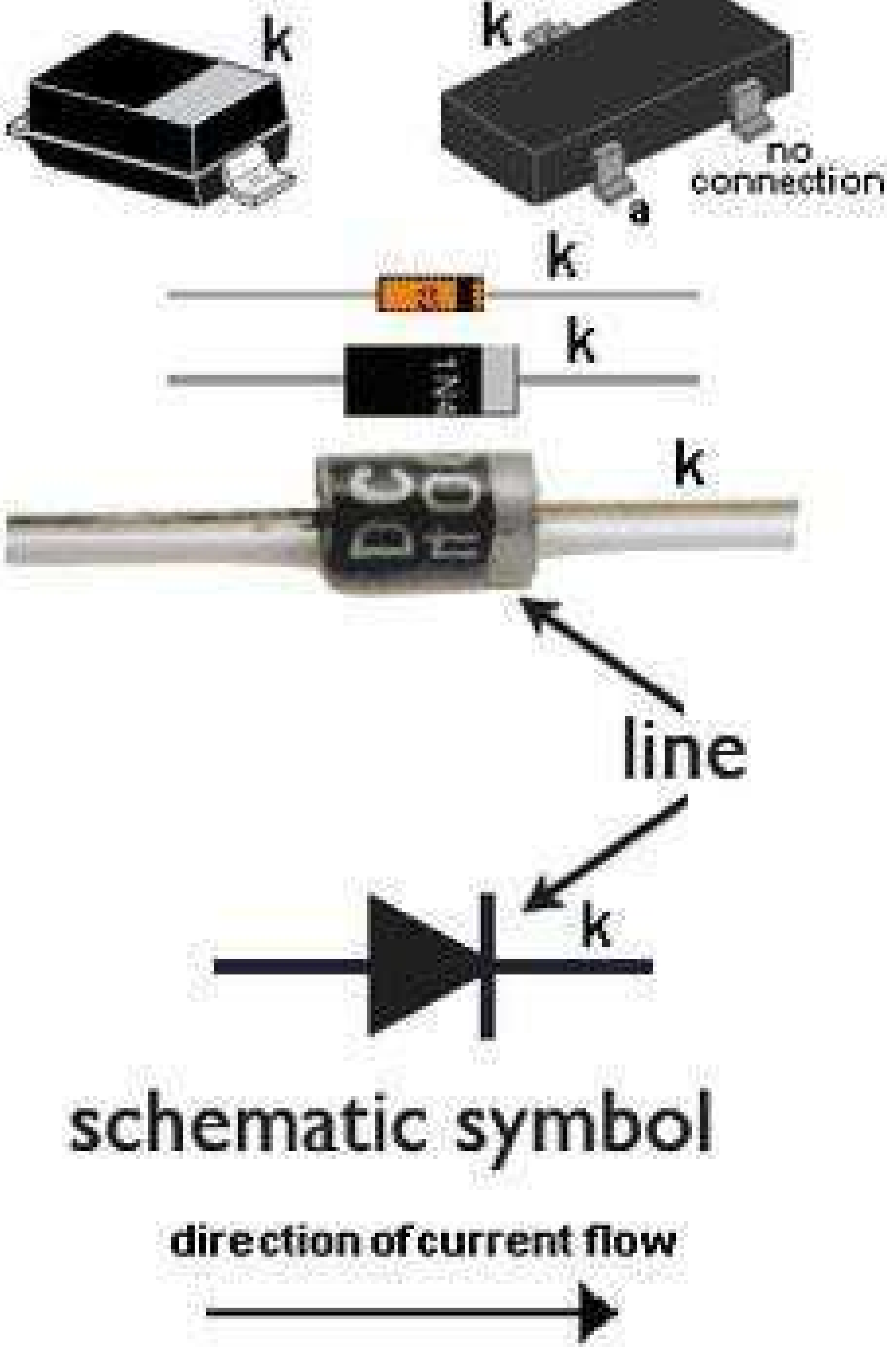
7 LOGIC GATES & 4 USEFUL COMBINATIONS




TYPE N F
SMA M
PAL/BELLING LEE F
UHF F
TYPE F F
MCX MALE
(OTHER END)
BNC F
SMA F

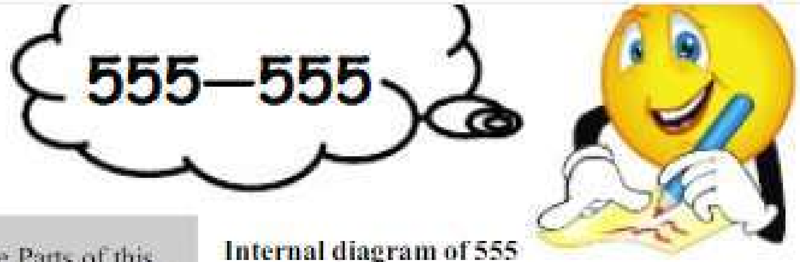

TYPE N F
SMA M
PAL/BELLING LEE F
UHF F
TYPE F F
MCX MALE
(OTHER END)
BNC F
SMA F

DIODE



k
k
no
connection
a
k
k
k
line
k
schematic symbol
direction of current flow

7. 555 Timer Projects

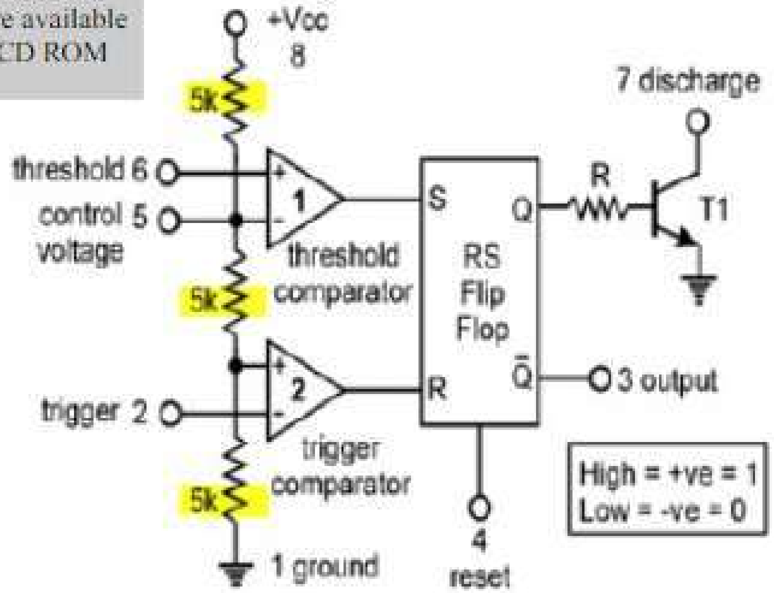


In this section we will make :

- 7.1 4 Key Piano
- 7.2 Light sensitive music circuit
- 7.3 Light controlled Police Siren
- 7.4 Touch Switch
- 7.5 Timer
- 7.6 Continuity Tester
- 7.7 Knight Rider
- 7.8 Cricket Game
- 7.9 Multipurpose circuit
- 7.10 Johnson counter

Some Parts of this project are available in Video CD ROM

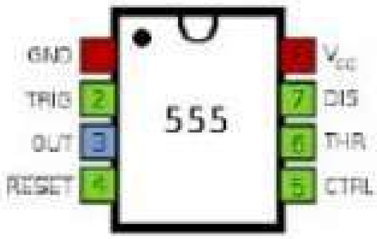
Internal diagram of 555



What is it about ?

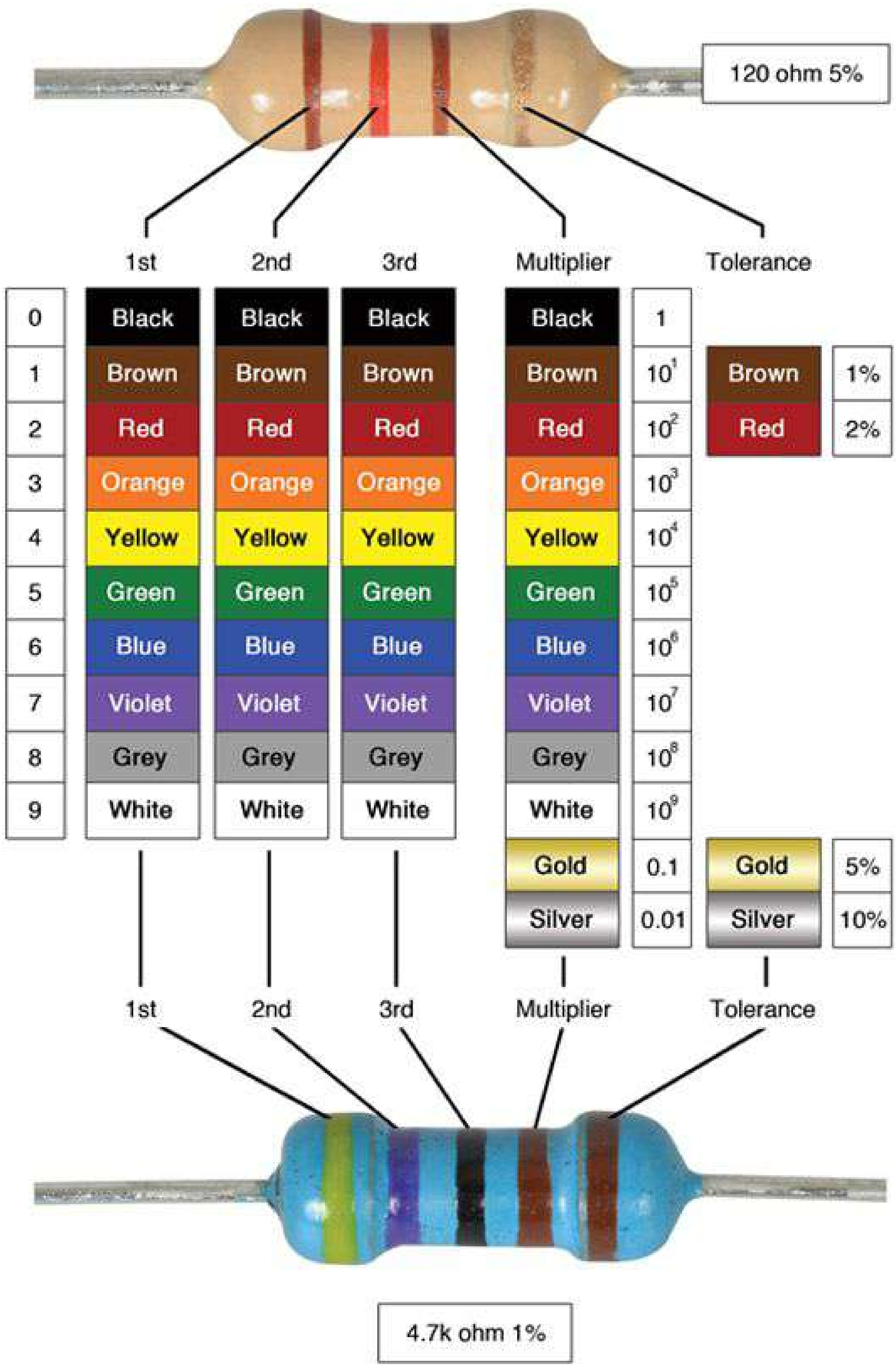
555 timer integrated circuit (IC) is a very popular chip used in variety of applications like timer, pulse generation and oscillators. This is a low cost, stable and widely available chip which makes it favorite for hobbyists. The internal components of 555 as shown in figure consists of 2 comparators and a flip flop. All of these components contain 25 transistors and 15 resistors packed in the IC.

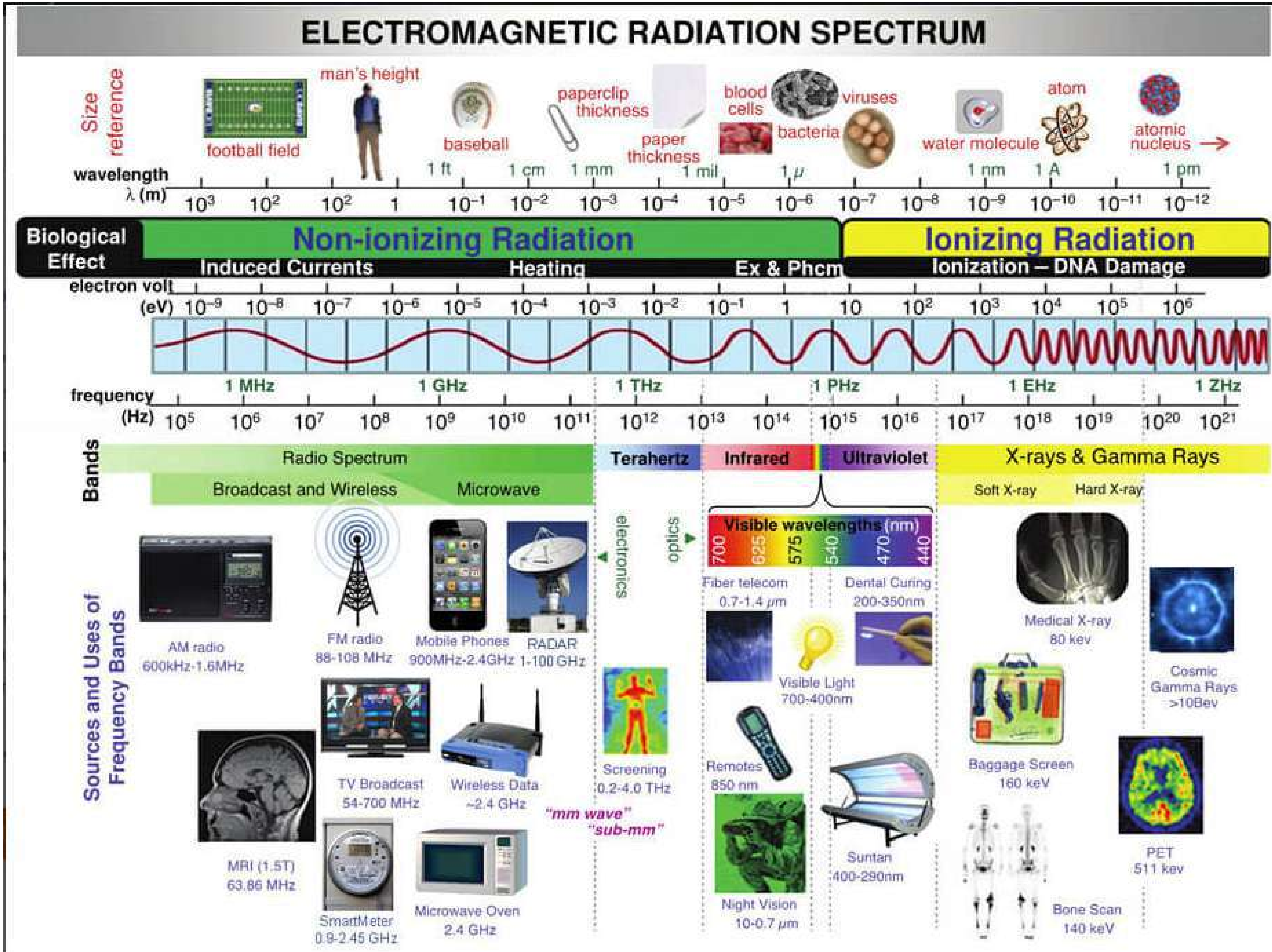
The three highlighted 5k resistors shown in figure are the reason why this IC is named as 555.



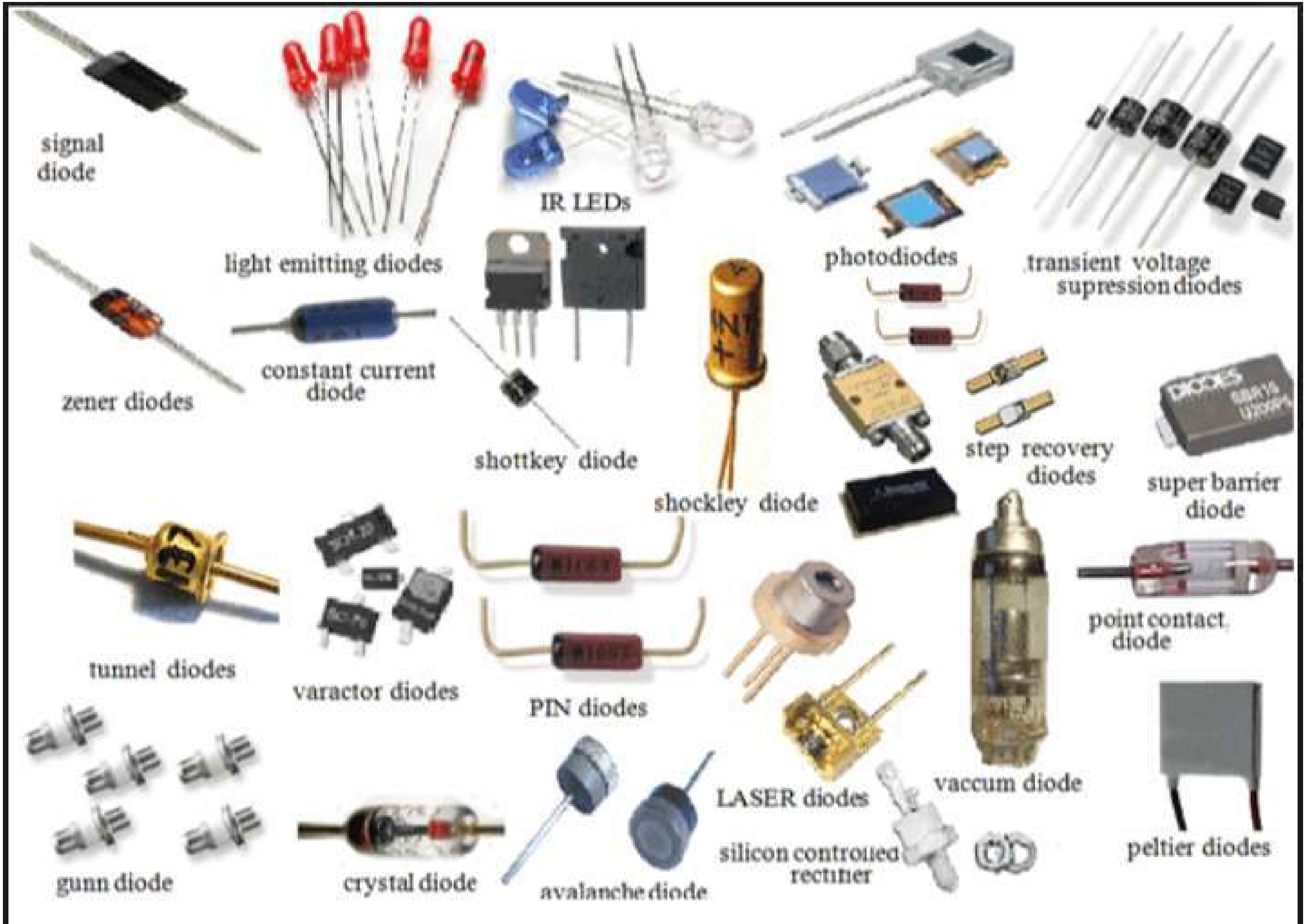
Please note the notch near first pin. This is made to indentify the first pin of IC.

Pin	Name	Purpose
1	GND	Ground reference voltage, low level (0 V)
2	TRIG	The OUT pin goes high and a timing interval starts when this input falls below 1/2 of CTRL voltage (which is typically 1/3 of V_{CC}, when CTRL is open).
3	OUT	This output is driven to approximately 1.7V below $+V_{CC}$ or GND.
4	RESET	A timing interval may be reset by driving this input to GND, but the timing does not begin again until RESET rises above approximately 0.7 volts. Overrides TRIG which overrides THR.
5	CTRL	Provides "control" access to the internal voltage divider (by default, 2/3 V_{CC}).
6	THR	The timing (OUT high) interval ends when the voltage at THR is greater than that at CTRL.
7	DIS	Open collector output which may discharge a capacitor between intervals. In phase with output.
8	V_{cc}	Positive supply voltage, which is usually between 3 and 15 V depending on the variation.

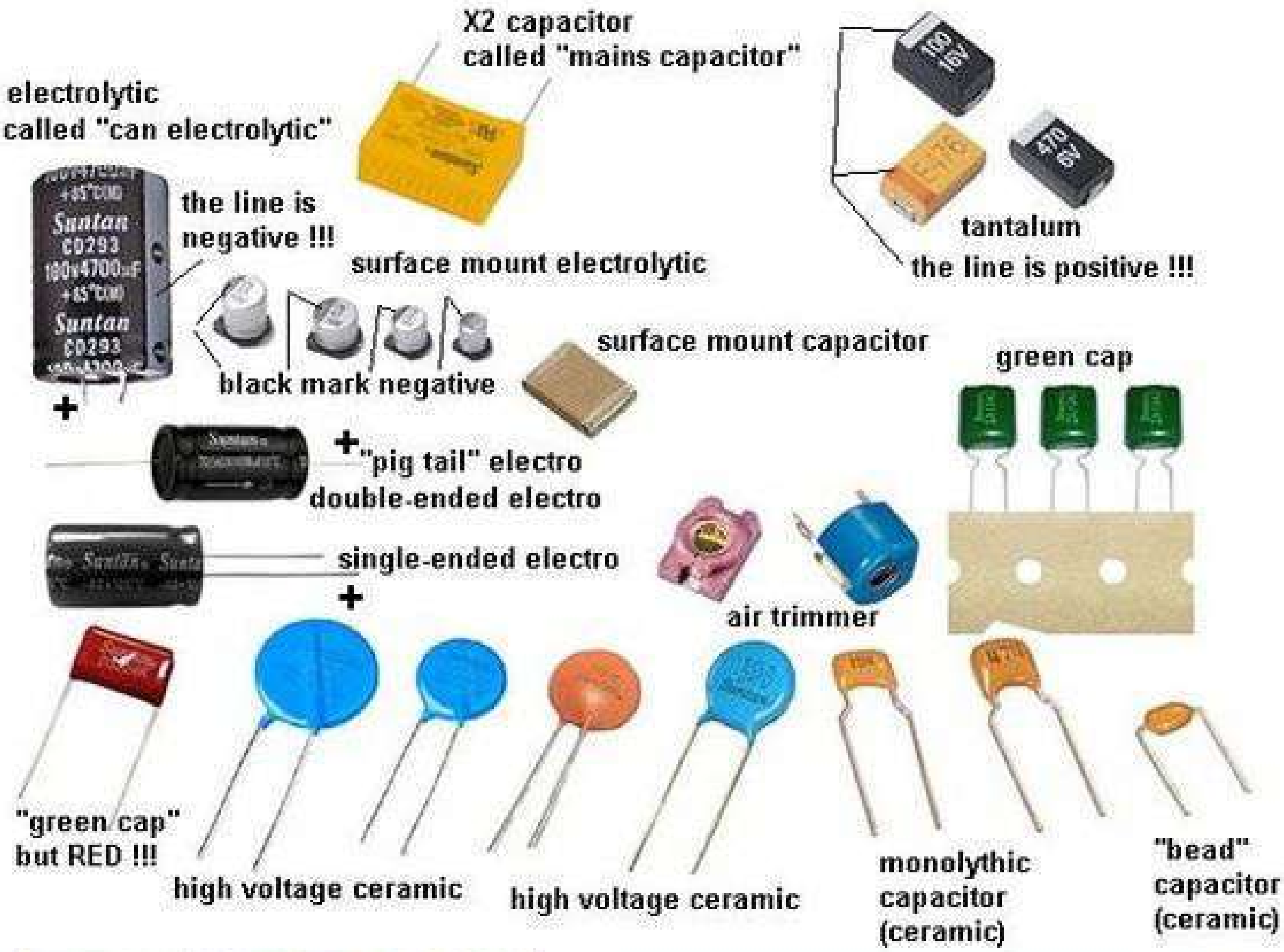

120 ohm 5%
1st
2nd
3rd
Multiplier
Tolerance
0 Black Black Black Black 1
1 Brown Brown Brown Brown 10^1 Brown 1%
2 Red Red Red Red 10^2 Red 2%
3 Orange Orange Orange Orange 10^3
4 Yellow Yellow Yellow Yellow 10^4
5 Green Green Green Green 10^5
6 Blue Blue Blue Blue 10^6
7 Violet Violet Violet Violet 10^7
8 Grey Grey Grey Grey 10^8
9 White White White White 10^9
Gold 0.1 Gold 5%
Silver 0.01 Silver 10%
1st
2nd
3rd
Multiplier
Tolerance
4.7k ohm 1%

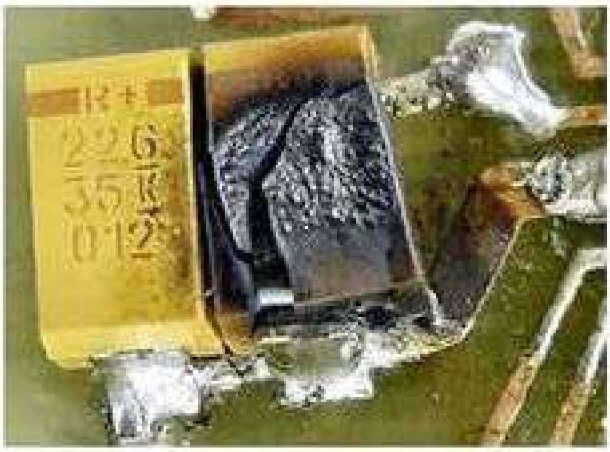


ELECTROMAGNETIC RADIATION SPECTRUM
Size reference
football field
man's height
baseball
paperclip thickness
paper thickness
blood cells
bacteria
viruses
water molecule
atom
atomic nucleus
wavelength λ (m)
1 ft
1 cm
1 mm
1 mil
1 μ
1 nm
1 A
1 pm
10^3 10^2 10^2 1 10^{-1} 10^{-2} 10^{-3} 10^{-4} 10^{-5} 10^{-6} 10^{-7} 10^{-8} 10^{-9} 10^{-10} 10^{-11} 10^{-12}
Biological Effect
Non-ionizing Radiation
Ionizing Radiation
Induced Currents
Heating
Ex & Phcm
Ionization – DNA Damage
electron volt (eV)
10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 1 10 10^2 10^3 10^4 10^5 10^6
frequency (Hz)
1 MHz
1 GHz
1 THz
1 PHz
1 EHz
1 ZHz
10^5 10^6 10^7 10^8 10^9 10^{10} 10^{11} 10^{12} 10^{13} 10^{14} 10^{15} 10^{16} 10^{17} 10^{18} 10^{19} 10^{20} 10^{21}
Bands
Radio Spectrum
Broadcast and Wireless
Microwave
Terahertz
Infrared
Ultraviolet
X-rays & Gamma Rays
Soft X-ray
Hard X-ray
electronics
optics
Visible wavelengths (nm)
700 625 575 540 470 440
Sources and Uses of Frequency Bands
AM radio
600kHz-1.6MHz
FM radio
88-108 MHz
Mobile Phones
900MHz-2.4GHz
RADAR
1-100 GHz
MRI (1.5T)
63.86 MHz
TV Broadcast
54-700 MHz
Wireless Data
~2.4 GHz
SmartMeter
0.9-2.45 GHz
Microwave Oven
2.4 GHz
Screening
0.2-4.0 THz
"mm wave"
"sub-mm"
Fiber telecom
0.7-1.4 μm
Dental Curing
200-350nm
Visible Light
700-400nm
Remotes
850 nm
Night Vision
10-0.7 μm
Suntan
400-290nm
Medical X-ray
80 kev
Cosmic Gamma Rays
>10Bev
Baggage Screen
160 keV
PET
511 kev
Bone Scan
140 keV



Types of Diode

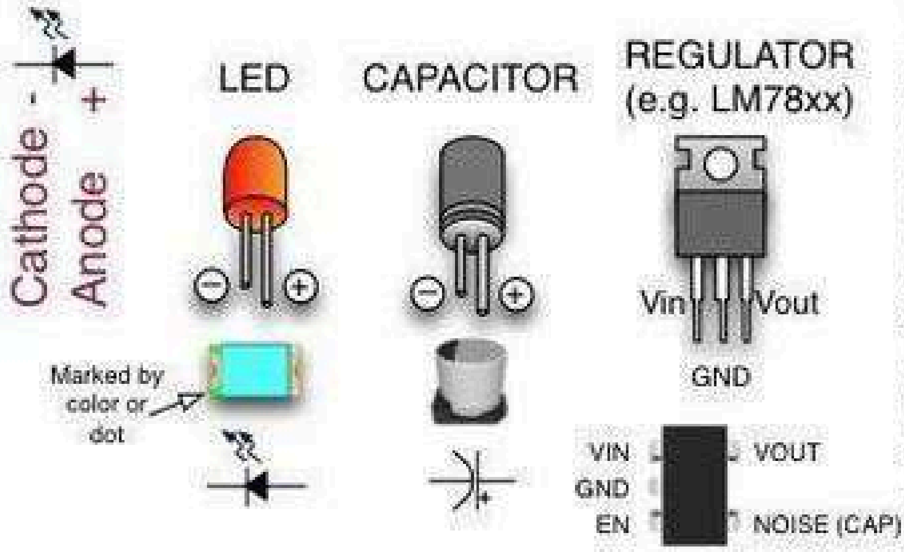




tantalum capacitors can
"go up in smoke"

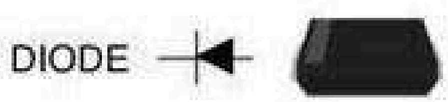
"bead" tantalum

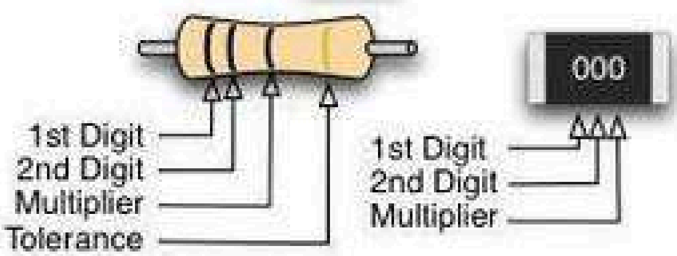
Electronics Reference Sheet v1.1b



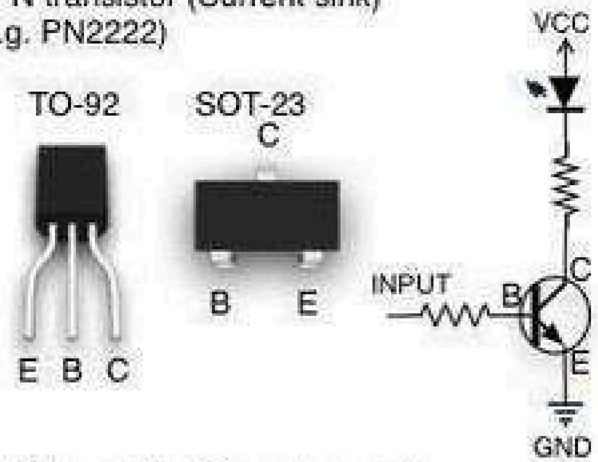
Resistor

	Digit	Multiplier	Tolerance
Silver	-	0.01	±10%
Gold	-	0.1	±5%
Black	0	1	-
Brown	1	10	±1%
Red	2	100	±2%
Orange	3	1k	-
Yellow	4	10k	-
Green	5	100k	±0.5%
Blue	6	1M	±0.25%
Violet	7	10M	±0.1%
Gray	8	-	-
White	9	-	-

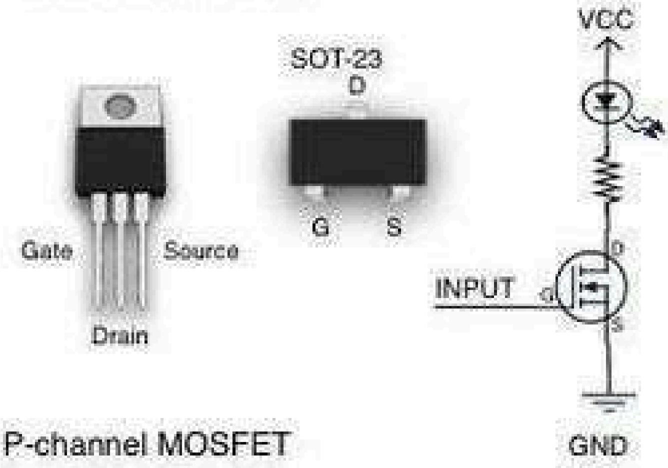




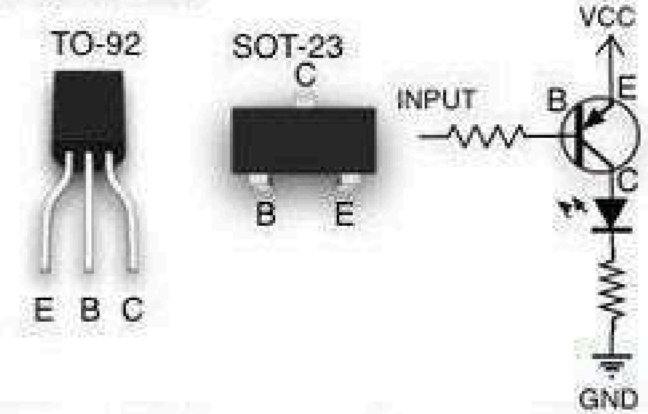
NPN transistor (Current sink)
(e.g. PN2222)



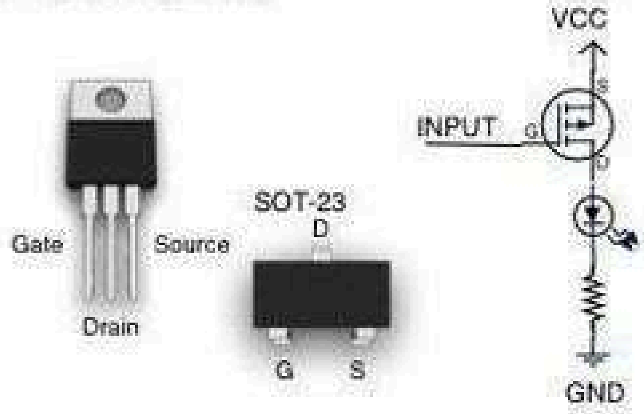
N-channel MOSFET



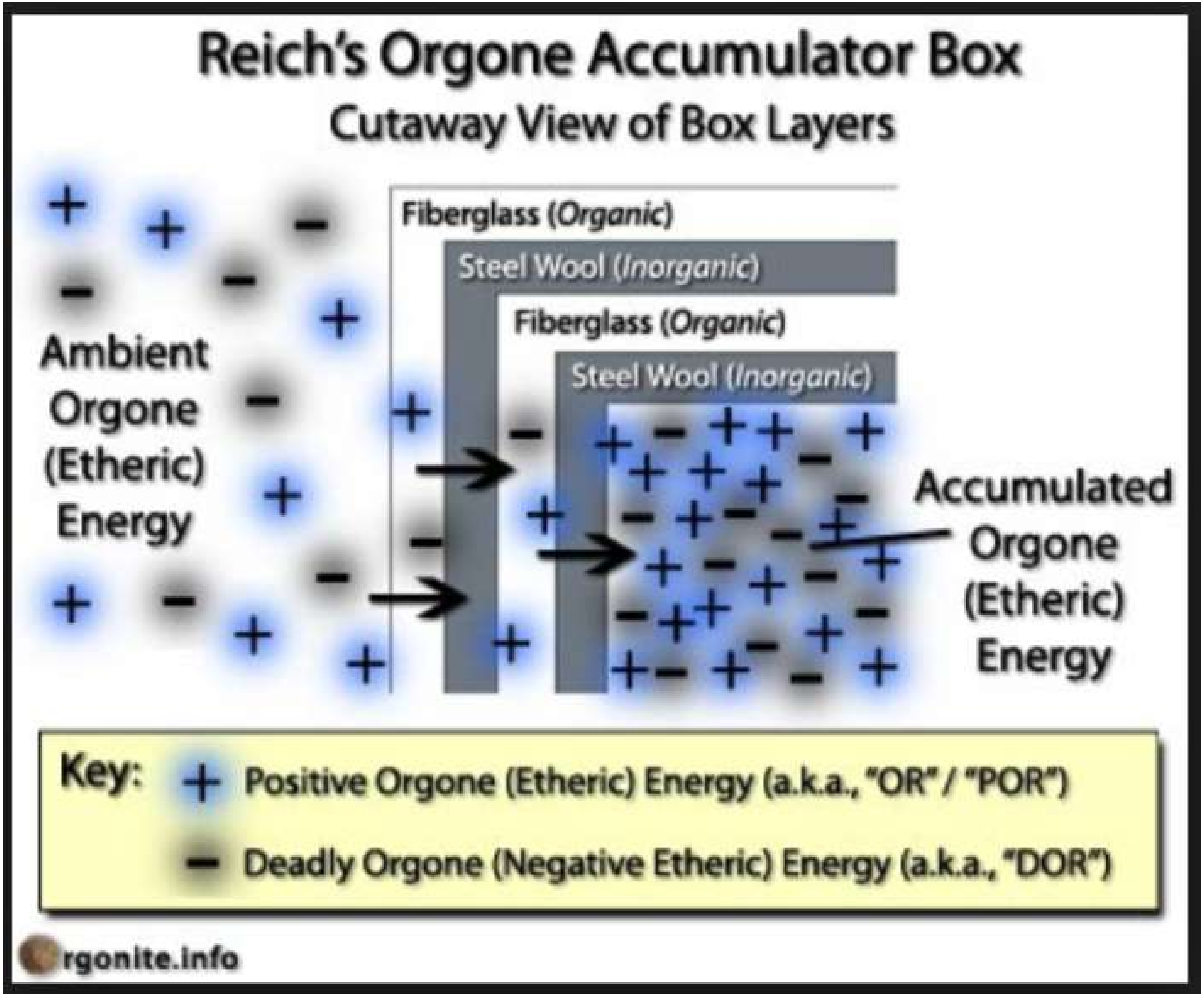
PNP transistor (Current source)
(e.g. PN2907)



P-channel MOSFET



* Please note that some components may have a different pinout than the one showed above, you should always check the data sheet before using a new component.


Reich's Orgone Accumulator Box
Cutaway View of Box Layers
Fiberglass (Organic)
Steel Wool (Inorganic)
Fiberglass (Organic)
Steel Wool (Inorganic)
Ambient Orgone (Etheric) Energy
Accumulated Orgone (Etheric) Energy
Key:
+ Positive Orgone (Etheric) Energy (a.k.a., "OR" / "POR")
− Deadly Orgone (Negative Etheric) Energy (a.k.a., "DOR")
rgonite.info

How to build a Don Croft ORGONITE CLOUD BUSTER

Refer to (Part 1 - 2) How to Make an Orgonite CloudBuster:
http://www.youtube.com/watch?v=cCn1DO2Rj6k

Materials List:

Wear safety gear as necessary
- respirator, gloves when pouring resin.
- gloves & goggles when cutting wood - with a respirator if cutting MDF etc.

4 x 10' lengths of copper (or other) pipe (cut 3 lengths in half, and one length into six 1' pieces)

6 pipe endcaps and 6 pipe connectors

2 gallon bucket (polypropylene if possible)

10 double terminated quartz (6 of these must fit into garden hose for insertion into base of pipes)

6 pieces of garden hose (3/4" - 1" long)

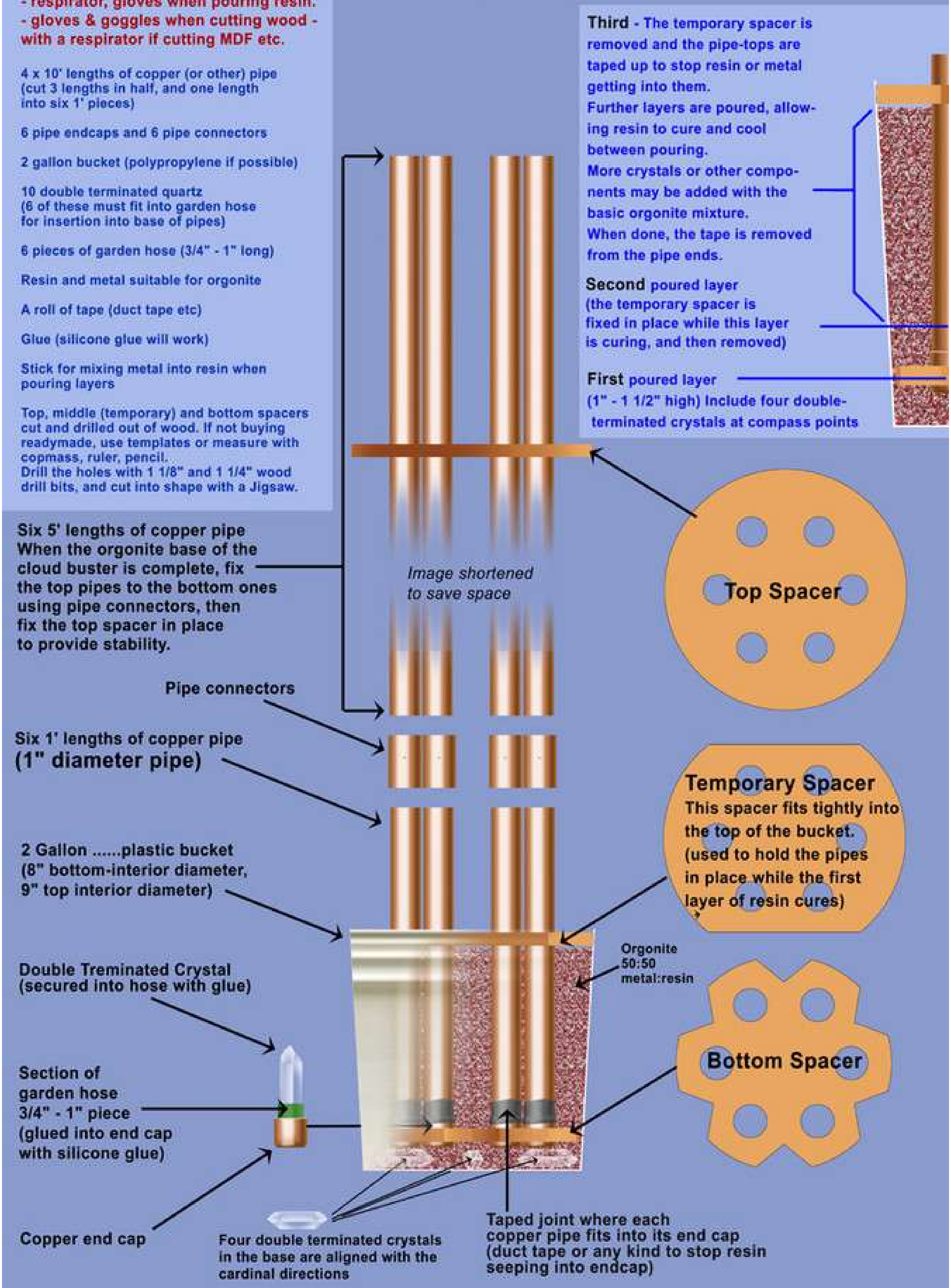
Resin and metal suitable for orgonite

A roll of tape (duct tape etc)

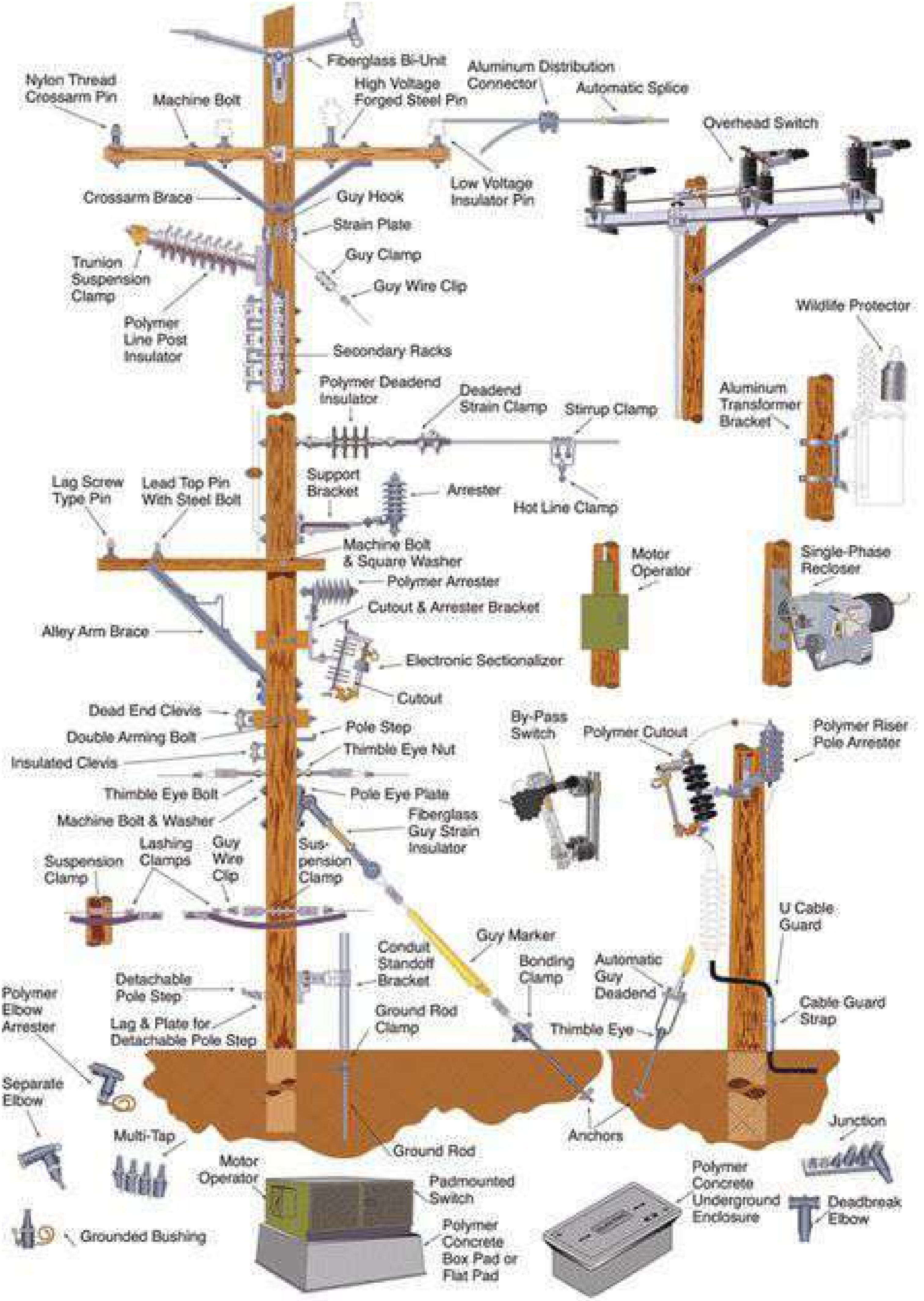
Glue (silicone glue will work)

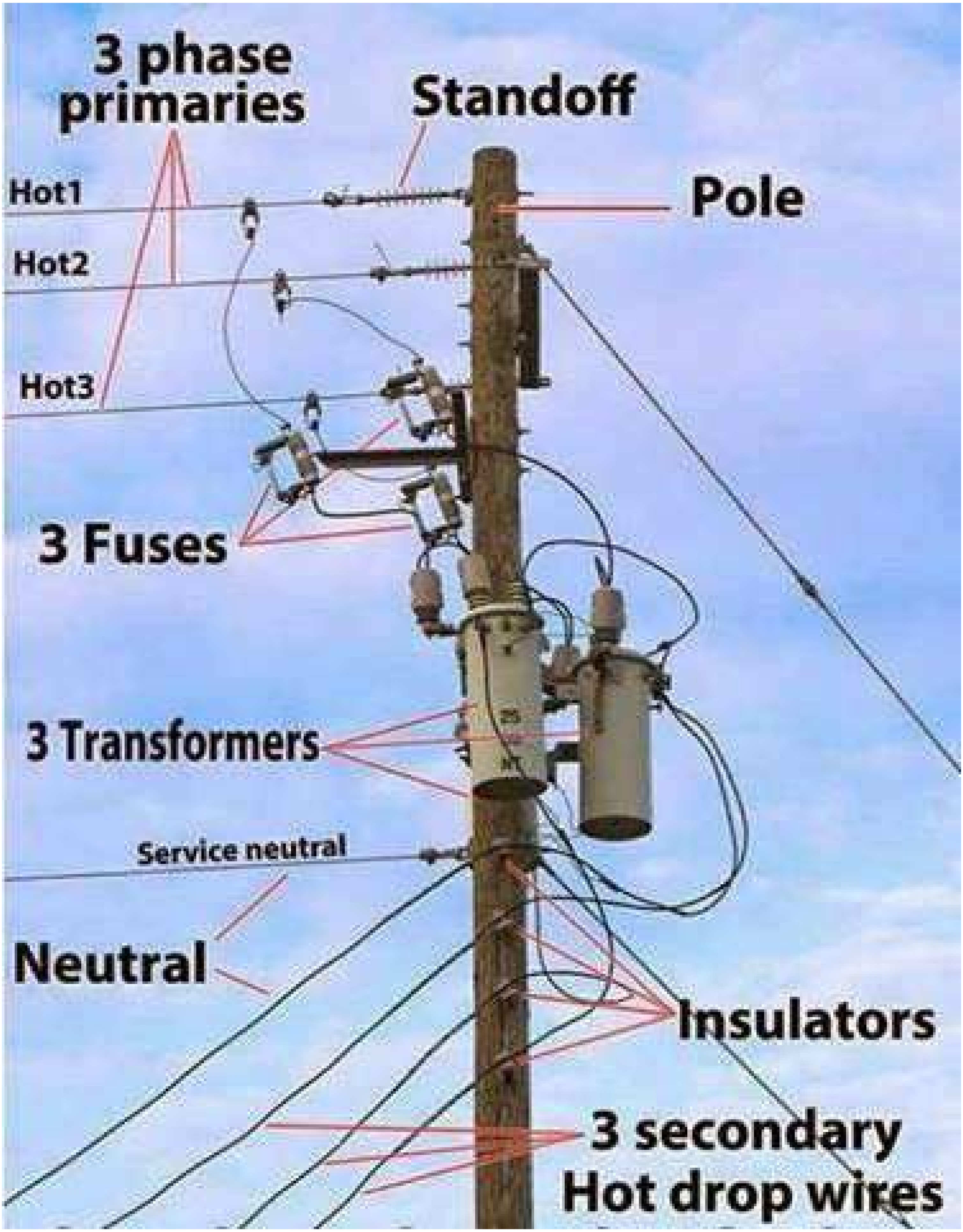
Stick for mixing metal into resin when pouring layers

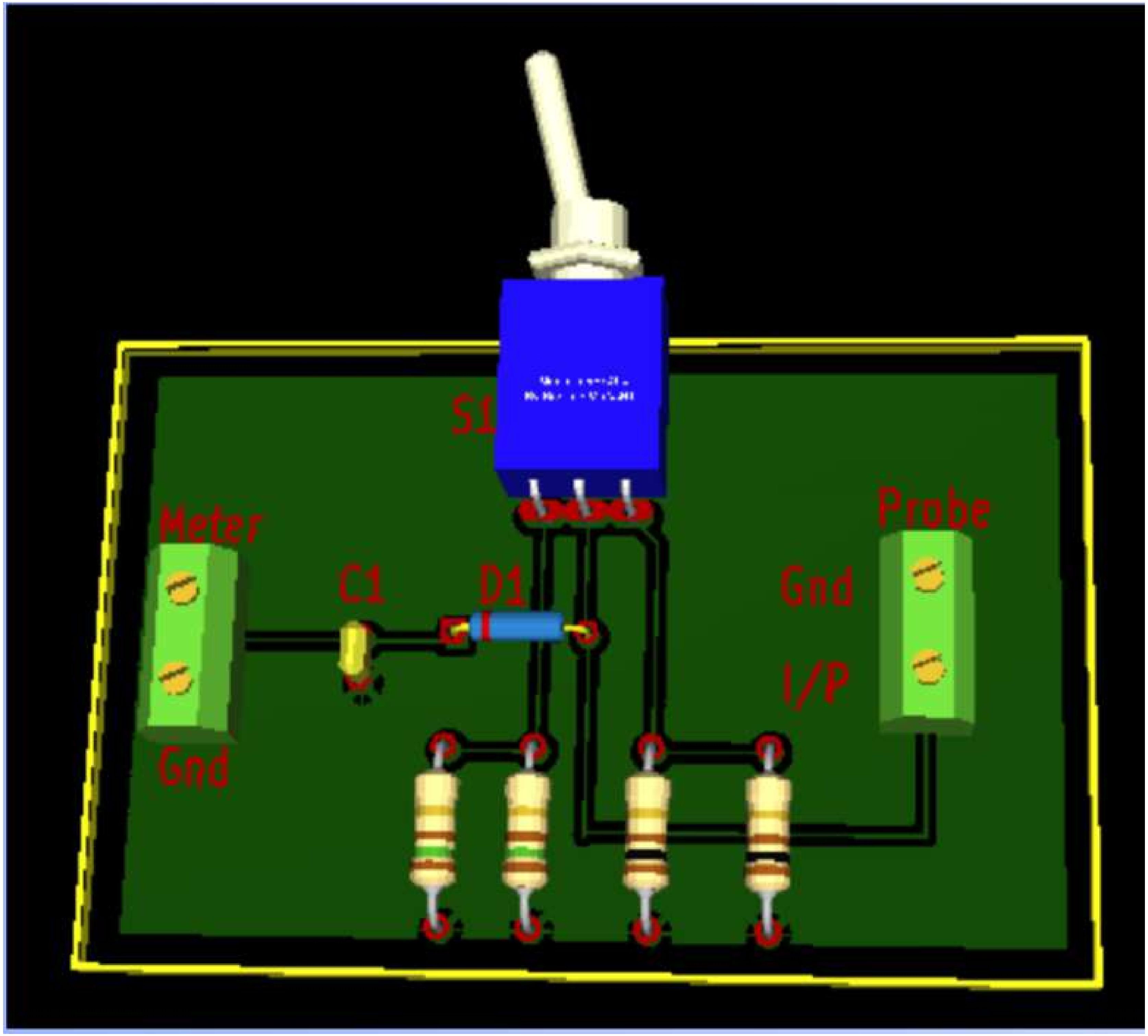
Top, middle (temporary) and bottom spacers cut and drilled out of wood. If not buying readymade, use templates or measure with copmass, ruler, pencil.
Drill the holes with 1 1/8" and 1 1/4" wood drill bits, and cut into shape with a Jigsaw.

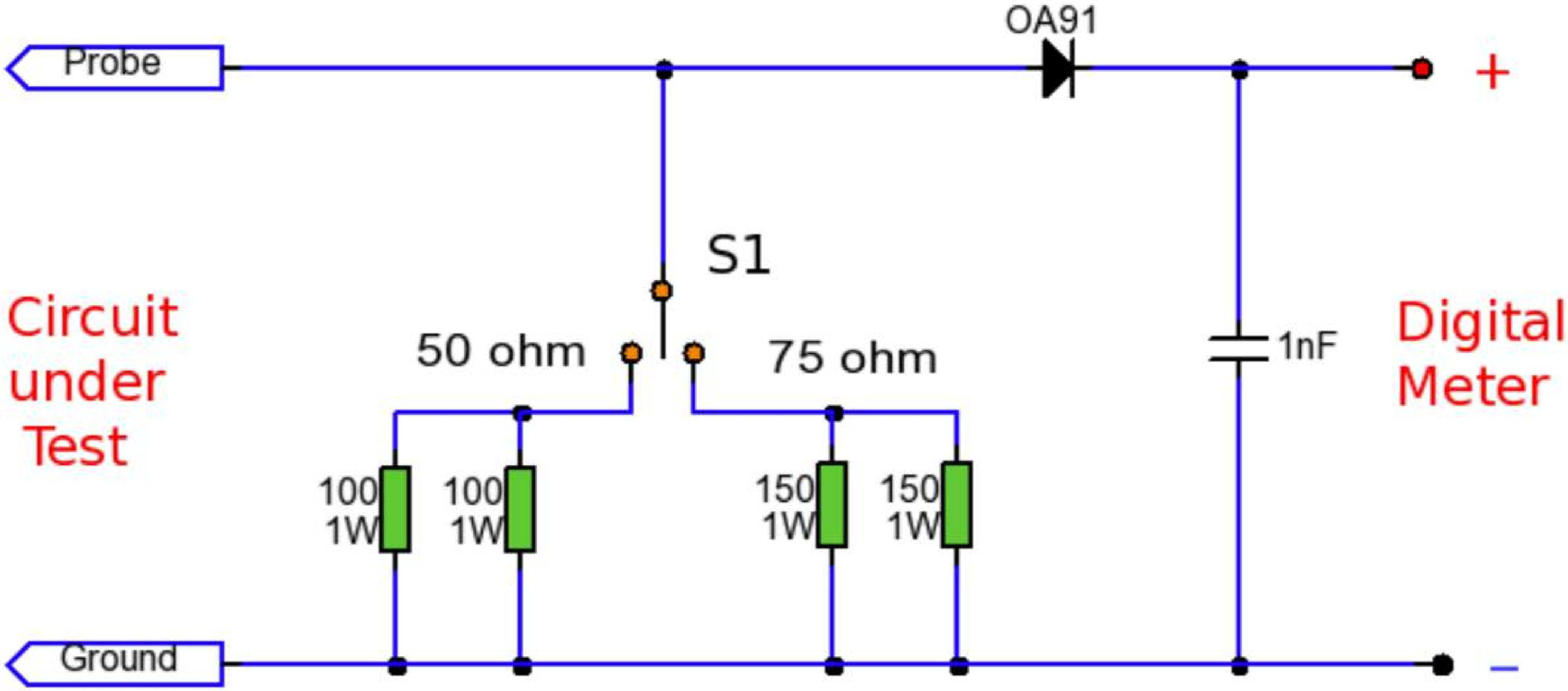



BOAT
BOAT
GOOP

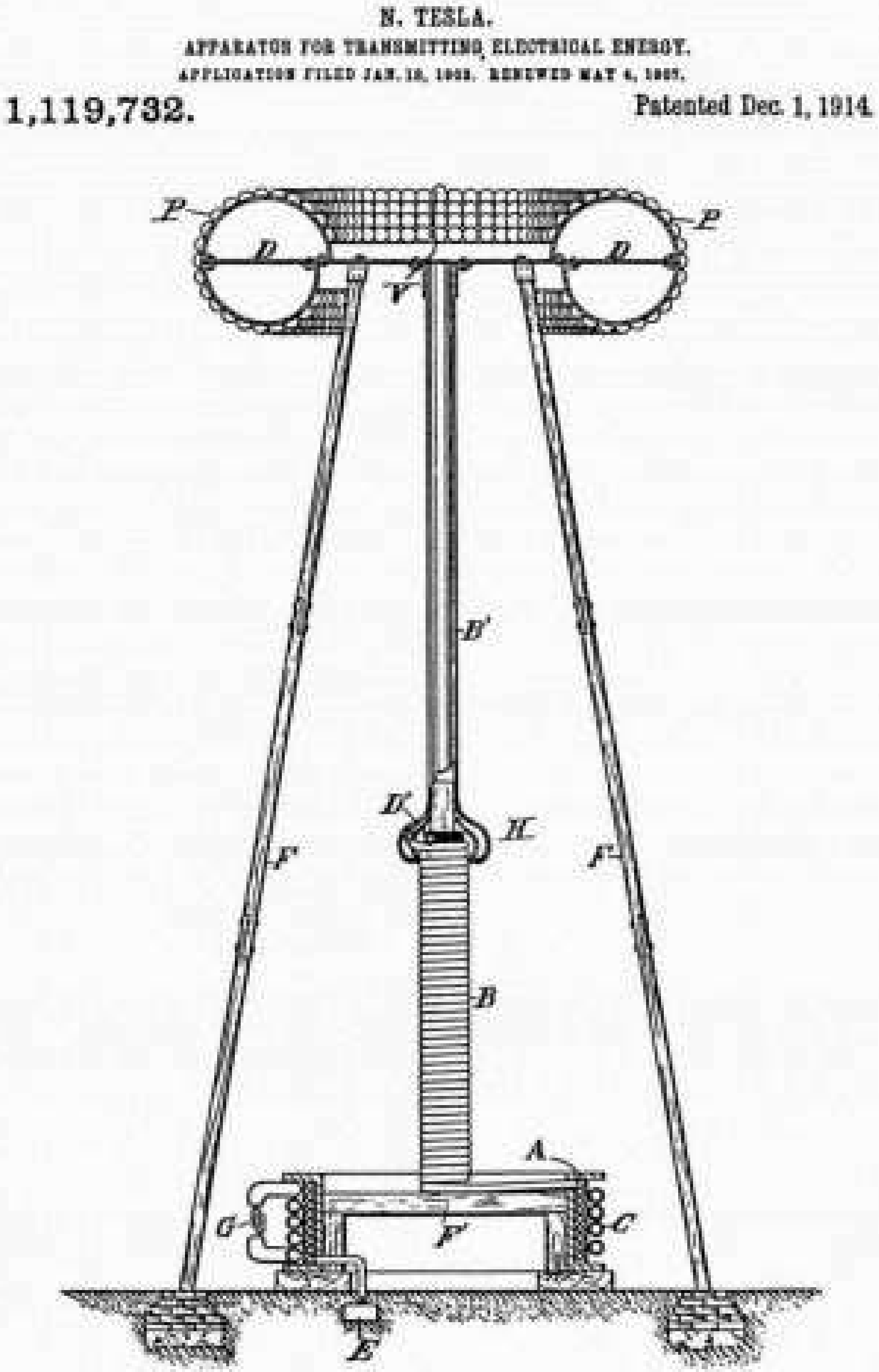

Fiberglass Bi-Unit
Aluminum Distribution Connector
Automatic Splice
Nylon Thread Crossarm Pin
Machine Bolt
High Voltage Forged Steel Pin
Overhead Switch
Low Voltage Insulator Pin
Crossarm Brace
Guy Hook
Strain Plate
Trunion Suspension Clamp
Guy Clamp
Guy Wire Clip
Polymer Line Post Insulator
Wildlife Protector
Secondary Racks
Polymer Deadend Insulator
Deadend Strain Clamp
Stirrup Clamp
Aluminum Transformer Bracket
Support Bracket
Arrester
Hot Line Clamp
Lag Screw Type Pin
Lead Top Pin With Steel Bolt
Machine Bolt & Square Washer
Motor Operator
Single-Phase Recloser
Polymer Arrester
Cutout & Arrester Bracket
Alley Arm Brace
Electronic Sectionalizer
Cutout
Dead End Clevis
By-Pass Switch
Polymer Cutout
Polymer Riser Pole Arrester
Double Arming Bolt
Pole Step
Insulated Clevis
Thimble Eye Nut
Thimble Eye Bolt
Pole Eye Plate
Machine Bolt & Washer
Fiberglass Guy Strain Insulator
Suspension Clamp
Lashing Clamps
Guy Wire Clip
Sus-pension Clamp
U Cable Guard
Guy Marker
Conduit Standoff Bracket
Bonding Clamp
Automatic Guy Deadend
Detachable Pole Step
Polymer Elbow Arrester
Cable Guard Strap
Lag & Plate for Detachable Pole Step
Ground Rod Clamp
Thimble Eye
Separate Elbow
Anchors
Junction
Multi-Tap
Ground Rod
Motor Operator
Padmounted Switch
Polymer Concrete Underground Enclosure
Deadbreak Elbow
Grounded Bushing
Polymer Concrete Box Pad or Flat Pad

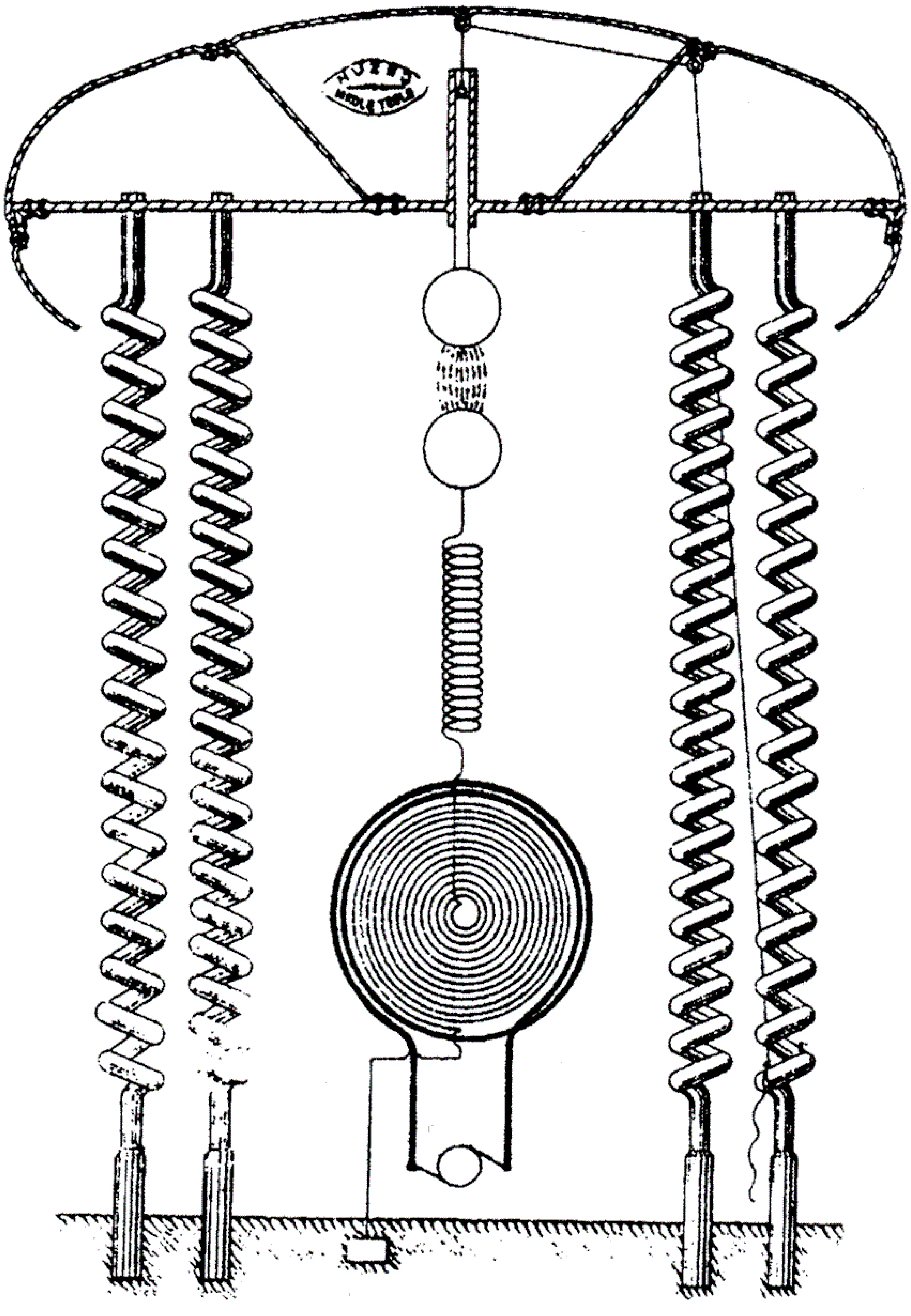

3 phase primaries
Standoff
Hot1
Pole
Hot2
Hot3
3 Fuses
3 Transformers
Service neutral
Neutral
Insulators
3 secondary Hot drop wires


S1
Meter
C1
D1
Probe
Gnd
I/P
Gnd



Probe
OA91
+
S1
Circuit under Test
50 ohm
75 ohm
1nF
Digital Meter
100 1W
100 1W
150 1W
150 1W
Ground
–


N. TESLA.
APPARATUS FOR TRANSMITTING ELECTRICAL ENERGY.
1,119,732.
Patented Dec. 1, 1914.
P
D
V
E'
H
F
B
A
G
C
E



New York, Aug. 30th, 1901
46 & 48 East Houston Str.

Mr. Stanford White
160 Fifth Ave.
New York City

My Dear Stanford:
Many thanks for your suggestions. I am writing to Mr. Powell today. Perhaps he will be able to clear the land altogether.

I want you to understand that I went to the American Bridge Company simply because of my anxiety to have the work pushed through as fast as practicable. I am only too glad to follow your advice and beg you to consider yourself absolutely free in your choice and arrangements regarding this work.

Yours very sincerely,
N. Tesla

New York, Sep. 12th, 1901
46 & 48 East Houston Str.

Babcock & Wilcox Co.
85 Liberty Street
New York City

Gentlemen:
Under enclosure I forward sketch showing your two boilers as they will be placed in my building and their position relative to and exact distance from the chimney. The scale is ½ inch to a foot.

You will greatly oblige me by furnishing the drawings of the flues leading to the chimney and the position of the breech, as the builder cannot proceed without this information.

Yours very truly,
Encl.

Anyone familiar with the Wardenclyffe Tower knows it to have been a colossal structure. Yet, few realize that it was supposed to have been even larger. Although the exact figures are not revealed, Tesla must have drastically underestimated the cost of building his structure as is evidenced by the following response to White.

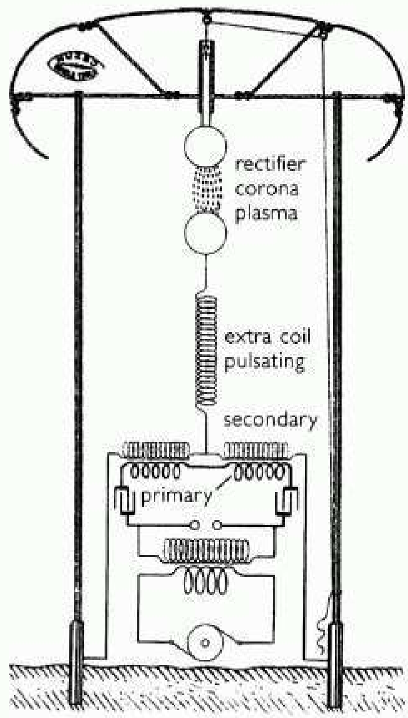


Fig. 5 Oscillating statically charged terminal.

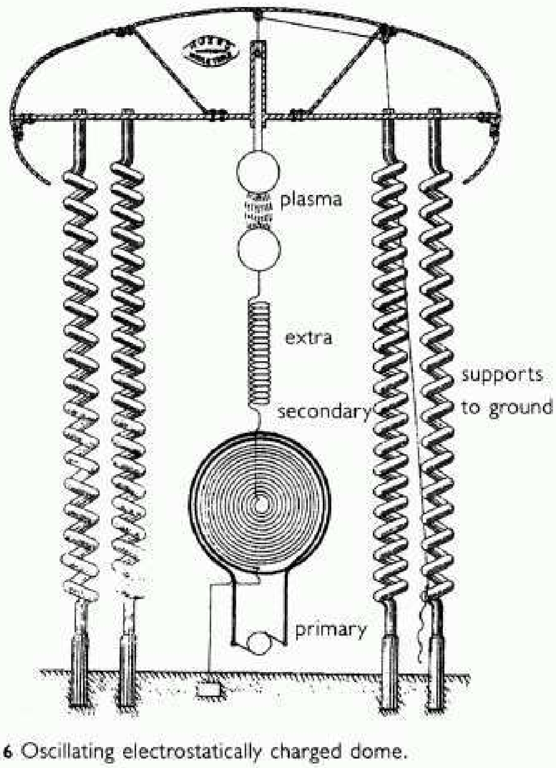


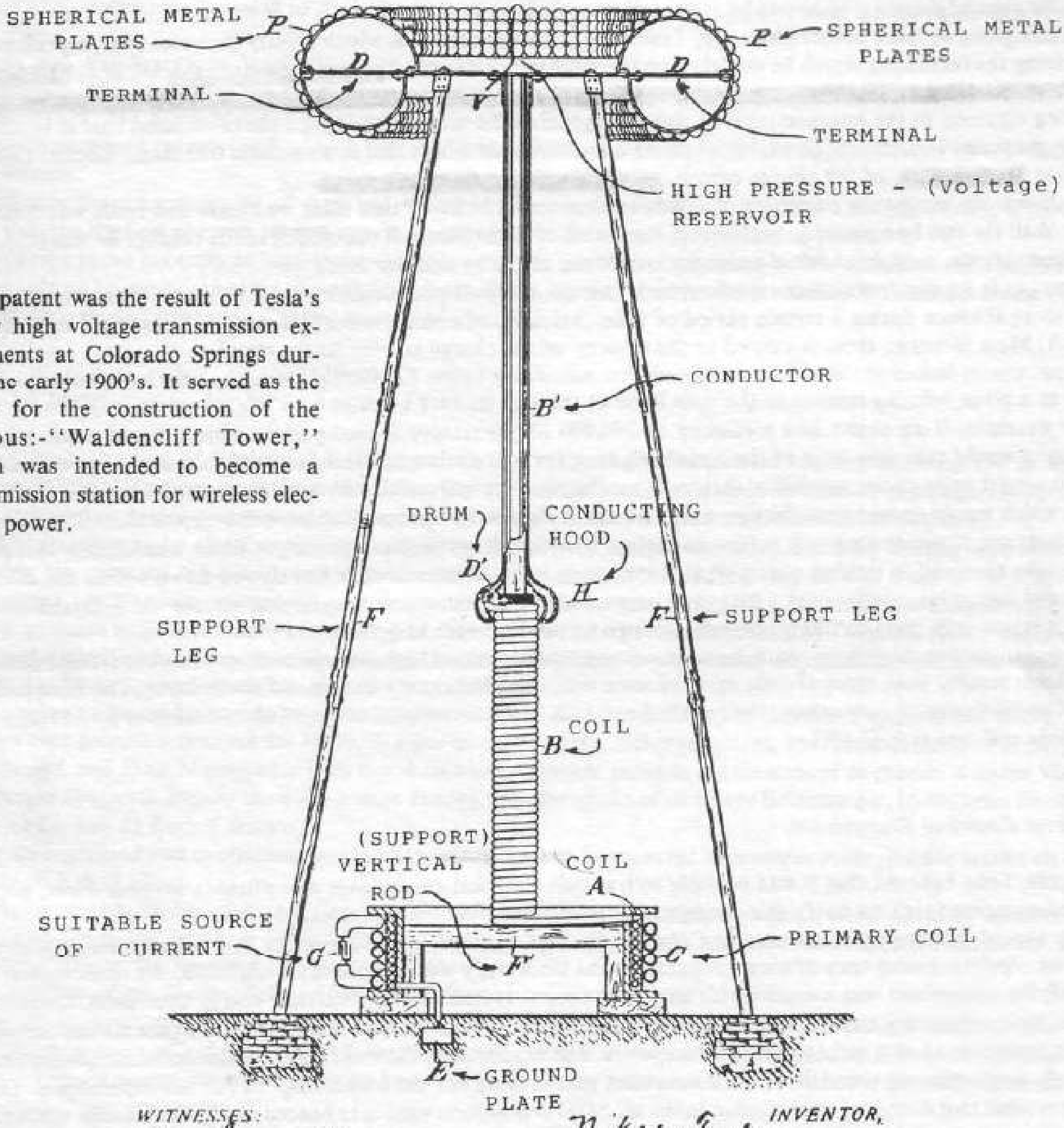
Fig. 6 Oscillating electrostatically charged dome.

N. TESLA

APPARATUS FOR TRANSMITTING ELECTRICAL ENERGY.
APPLICATION FILED JAN. 18, 1902. RENEWED MAY 4, 1907.

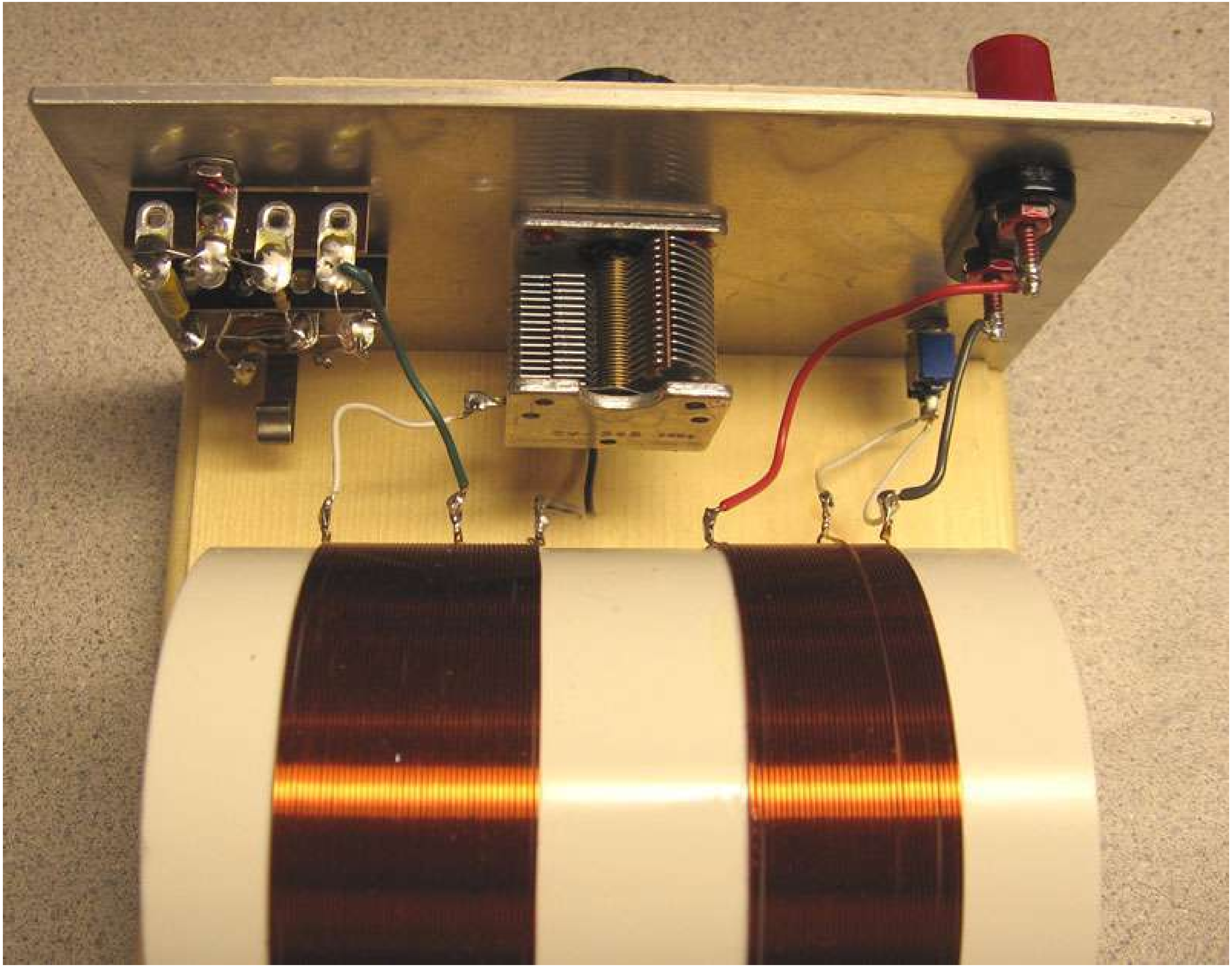
1,119,732. Patented Dec. 1, 1914.

This patent was the result of Tesla's many high voltage transmission experiments at Colorado Springs during the early 1900's. It served as the basis for the construction of the famous:-"Waldencliff Tower," which was intended to become a transmission station for wireless electrical power.



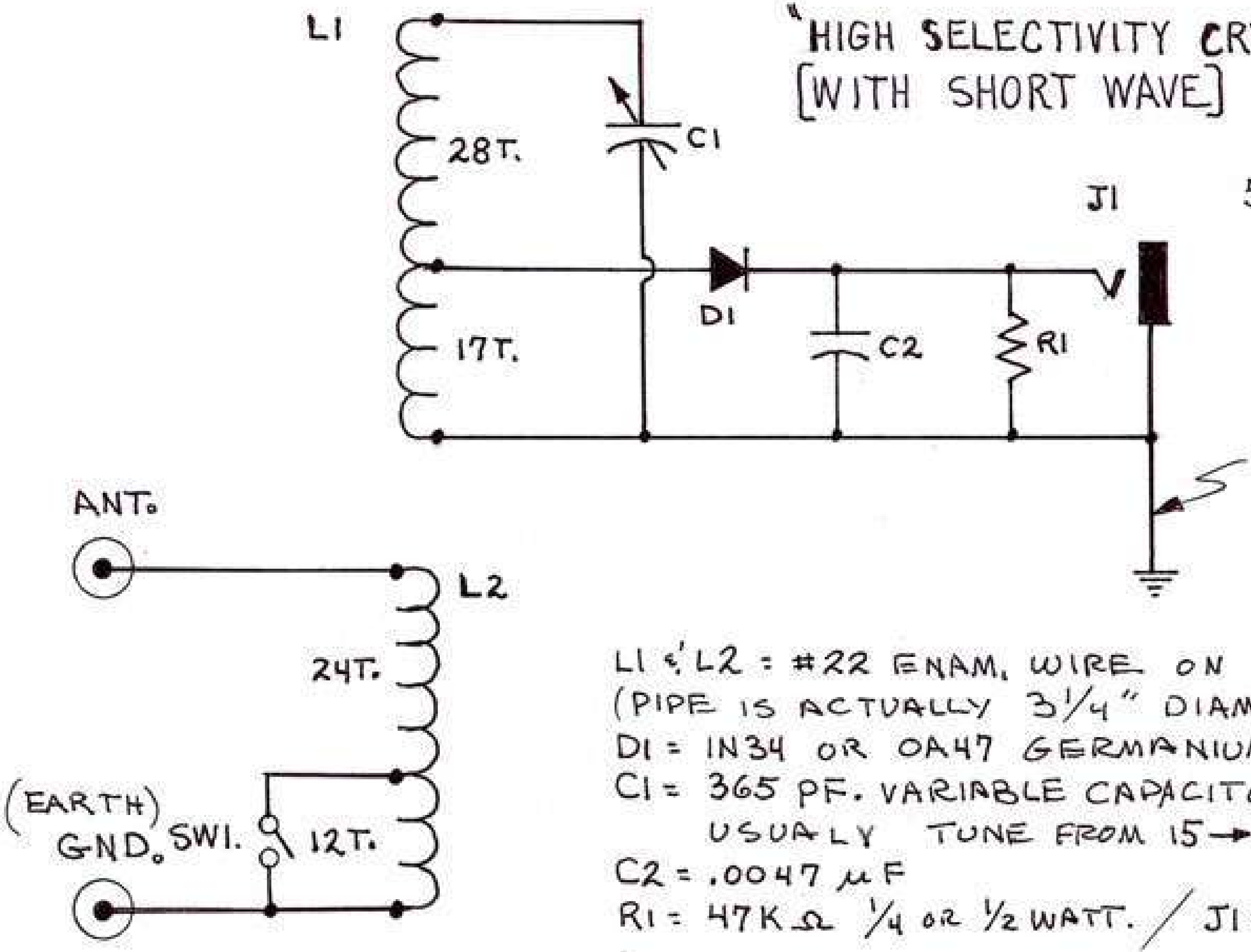
WITNESSES:
M. Lawson Dyer
Benjamin Miller.

INVENTOR,
Nikola Tesla,
BY Kerr, Page & Cooper,
his *ATTORNEYS.*



"HIGH SELECTIVITY CRYSTAL RADIO"
[WITH SHORT WAVE] RGK 2007

570 KHZ → 2.5 MHZ



GROUND TO FRONT ALUMINUM PANEL

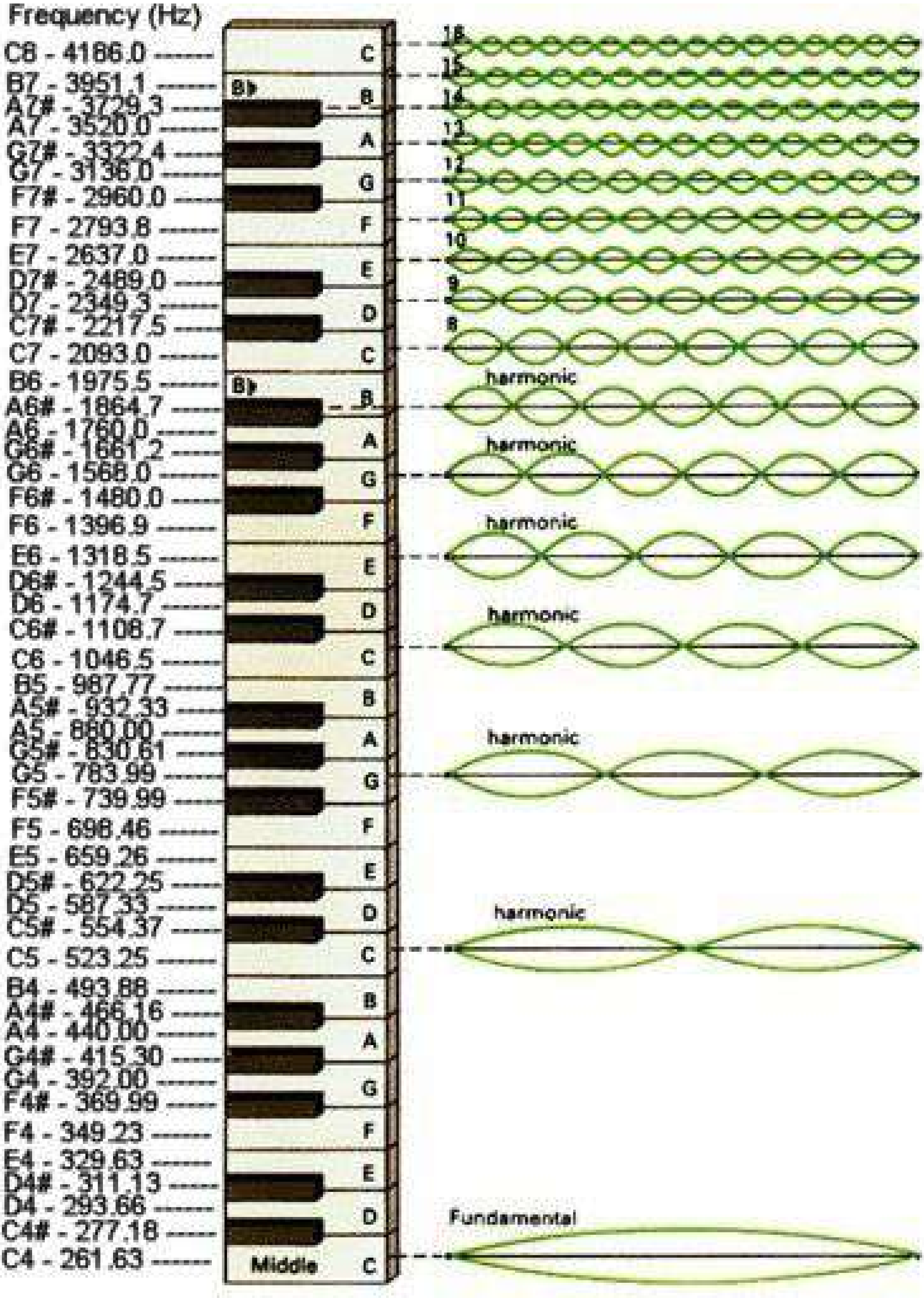
L1 & L2 = #22 ENAM. WIRE ON 3" PVC PIPE.
(PIPE IS ACTUALLY 3¼" DIAM")
D1 = 1N34 OR OA47 GERMANIUM DIODE
C1 = 365 PF. VARIABLE CAPACITOR / THESE
USUALY TUNE FROM 15 → 400 PF.
C2 = .0047 µF
R1 = 47K Ω ¼ OR ½ WATT. / J1 = ¼" AUDIO JACK

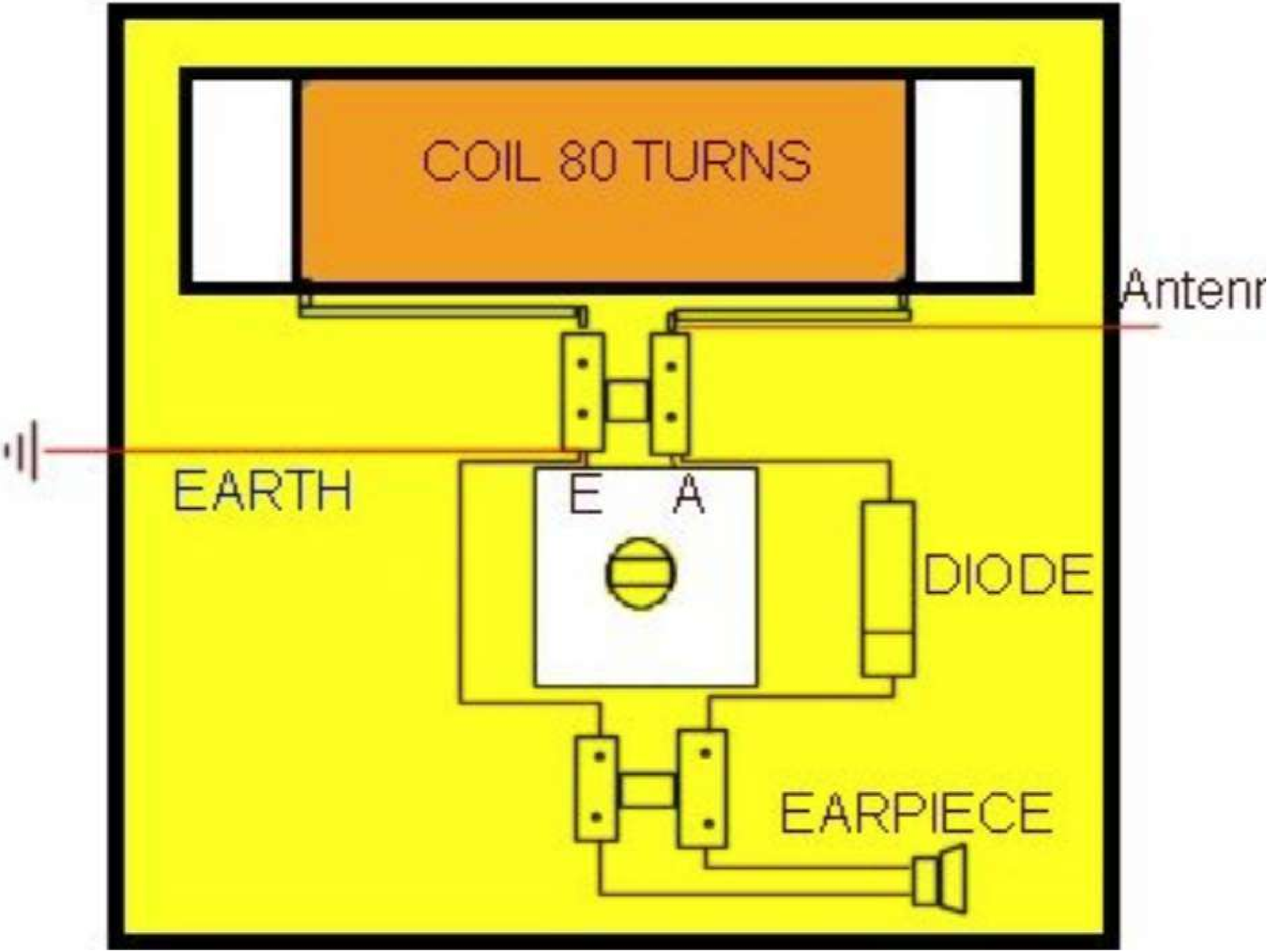
[L1/L2 NOTES: L1 = 45 TURNS TOTAL & L2 = 36 TURNS TOTAL. THE SPACE BETWEEN L1 & L2 IS 1 1/16".]

SW1 = SP.S.T. SWITCH / FOR ANTENNA MATCHING

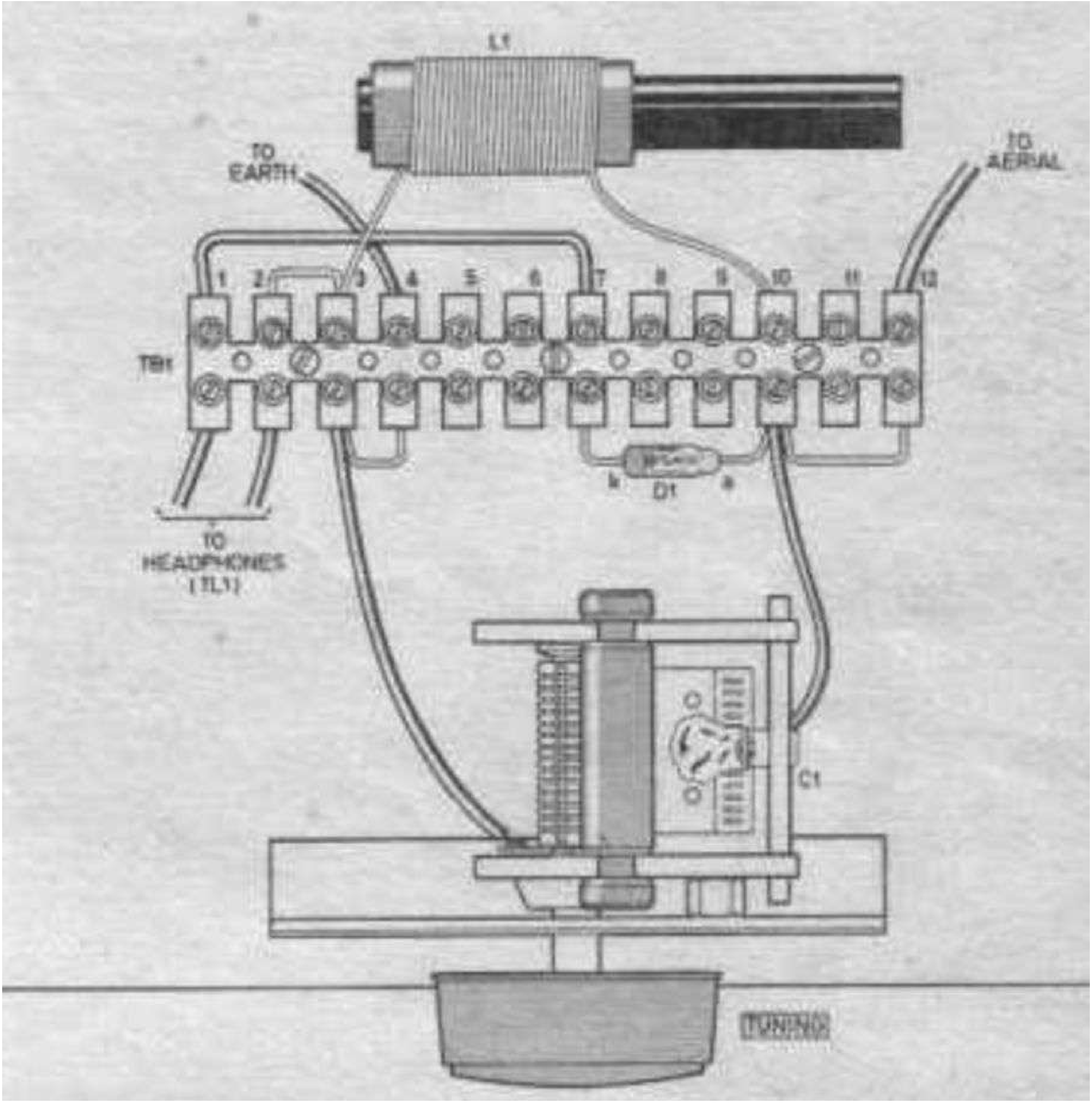

630V 0245


EXTENDED DAY CREED
WATCH YOUR THOUGHTS THEY BECOME YOUR WORDS,
WATCH YOUR WORDS THEY BECOME YOUR FEELINGS,
WATCH YOUR FEELINGS THEY BECOME YOUR ACTIONS,
WATCH YOUR ACTIONS THEY BECOME YOUR HABITS,
WATCH YOUR HABITS THEY BECOME YOUR LIFESTYLE,
WATCH YOUR LIFESTYLE IT CONTROLS YOUR DESTINY.
05/07/2013 04:26 PM


Frequency (Hz)
C8 - 4186.0
B7 - 3951.1
A7# - 3729.3
A7 - 3520.0
G7# - 3322.4
G7 - 3136.0
F7# - 2960.0
F7 - 2793.8
E7 - 2637.0
D7# - 2489.0
D7 - 2349.3
C7# - 2217.5
C7 - 2093.0
B6 - 1975.5
A6# - 1864.7
A6 - 1760.0
G6# - 1661.2
G6 - 1568.0
F6# - 1480.0
F6 - 1396.9
E6 - 1318.5
D6# - 1244.5
D6 - 1174.7
C6# - 1108.7
C6 - 1046.5
B5 - 987.77
A5# - 932.33
A5 - 880.00
G5# - 830.61
G5 - 783.99
F5# - 739.99
F5 - 698.46
E5 - 659.26
D5# - 622.25
D5 - 587.33
C5# - 554.37
C5 - 523.25
B4 - 493.88
A4# - 466.16
A4 - 440.00
G4# - 415.30
G4 - 392.00
F4# - 369.99
F4 - 349.23
E4 - 329.63
D4# - 311.13
D4 - 293.66
C4# - 277.18
C4 - 261.63
B♭
B♭
Middle
C
B
A
G
F
E
D
C
B
A
G
F
E
D
C
B
A
G
F
E
D
C
16
15
14
13
12
11
10
9
8
harmonic
harmonic
harmonic
harmonic
harmonic
harmonic
Fundamental

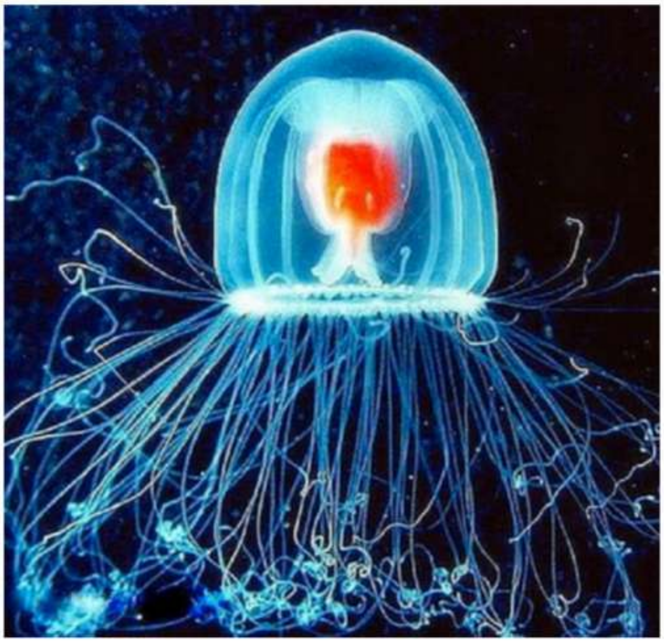


COIL 80 TURNS
Antenr
EARTH
E
A
DIODE
EARPIECE


L1
TO EARTH
TO AERIAL
1
2
3
4
5
6
7
8
9
10
11
12
TB1
k
D1
a
TO HEADPHONES (TL1)
C1
TUNING

4

The **immortal jellyfish** (*Turritopsis dohrnii*) is capable of biological immortality.



It's one of few known species capable of reverting completely to a sexually immature, colonial polyp stage after having reached sexual maturity as a solitary (free-floating) individual (called a medusa).

> Theoretically, this process can go on indefinitely, effectively rendering the jellyfish biologically immortal

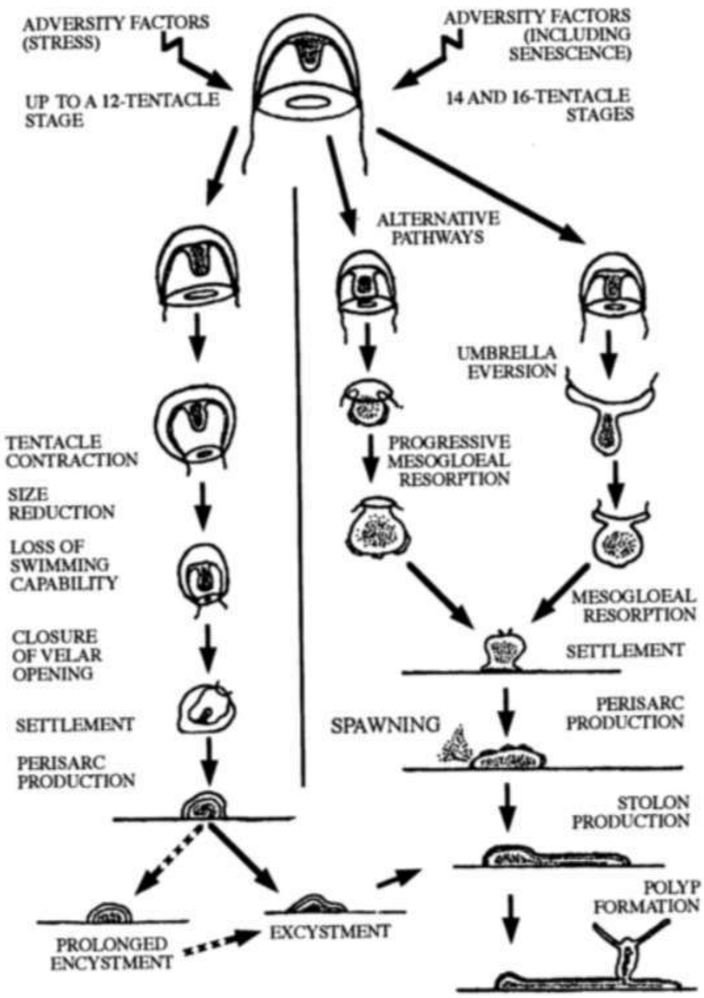
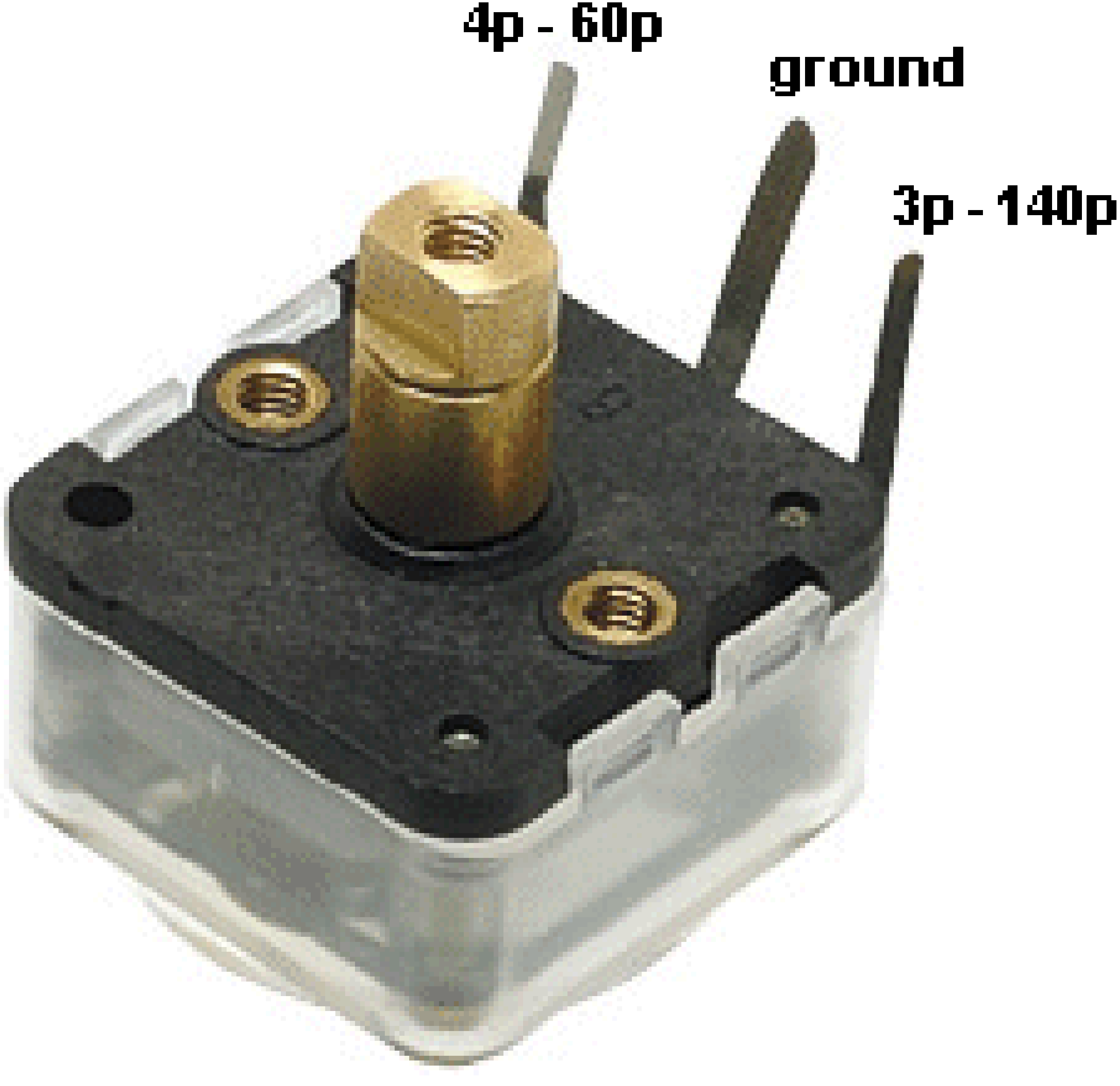


Figure 3. Pathways of transformation from medusa into polyp. Fate of stressed medusae up to 12-tentacle stage (left side), and alternative transformations of stressed or spawning medusae from a 14-tentacle or 16-tentacle stage (right side). The final product is always the polyp colony (bottom), directly or through a resting stage.


4p - 60p
ground
3p - 140p


© www.petervis.com
© Copyright Protec


eisco
Germanium Diode
A
K
1N60
Max. 50 V
CE

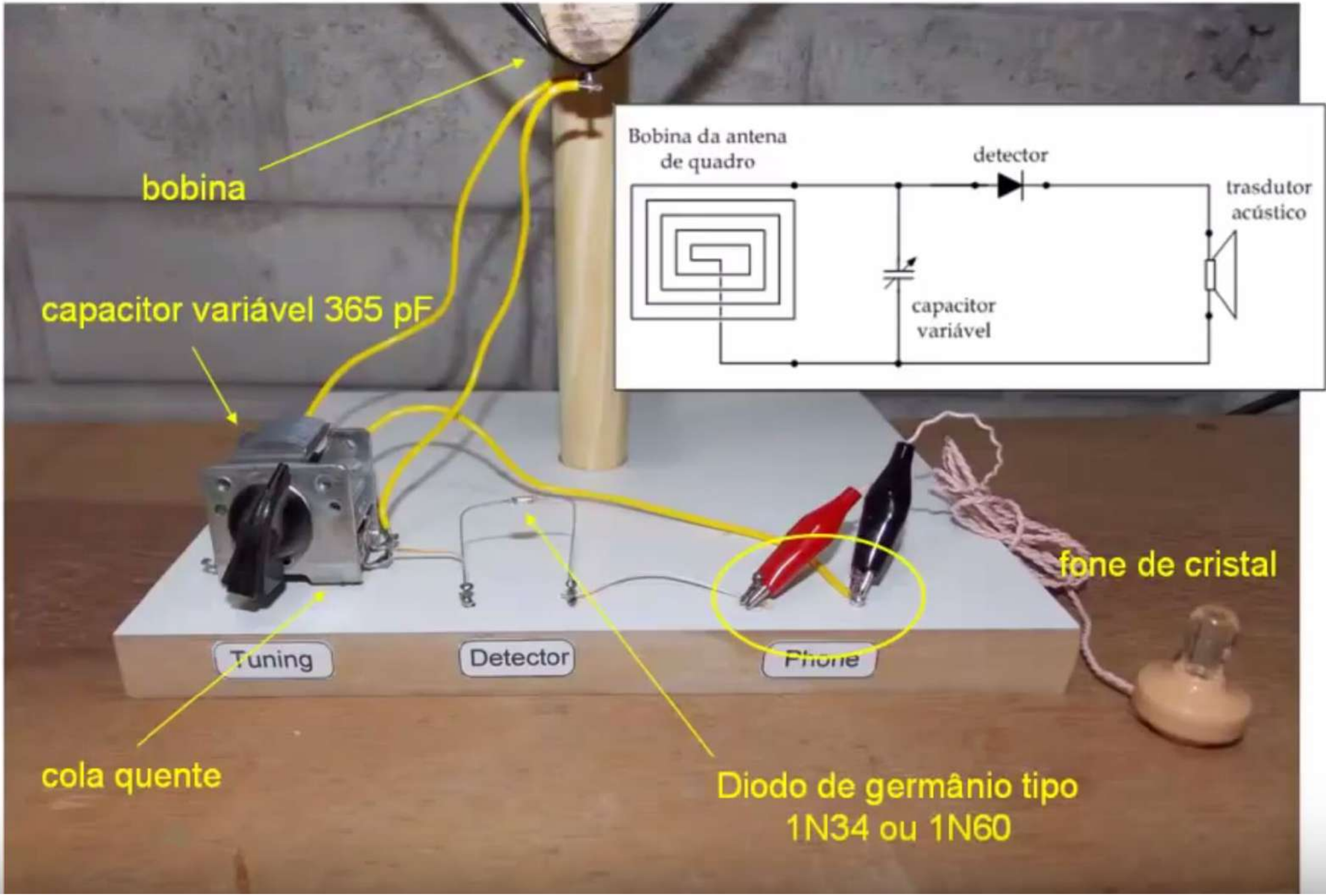

bobina
capacitor variável 365 pF
cola quente
Tuning
Detector
Phone
fone de cristal
Diodo de germânio tipo
1N34 ou 1N60
Bobina da antena
de quadro
detector
trasdutor
acústico
capacitor
variável

Figure 12. (**a**) Output power for a half-wave and full-wave CWVM, and (**b**) portable electronic calculator running with the AM energy harvester. Detected input signal in LC resonator is 1.5 V at 1 MHz.

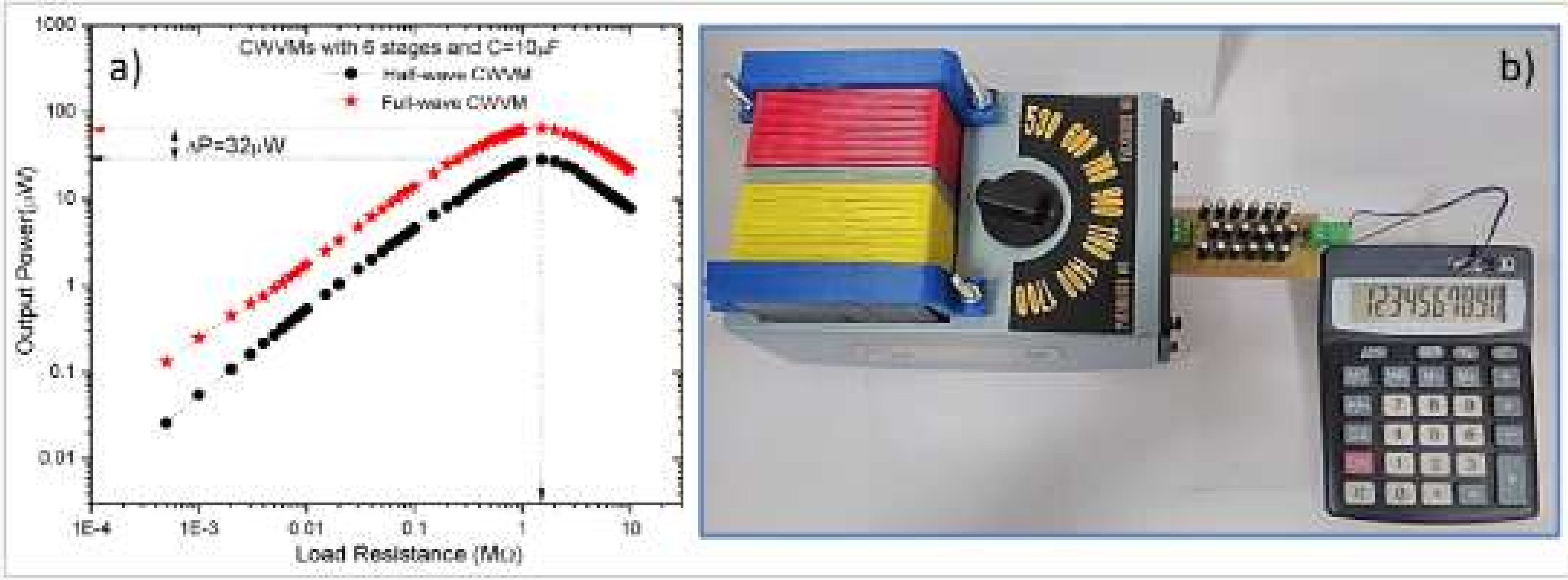
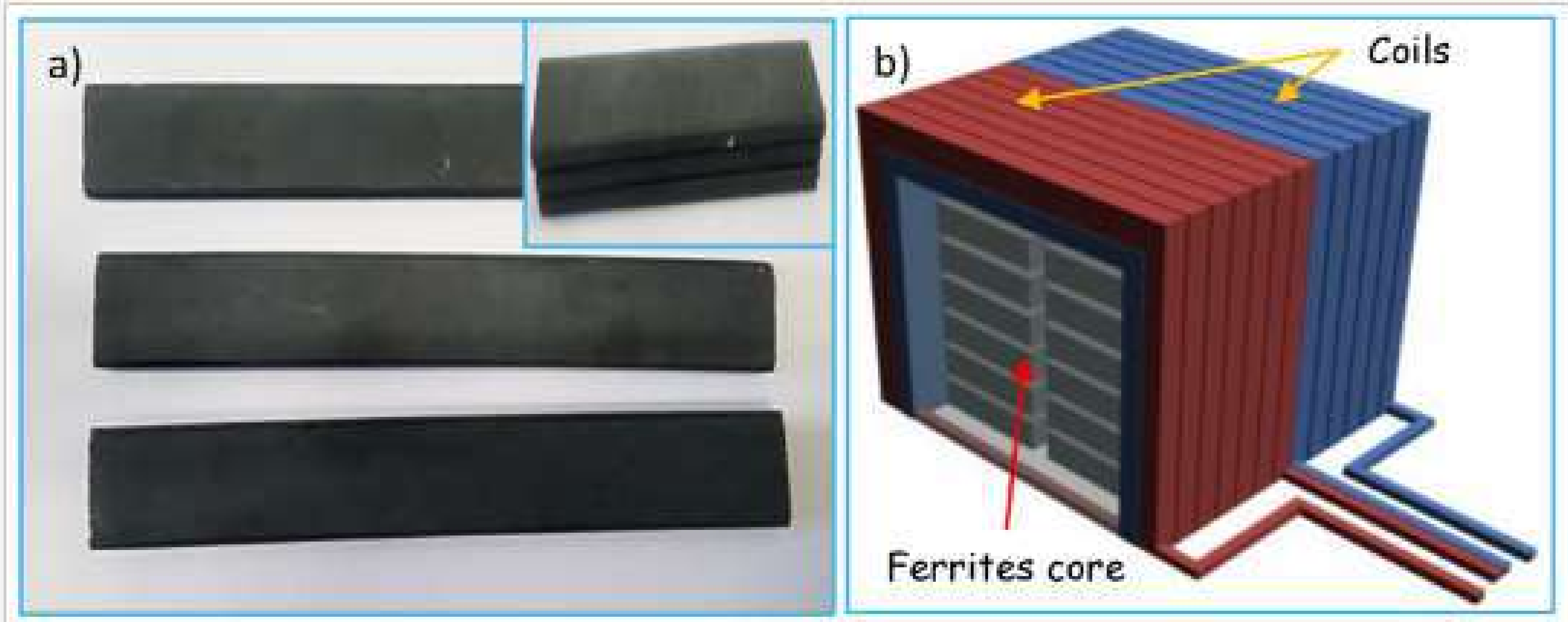
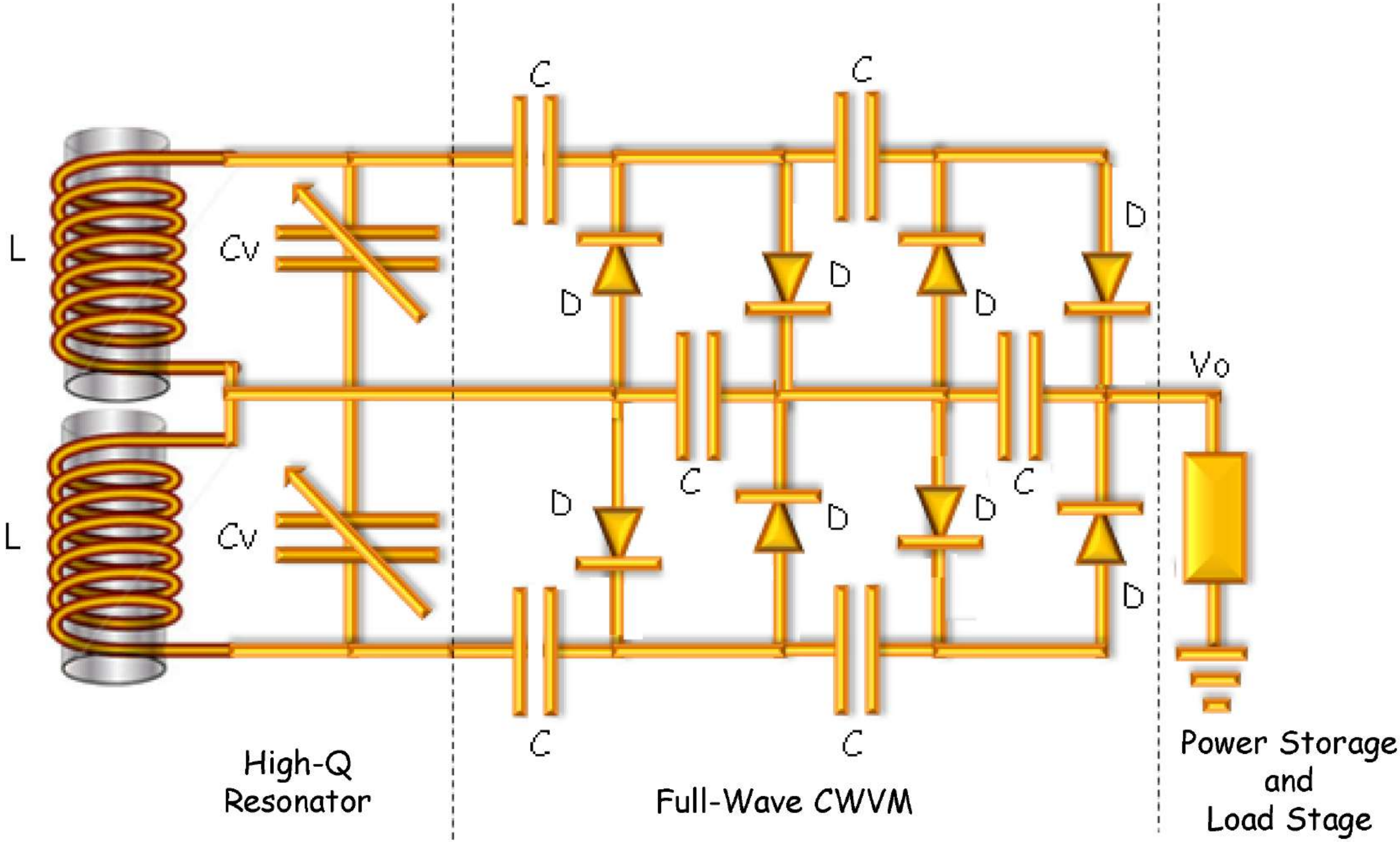


Figure 4. (**a**) Ferrite cores used for antenna coil, inset shows the stacked cores, and (**b**) scheme of the composed ferrite core.





L
Cv
L
Cv
C
C
D
D
D
D
Vo
C
C
D
D
D
D
C
C
High-Q Resonator
Full-Wave CWVM
Power Storage and Load Stage

Figure 5. (**a**) circuit for a six-stage conventional CWVM, and (**b**) circuit for a six-stage full wave-CWVM. Here, Cs stands for the series capacitances.

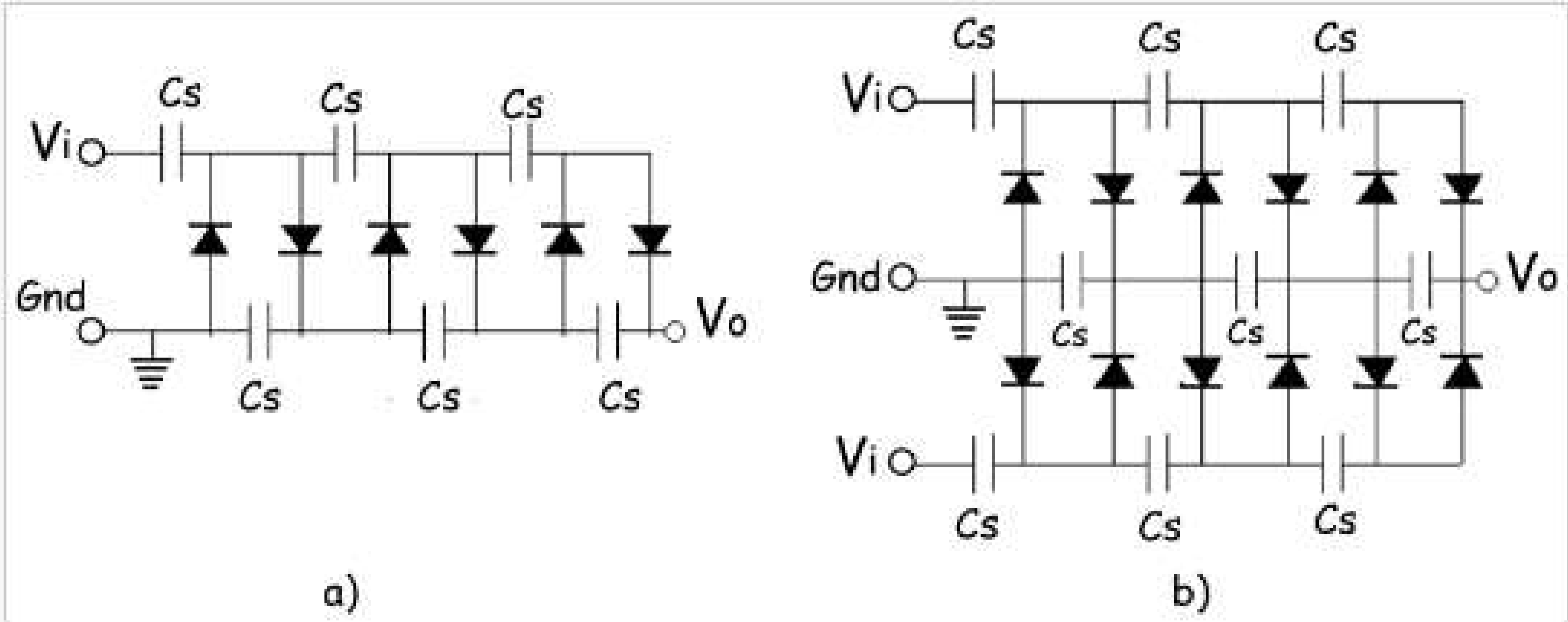


Figure 6. Pictorial image of the AM-RF energy harvesting system.

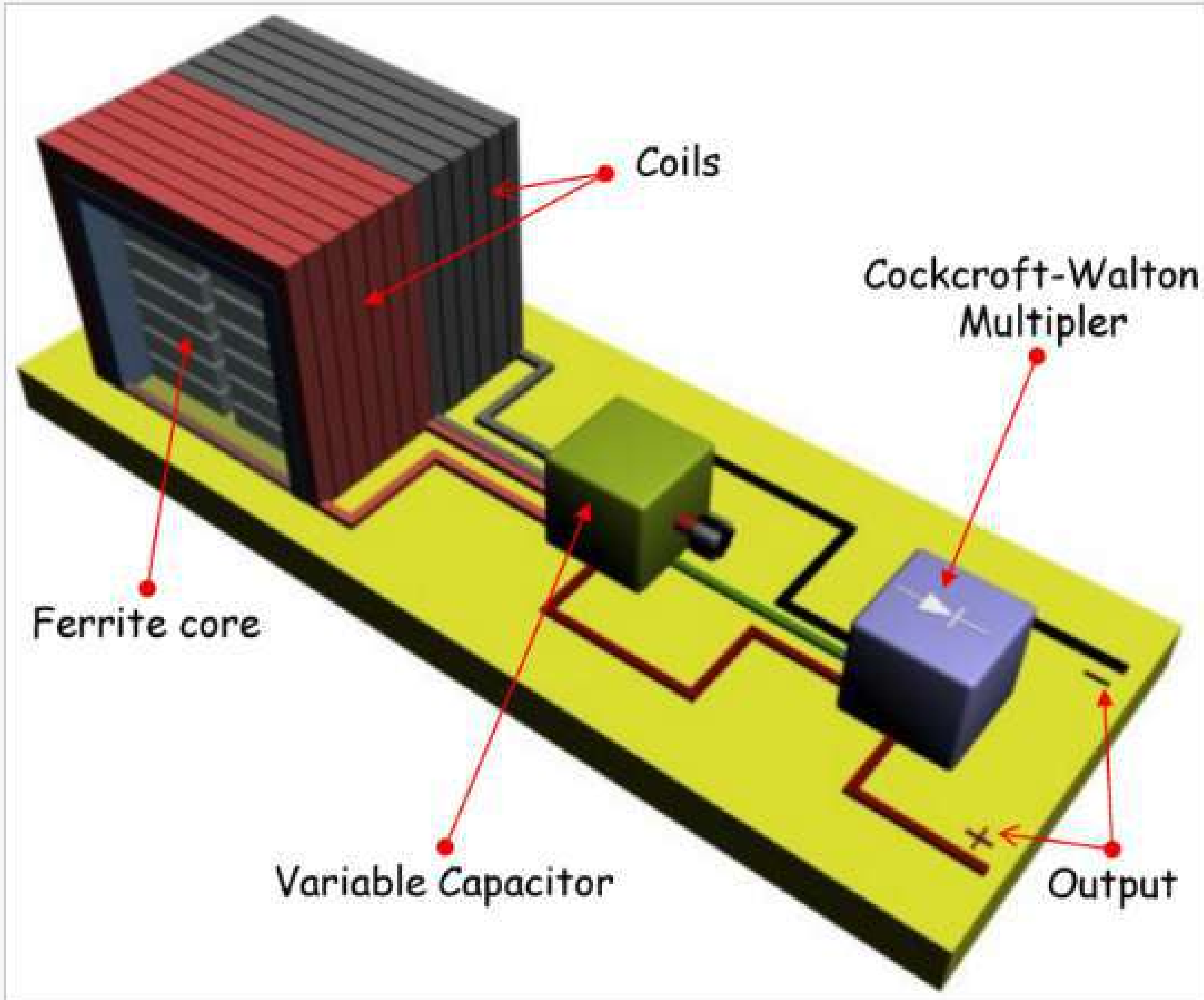
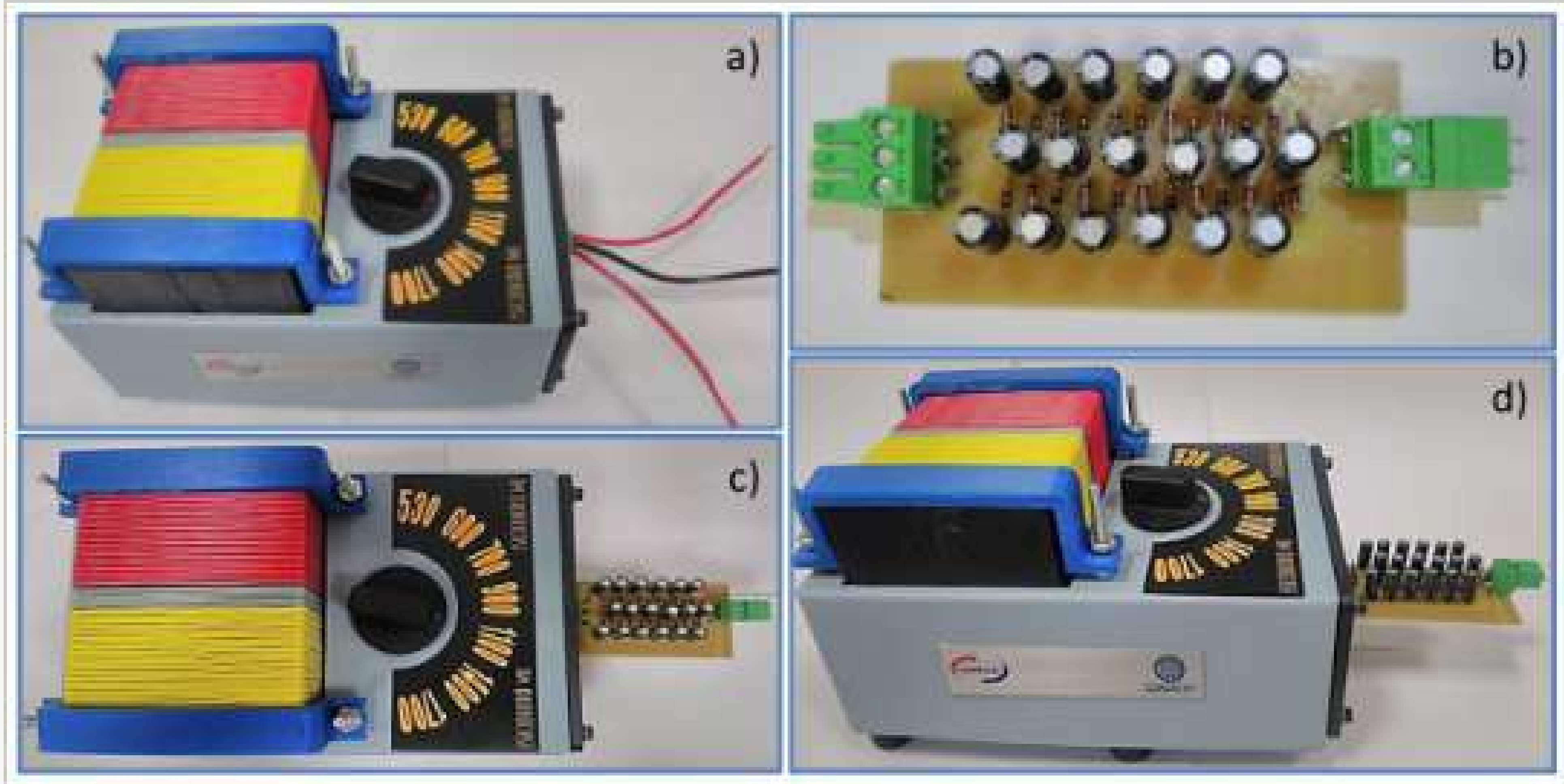
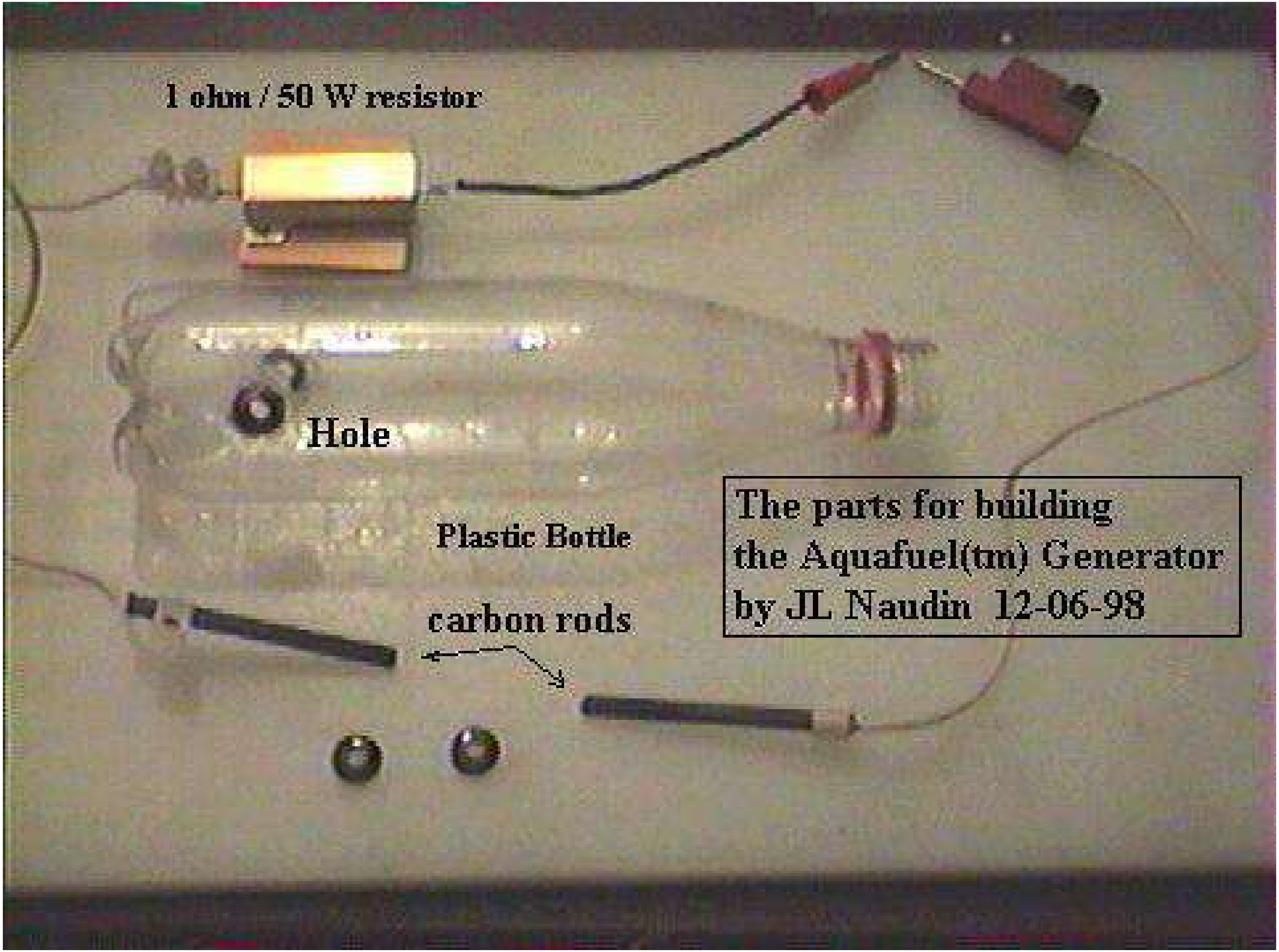
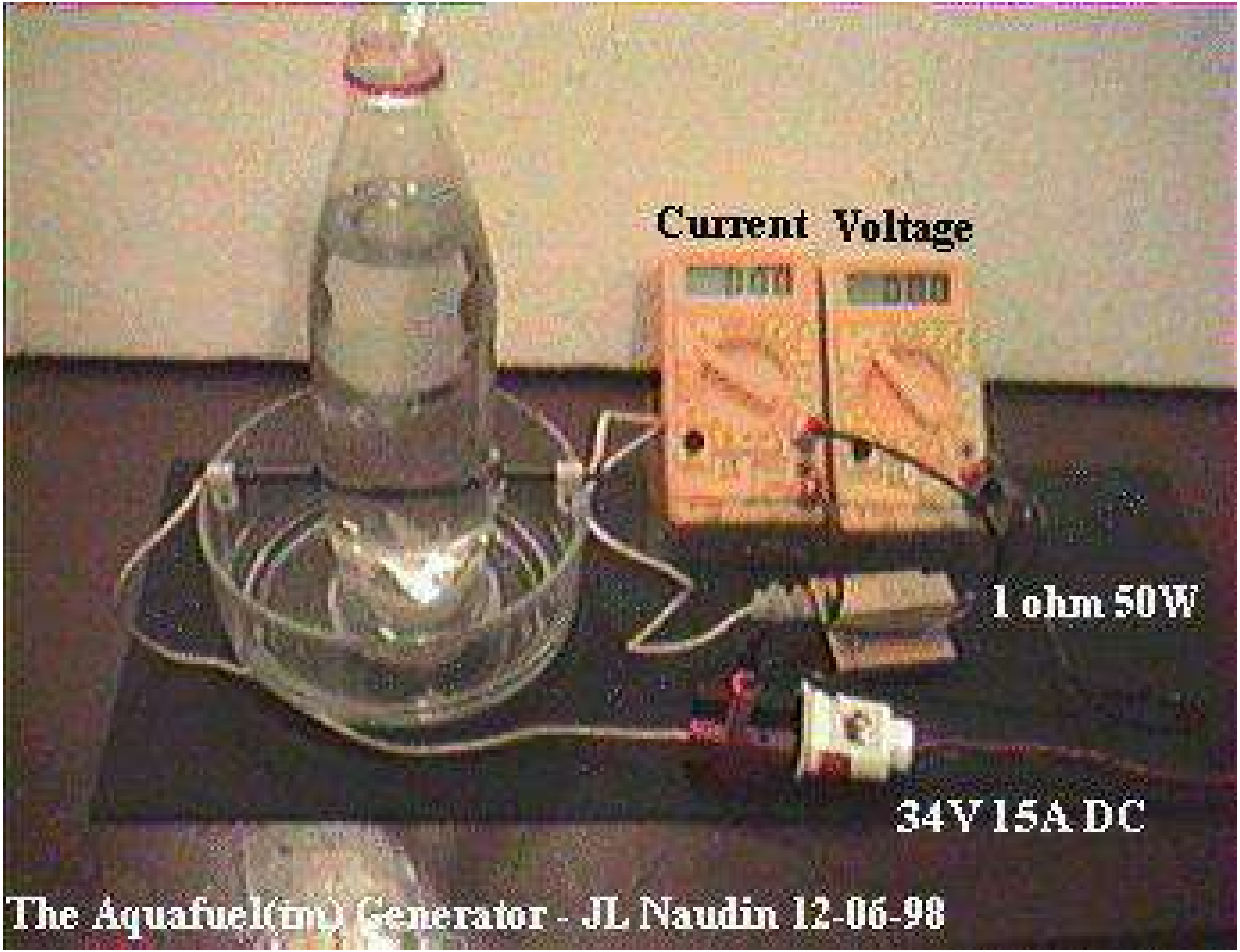
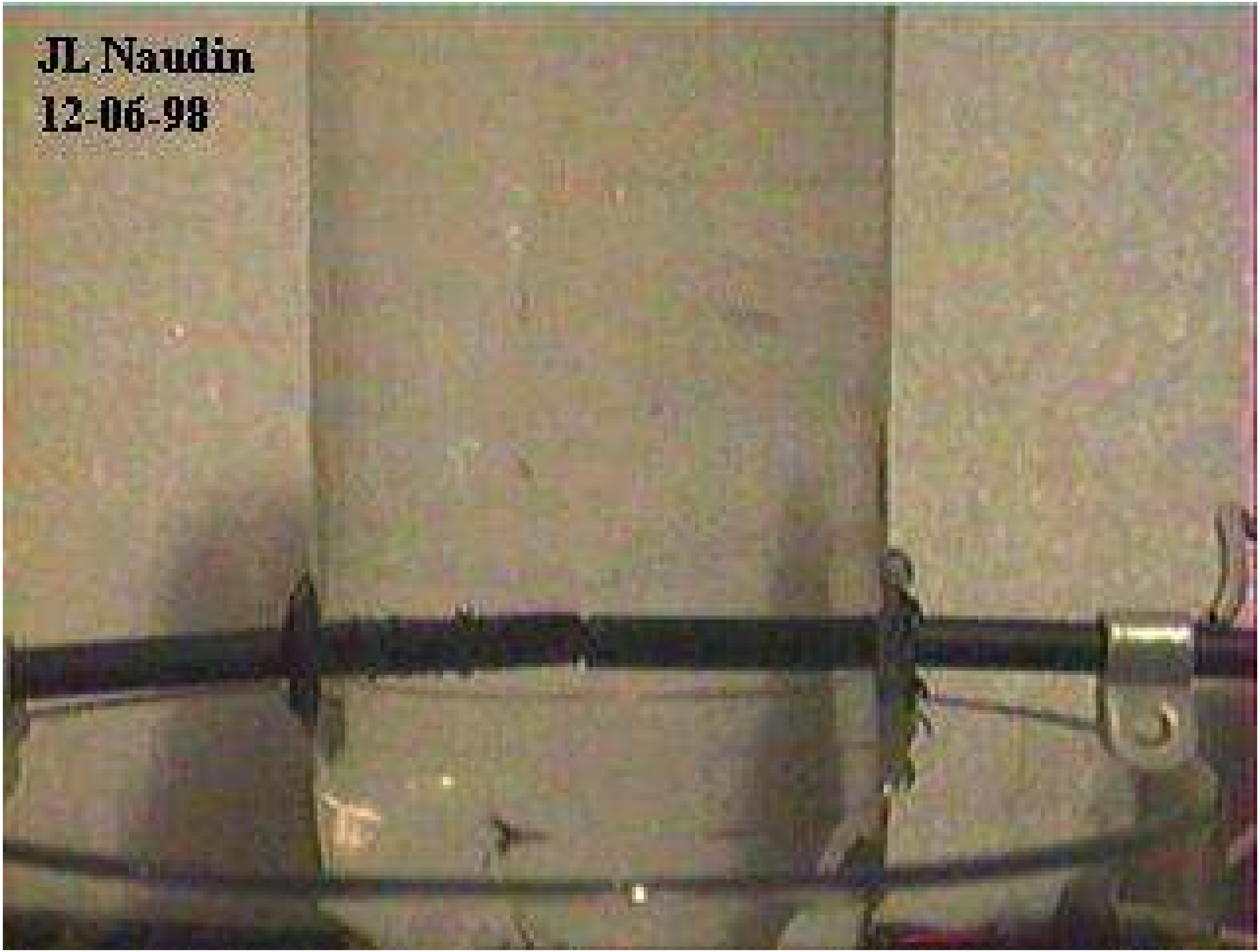


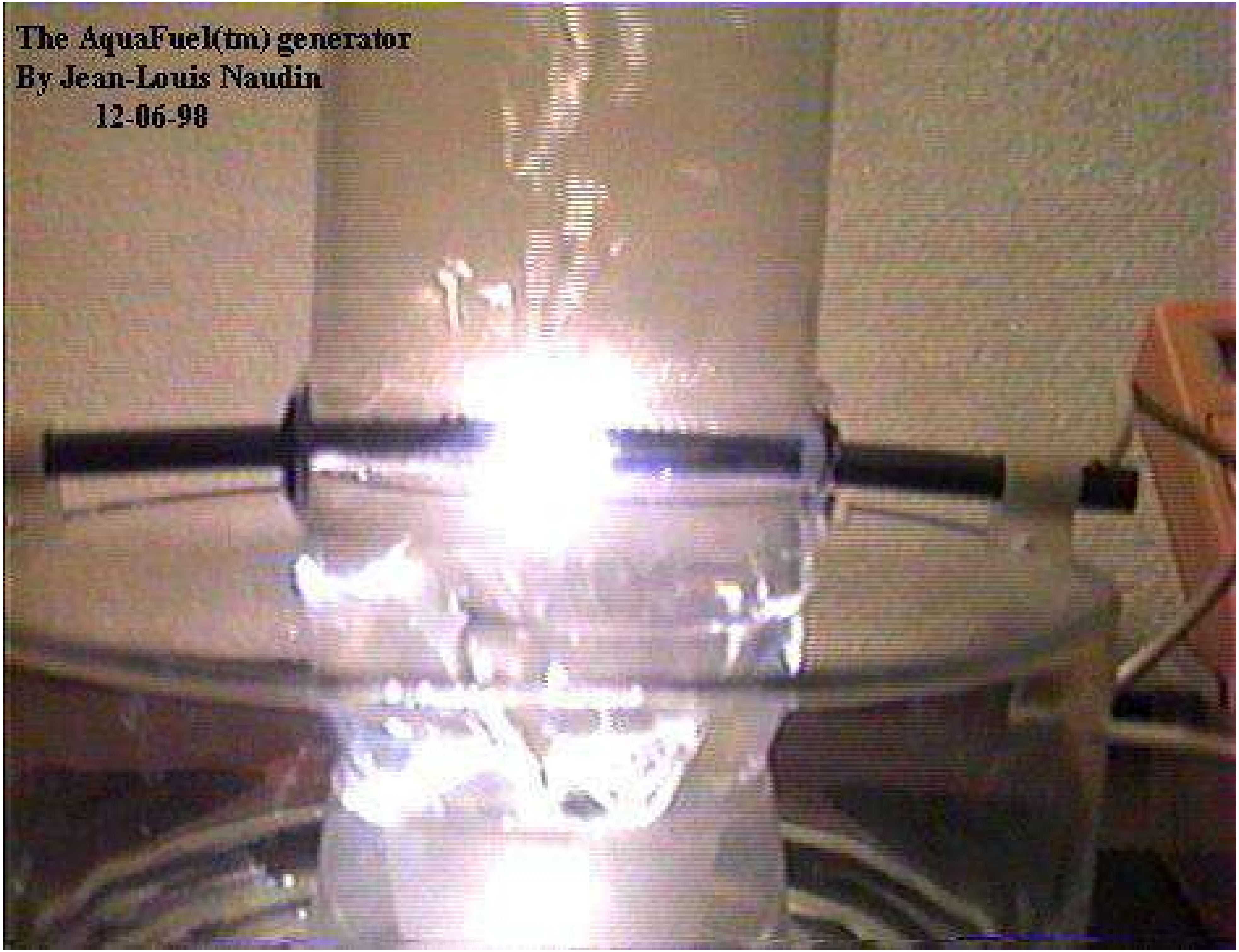
Figure 11. (**a**) AM resonator implemented, (**b**) Full-wave CWVM implemented, (**c**) top view of the AM resonator and full-wave CWVM, and (**d**) lateral view of the AM resonator and full-wave CWVM.

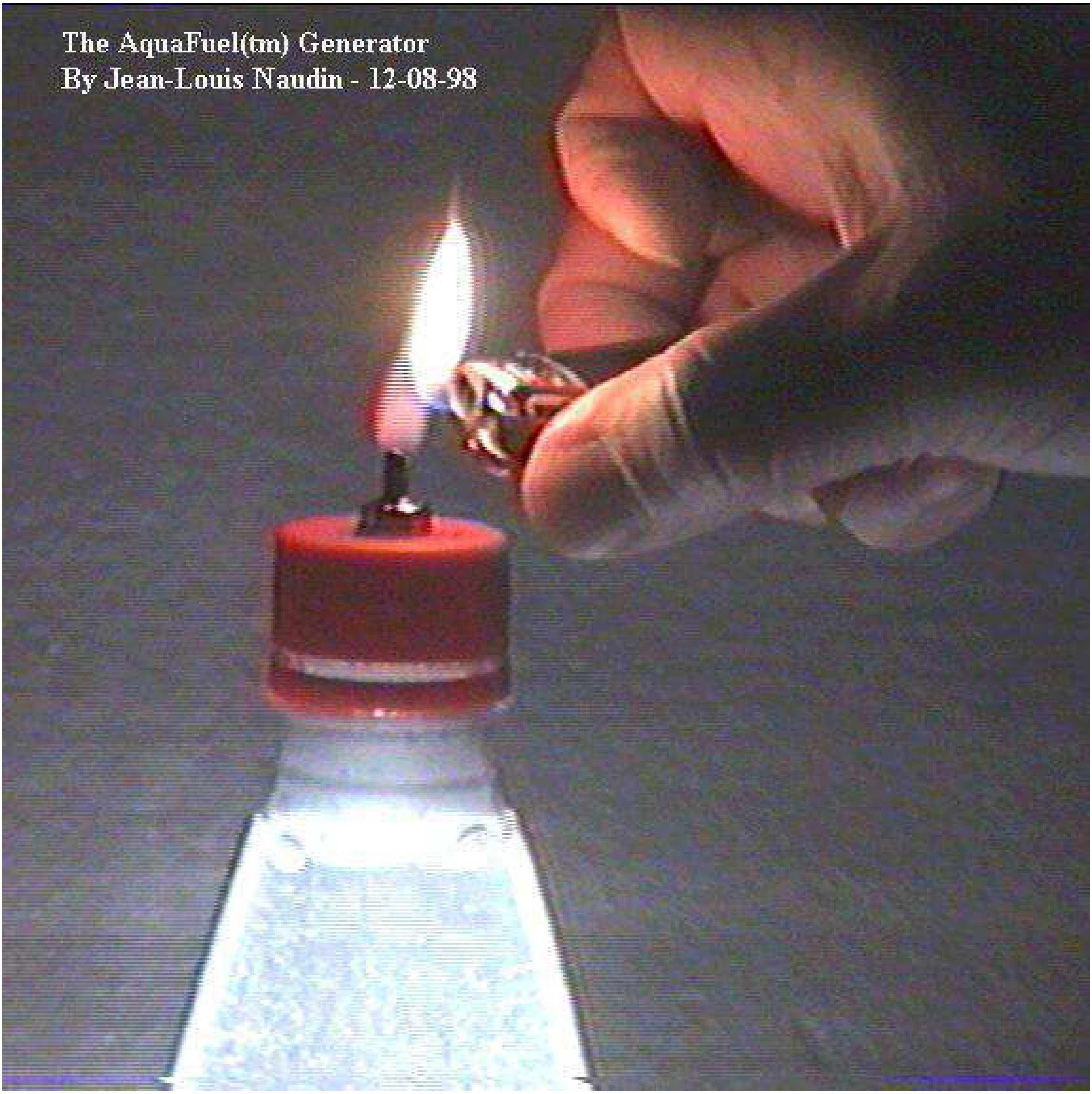



1 ohm / 50 W resistor
Hole
Plastic Bottle
carbon rods
The parts for building
the Aquafuel(tm) Generator
by JL Naudin 12-06-98

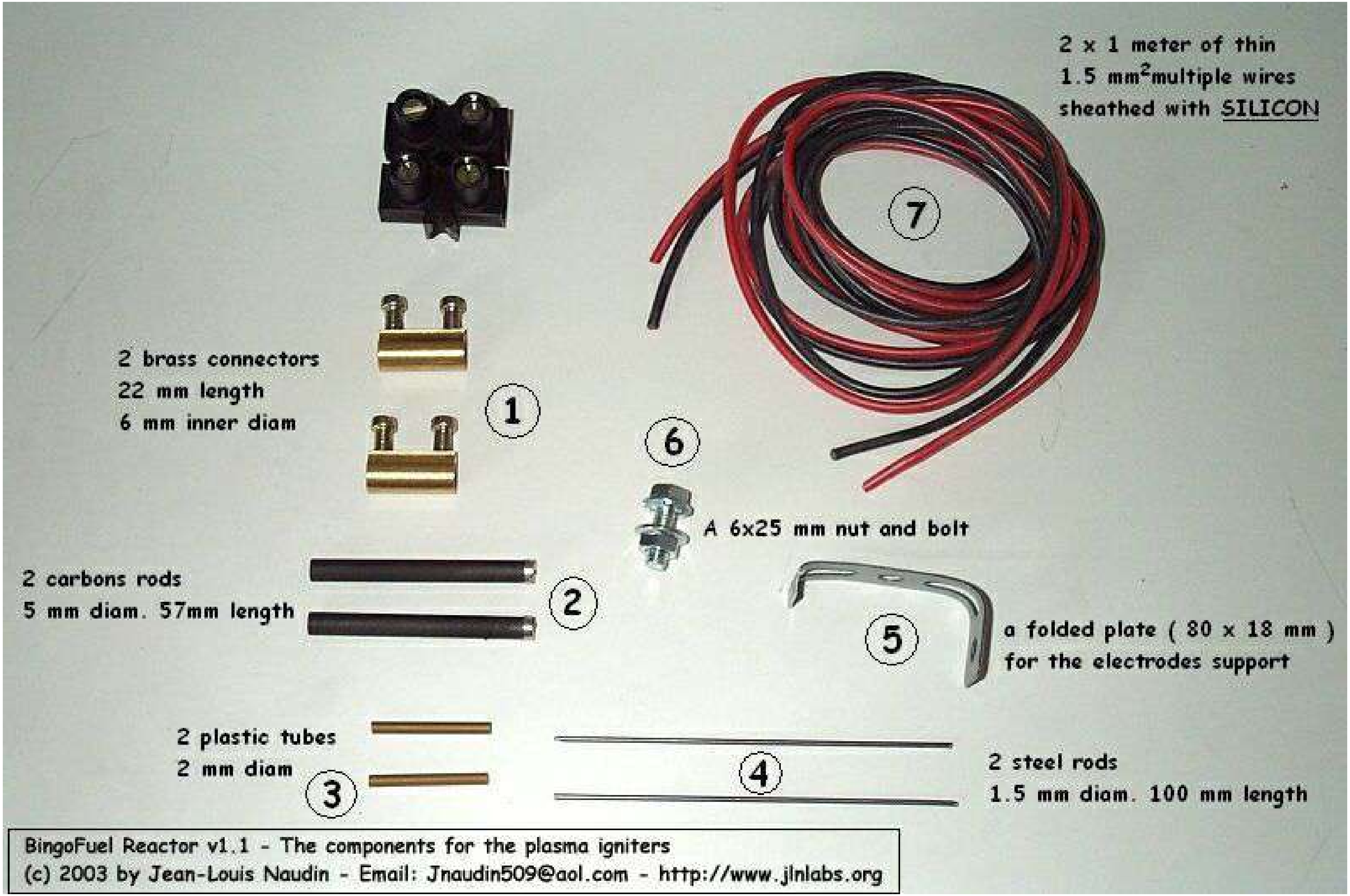

Current Voltage
1 ohm 50W
34V 15A DC
The Aquafuel(tm) Generator - JL Naudin 12-06-98


JL Naudin
12-06-98

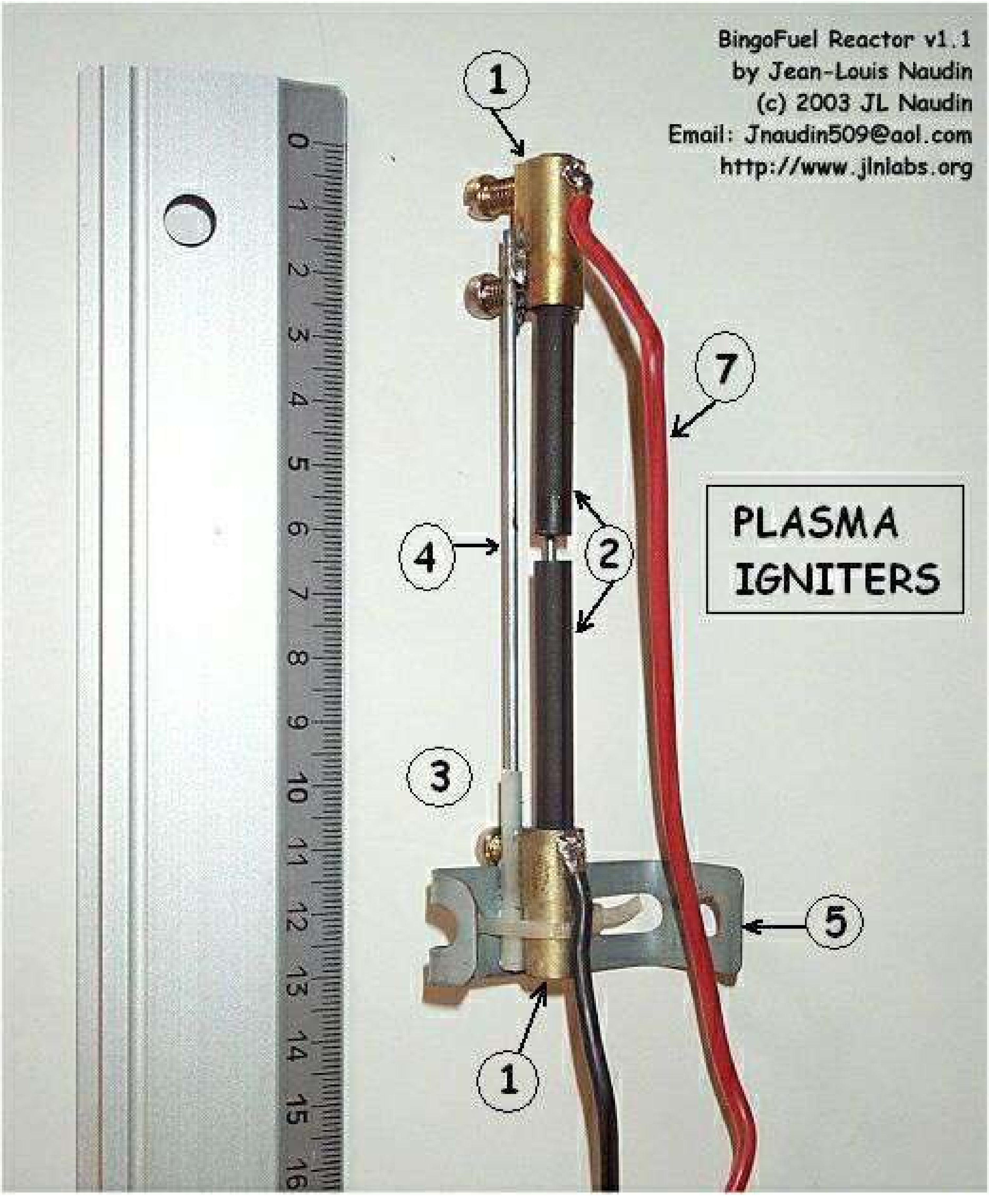

The AquaFuel(tm) generator
By Jean-Louis Naudin
12-06-98

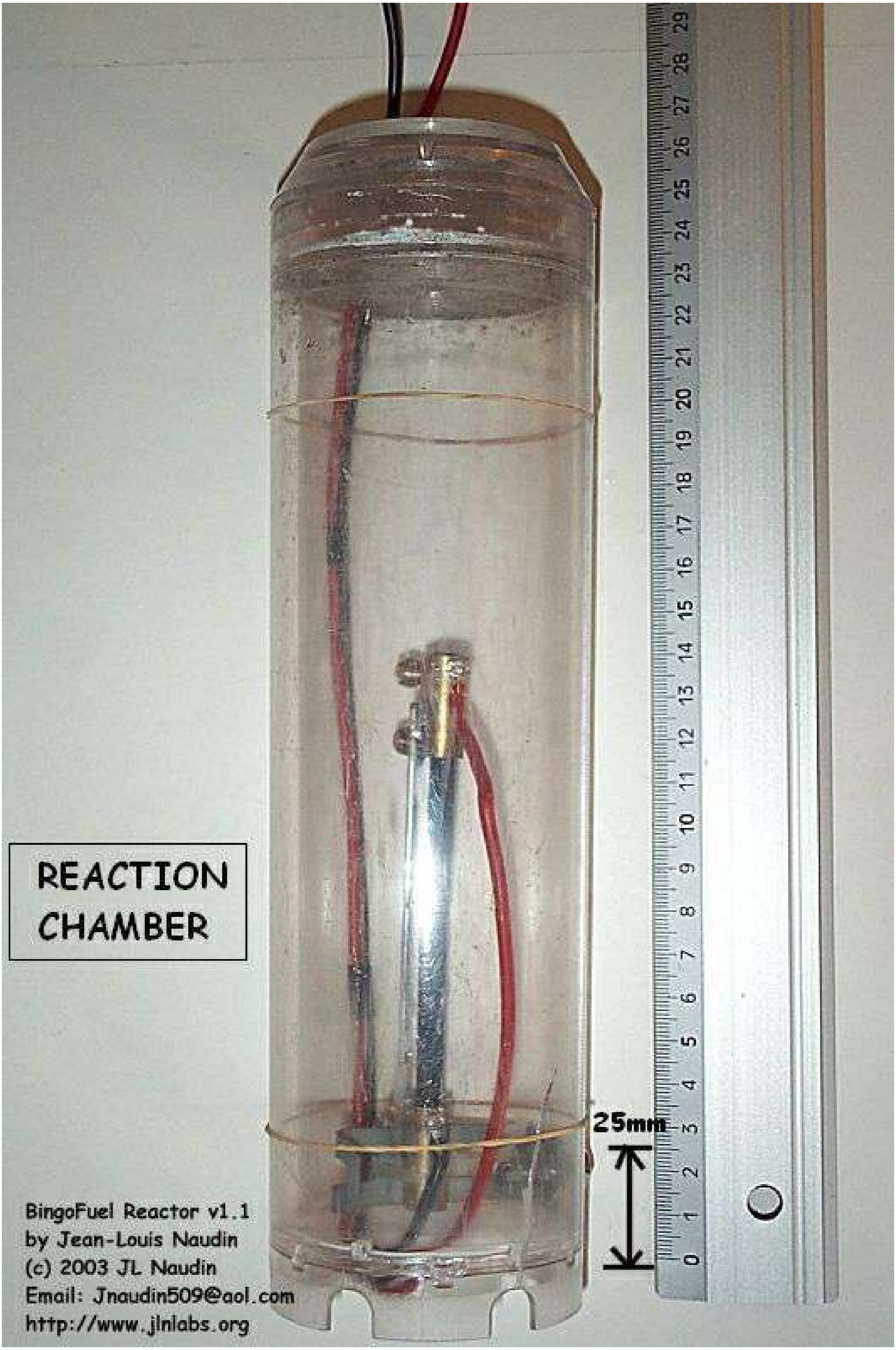

The AquaFuel(tm) Generator
By Jean-Louis Naudin - 12-08-98

BingoFuel Reactor v1.1 - The components for the reactor and and reaction chamber
(c) 2003 by Jean-Louis Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org

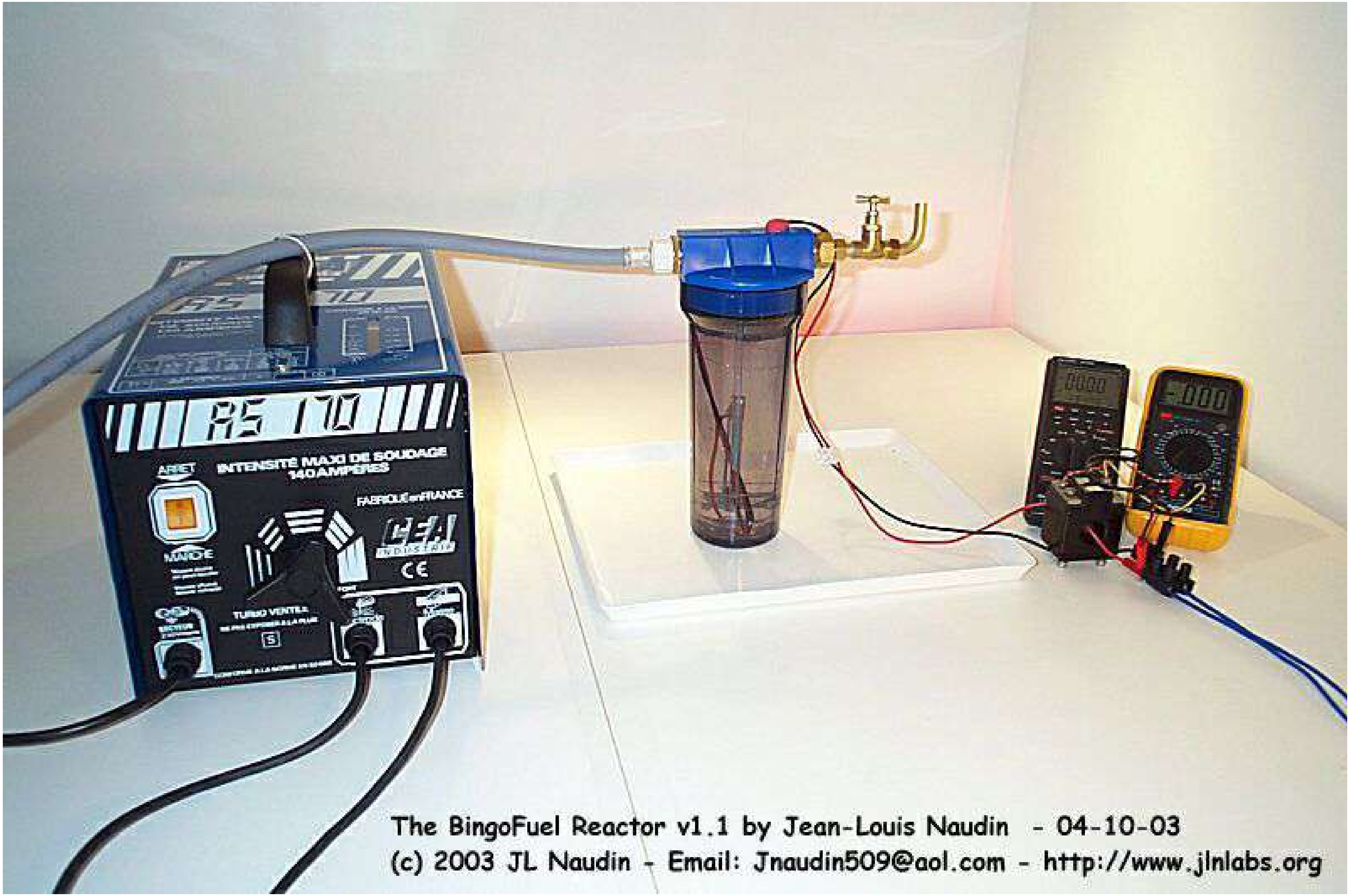

2 x 1 meter of thin
1.5 mm²multiple wires
sheathed with SILICON
7
2 brass connectors
22 mm length
6 mm inner diam
1
6
A 6x25 mm nut and bolt
2 carbons rods
5 mm diam. 57mm length
2
5
a folded plate (80 x 18 mm)
for the electrodes support
2 plastic tubes
2 mm diam
3
4
2 steel rods
1.5 mm diam. 100 mm length
BingoFuel Reactor v1.1 - The components for the plasma igniters
(c) 2003 by Jean-Louis Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org


Carbon rods
ZINC
CARBON
BATTERY
4.5V Zinc Carbon Battery


BingoFuel Reactor v1.1
by Jean-Louis Naudin
(c) 2003 JL Naudin
Email: Jnaudin509@aol.com
http://www.jlnlabs.org
PLASMA
IGNITERS
1
2
3
4
5
7
1


REACTION CHAMBER
25mm
BingoFuel Reactor v1.1
by Jean-Louis Naudin
(c) 2003 JL Naudin
Email: Jnaudin509@aol.com
http://www.jlnlabs.org


BingoFuel Reactor v1.1 - (c) 2003 by Jean-Louis Naudin
Email: Jnaudin509@aol.com - http://www.jlnlabs.org

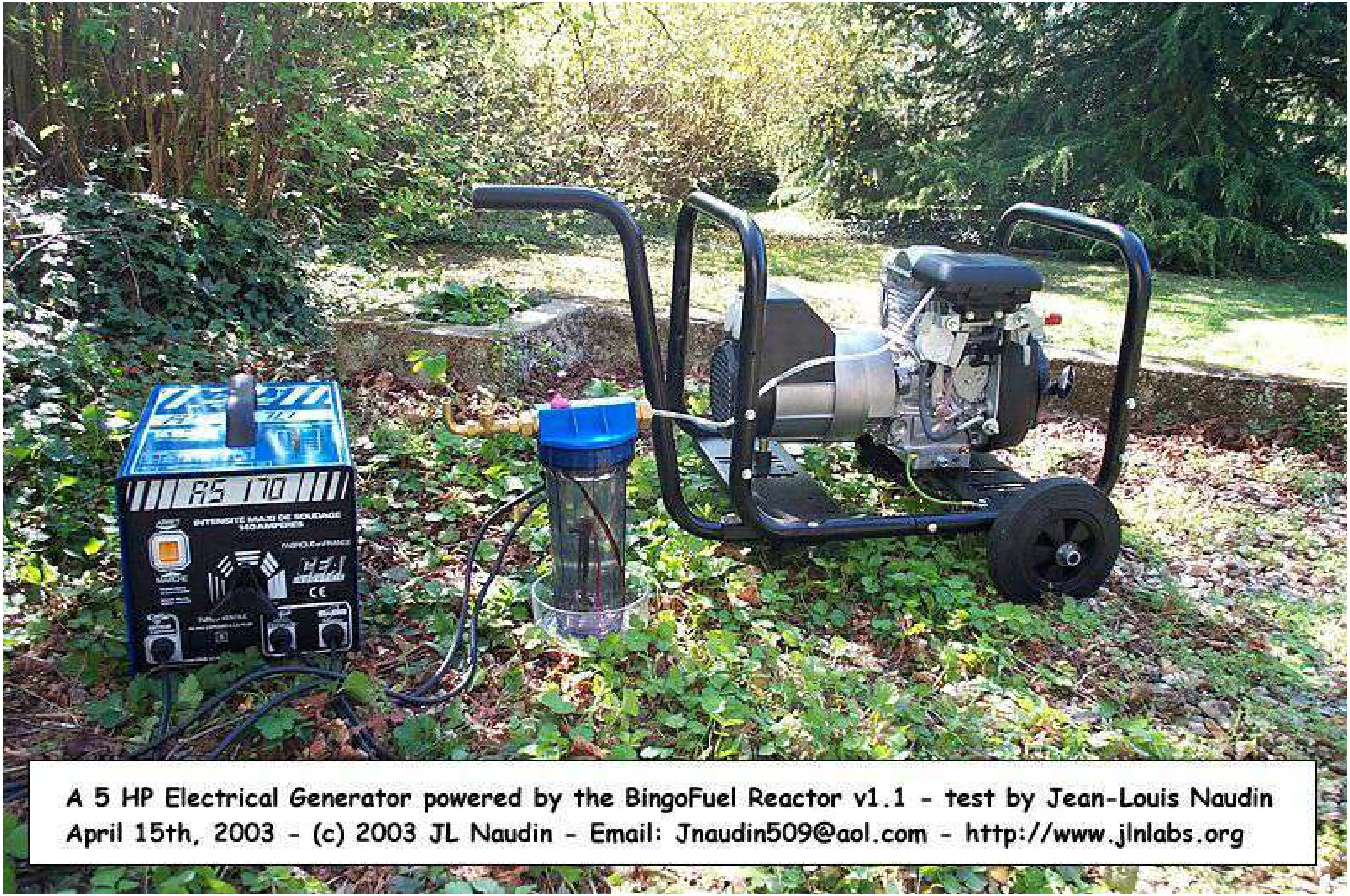


The BingoFuel Reactor v1.1 by Jean-Louis Naudin - 04-10-03
(c) 2003 JL Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org

OUTPUT = 180 L/h
of synthetic gas
OUTPUT = 900 L/h of fuel mixture
V=30.8V AC I = 81.6 A
2.04
The BingoFuel Reactor v1.1 by Jean-Louis Naudin - 04-10-03
(c) 2003 JL Naudin - Email: Jnaudin509@aol.com - http://www.jlnlabs.org

GROUPES ÉLECTROGÈNES MONOPHASÉS

50 hz			Moteur							Alternateur	Niveau sonore CEE Lwa	dB(A) @ 7 m	Dimensions L x l x h cm	Kg Poids	Options				
Type	Puissance max 230V		Marque	Type	Sécurité huile	Démarrage électrique	HP 3600 tr/mn	h Autonomie	L Réservoir	230V Disjoncteur					Kit brouette	Disjoncteur	Quick'lock	Com. à distance	Coffret dém. auto
	kW ISO 8528	kVA Cosφ 0,8																	
RANGER™ 2500	2,1	2,6	Honda OHC	GC 160	•	x	5	2,2	2	•	**98**	75	58x46x44	30	x	x	x	x	x



A 5 HP Electrical Generator powered by the BingoFuel Reactor v1.1 - test by Jean-Louis Naudin
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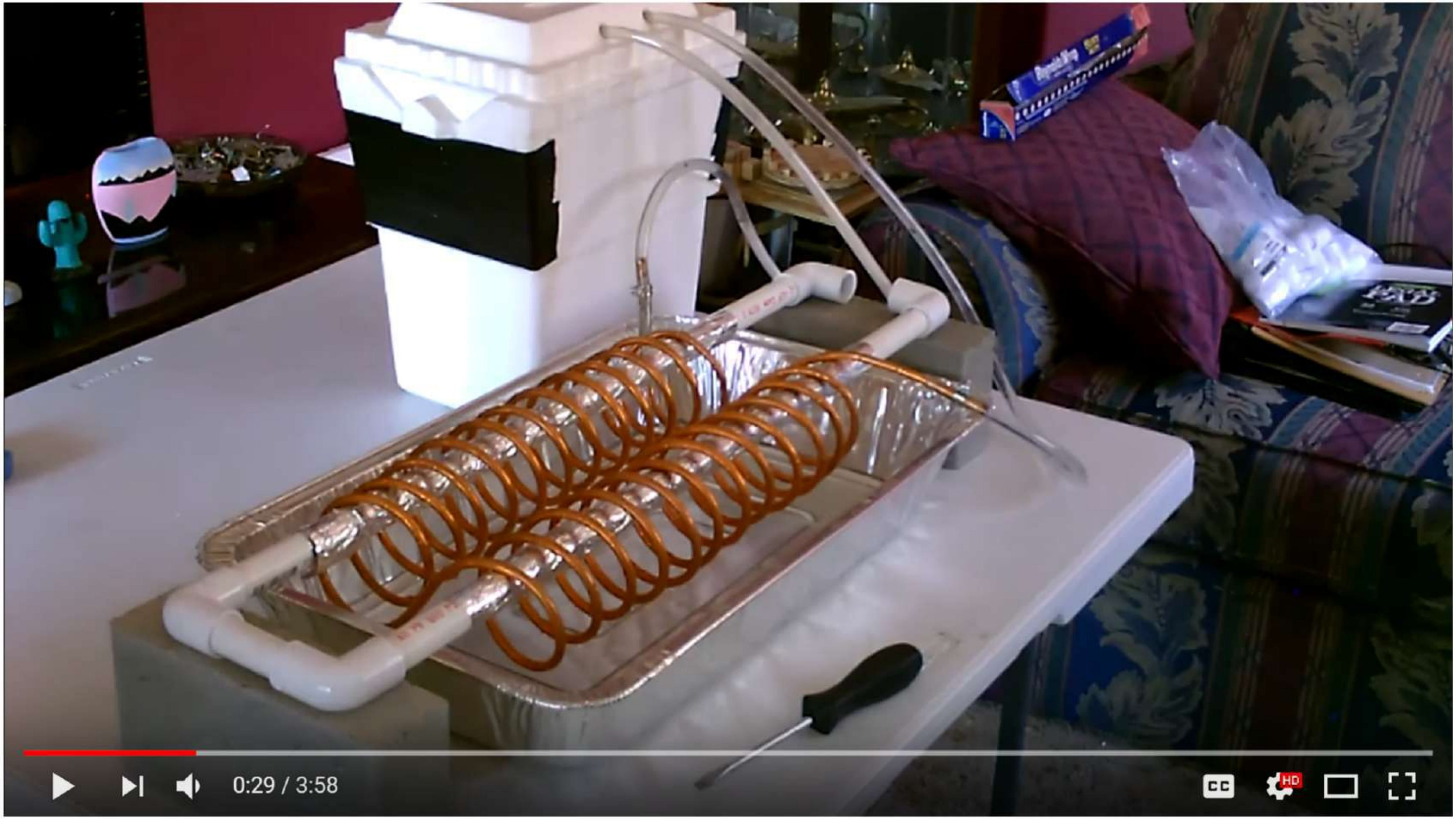
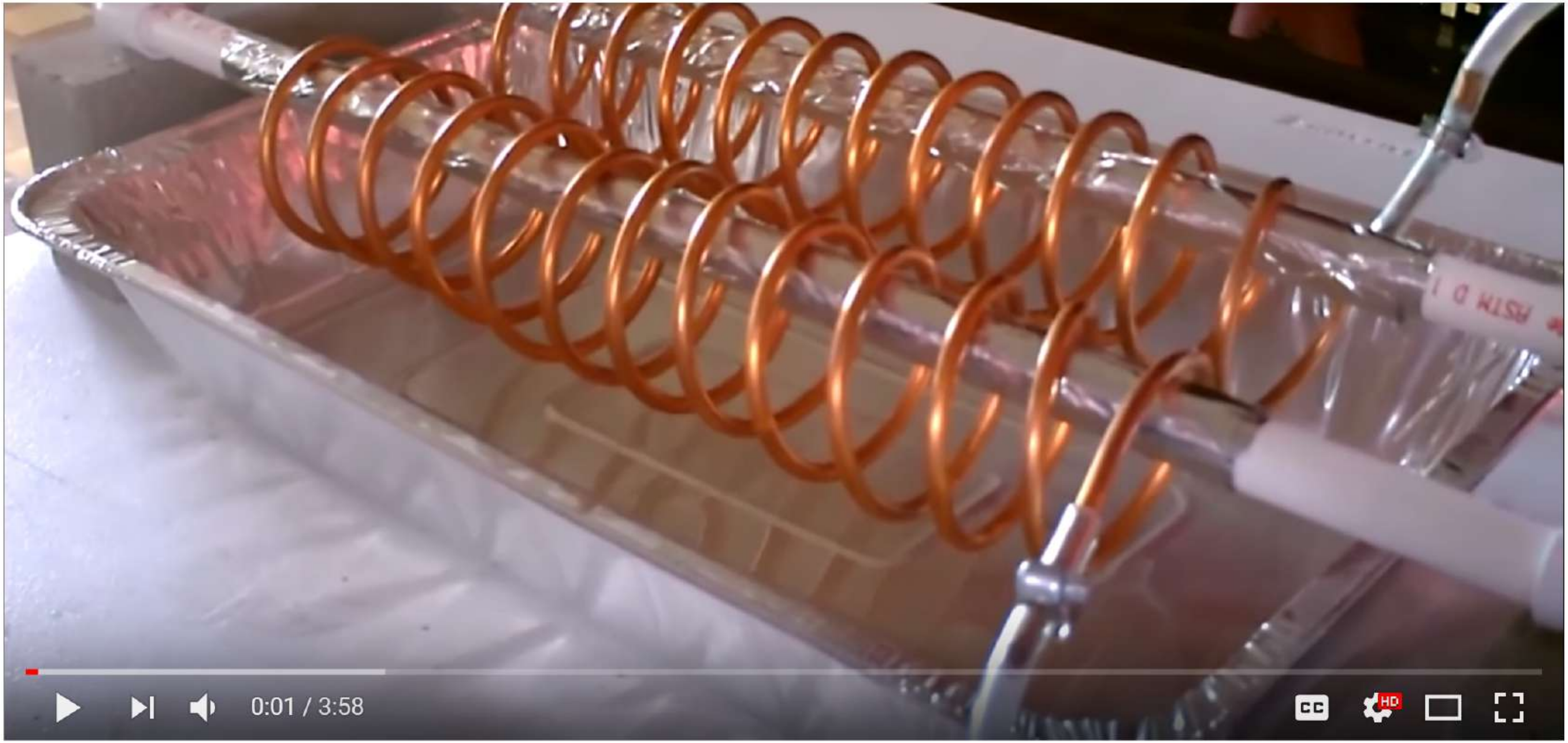


DIY Atmospheric Water Generator! - Produces/Extracts Distilled Water from the air! - DIY distiller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HD


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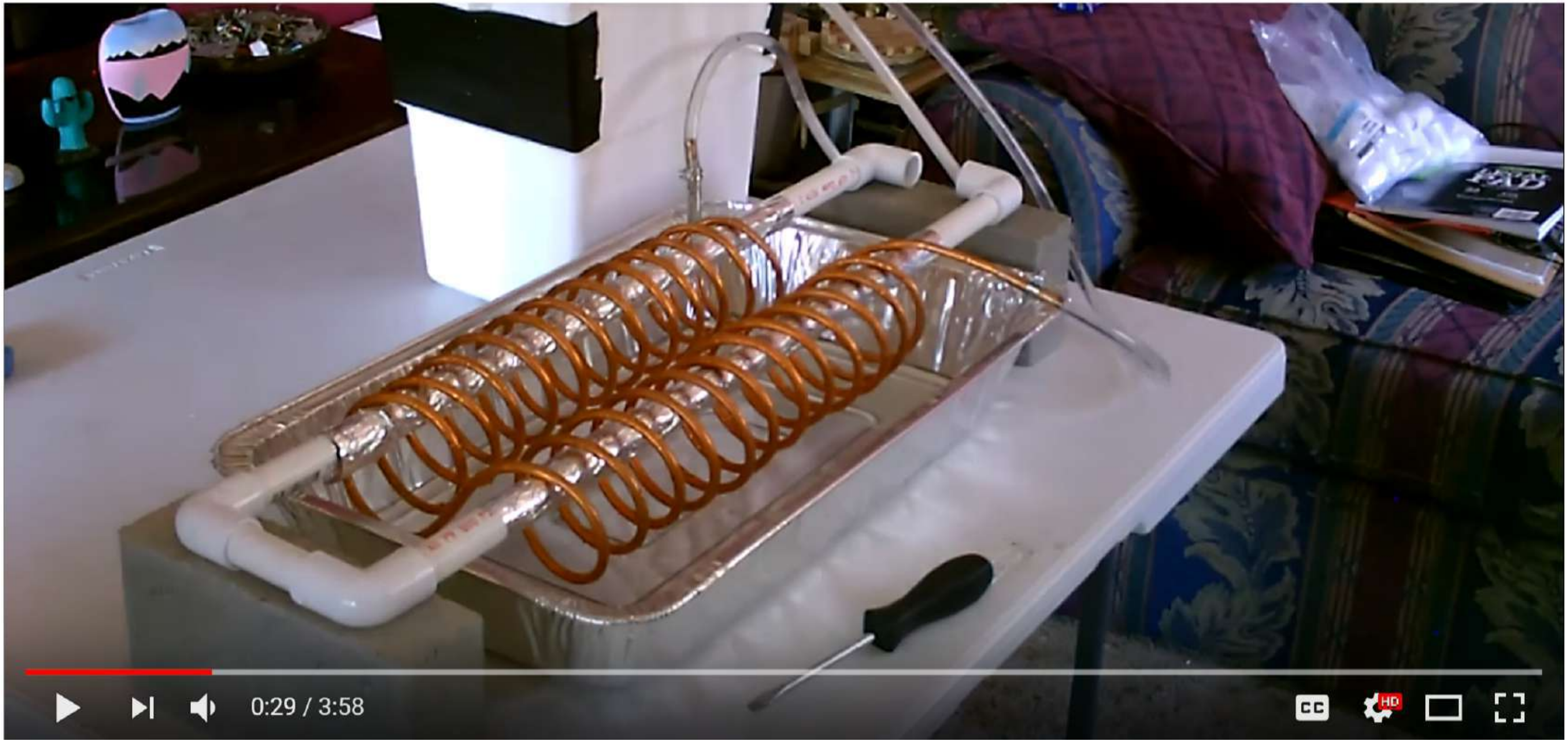
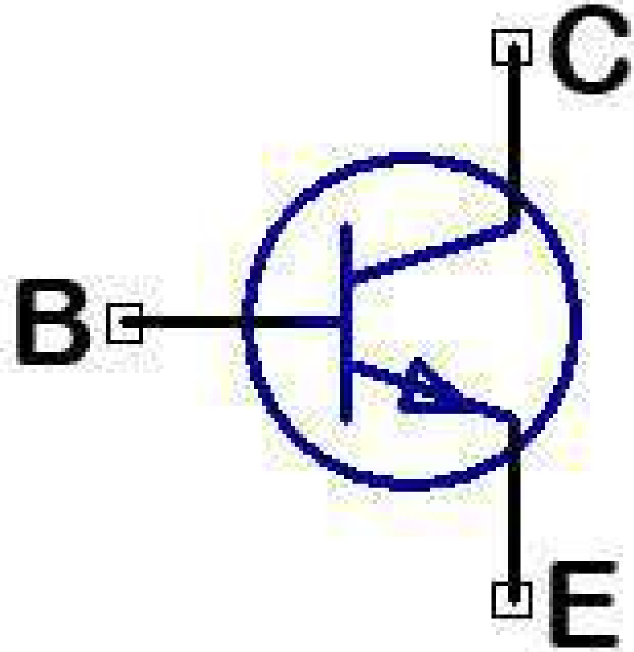

0:29 / 3:58

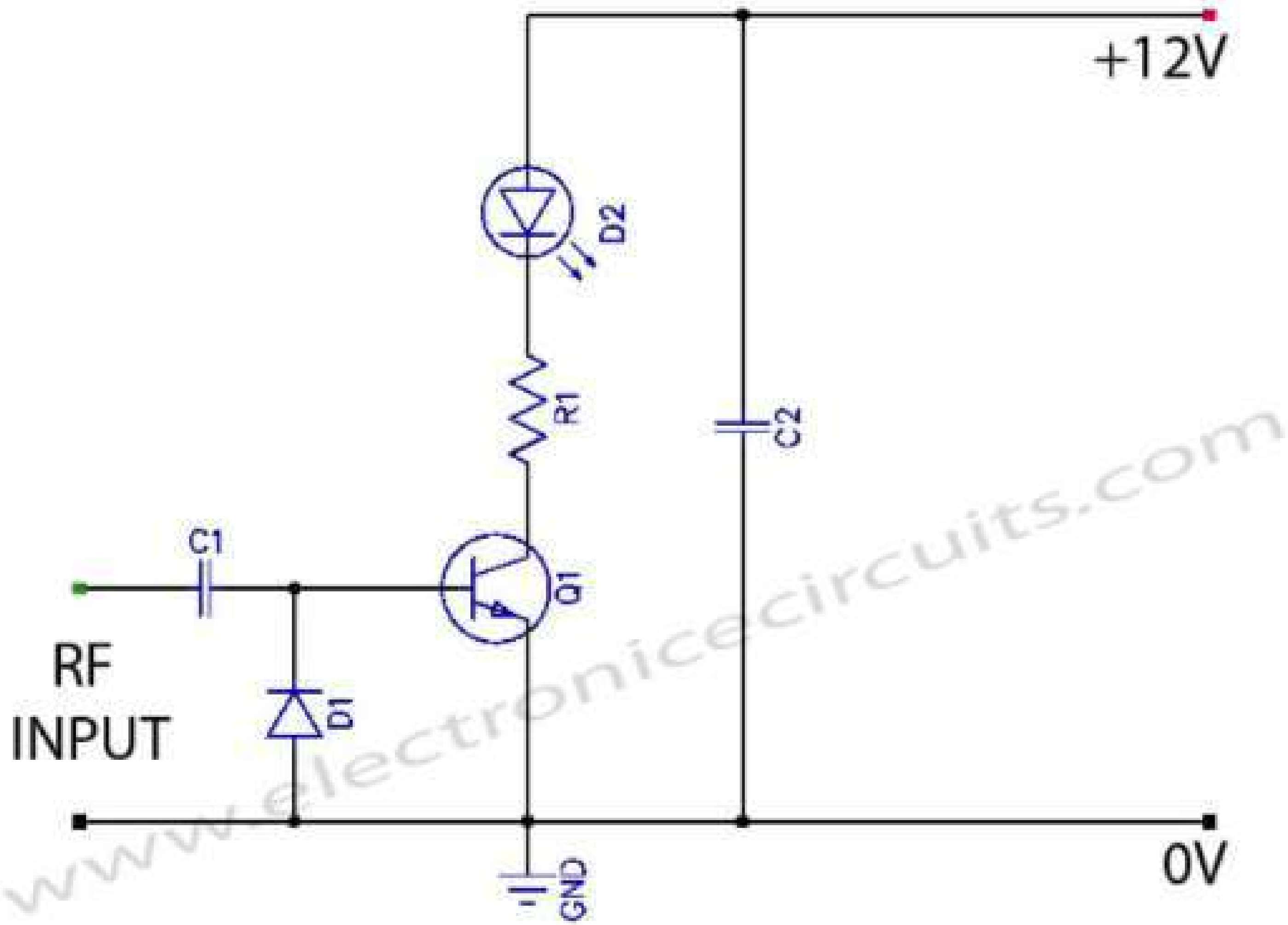
previous next image 2 of 2 Transmitter RF Output LED Indicator Circuit close

2N3904
NPN General Purpose Amplifier



E = EMITTER
C = COLLECTOR
B = BASE

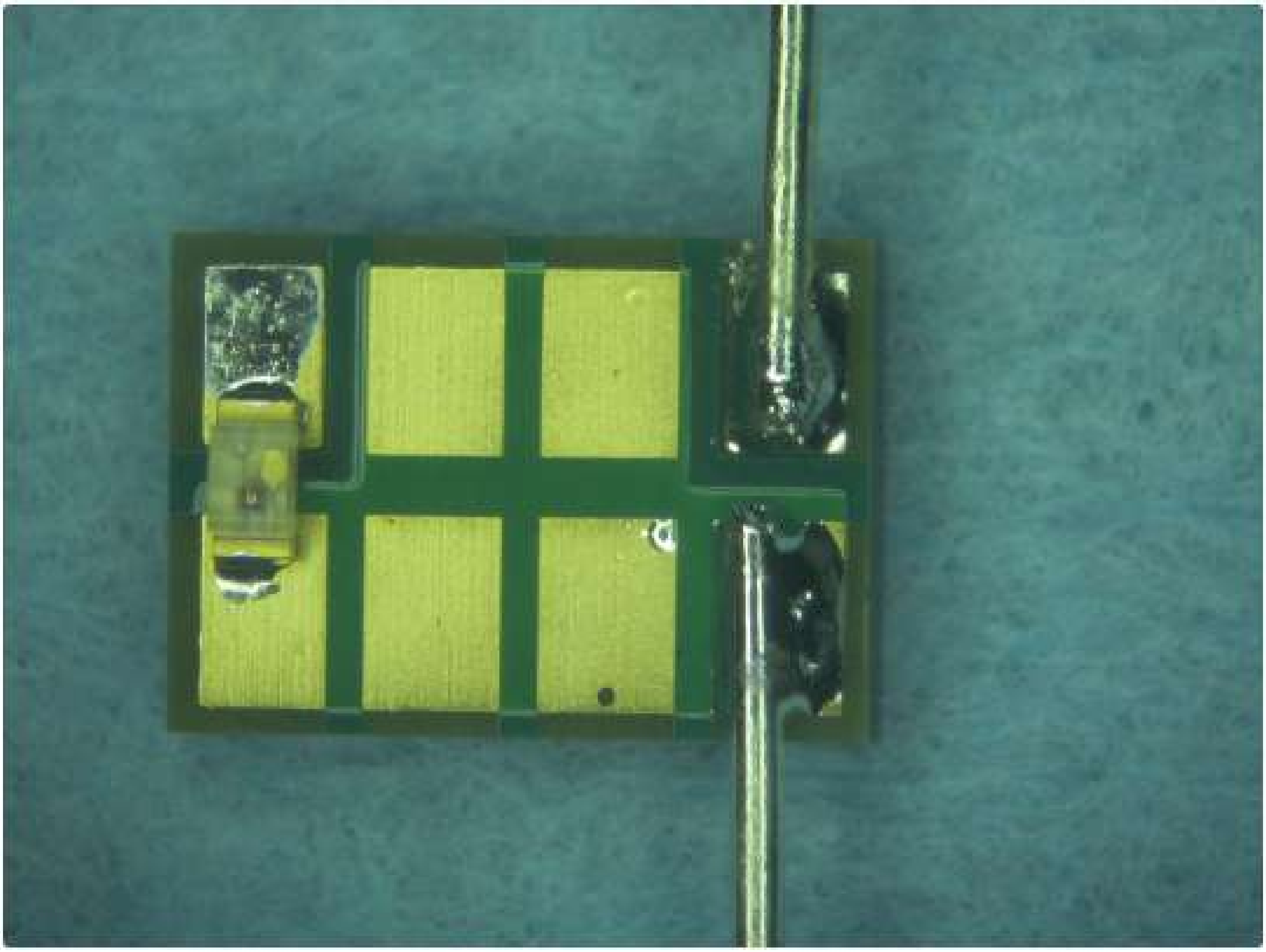
www.electronicecircuits.com



PARTS LIST	
R1	560Ω
C1	330pF
C2	0.1µF
D1	1N34 or 1N60 or ECG-109 or NET-109
D2	LED
Q1	2N3904

previous next image 1 of 2 Radio frequency LED Output Indicator Circuit close

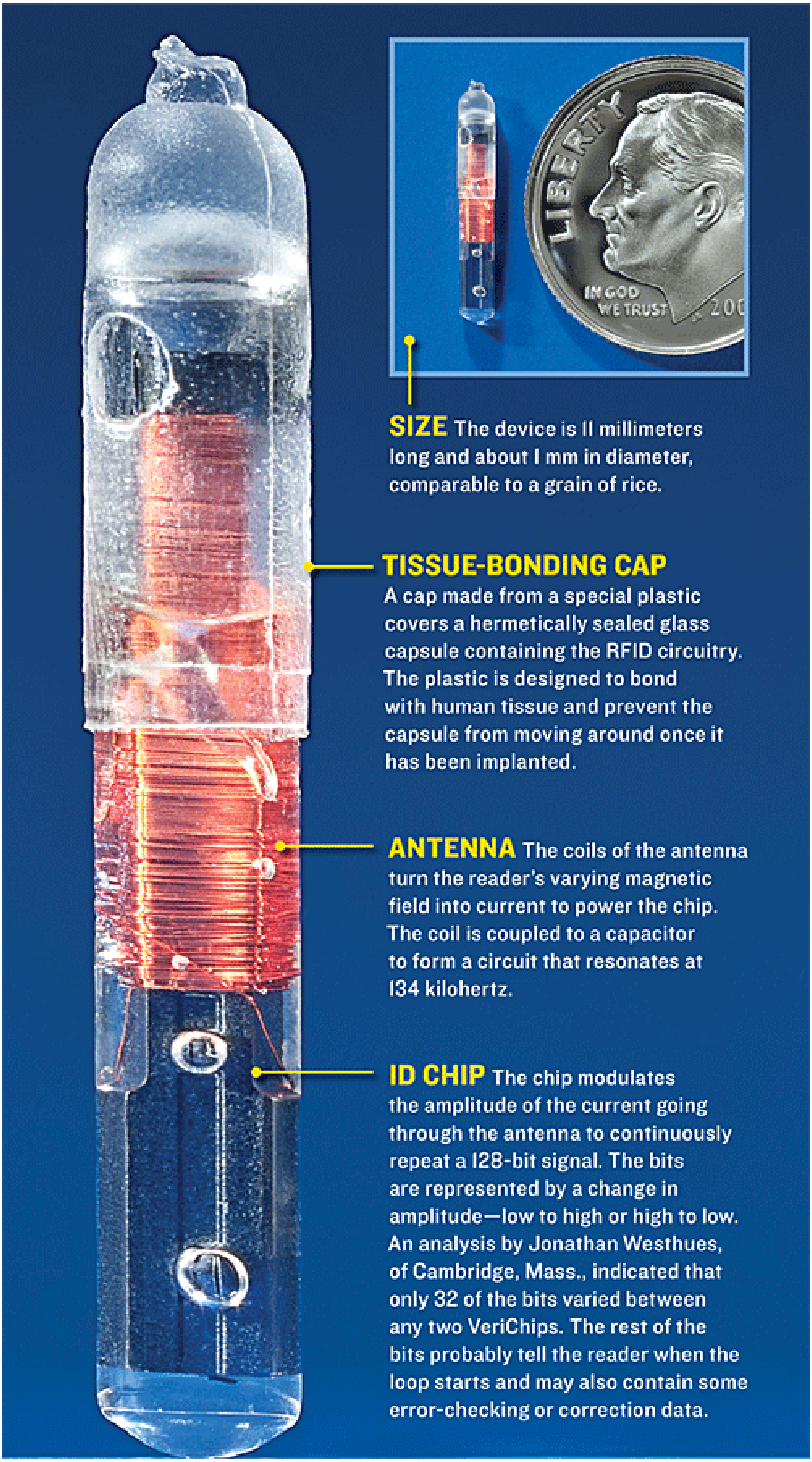
Step 1: Assembly Instructions



Cut the resistor wires off next to the resistor. These are just the right size at 1 1/8" long for a 2.5GHz dipole. Throw away the resistor and keep the wires.

Put solder paste on the module at pins 1 & 8 and at pins 4 and 5.Place the wires on pins 4 and 5 and solder carefully using tweezers to hold the wires (it will burn you otherwise). Solder at the lowest soldering temperature possible to avoid damaging the module. If the iron is too hot then you may damage the internal connections inside the module. Use a minimum of time for soldering (<10secs). The wires work as a dipole antenna to collect the 2.5GHz energy into the RF (Radio Frequency) Input of the module.

Place the LED with the anode (positive side) onto pin 1 and the cathode (negative side) on pin 8 and solder carefully. For those not familiar with LEDs, the triangle symbol of the diode should point to the ground pin of the module (pin 8). Your final microwave harvester should look like figure 2


LIBERTY
IN GOD WE TRUST
SIZE The device is 11 millimeters long and about 1 mm in diameter, comparable to a grain of rice.
TISSUE-BONDING CAP A cap made from a special plastic covers a hermetically sealed glass capsule containing the RFID circuitry. The plastic is designed to bond with human tissue and prevent the capsule from moving around once it has been implanted.
ANTENNA The coils of the antenna turn the reader's varying magnetic field into current to power the chip. The coil is coupled to a capacitor to form a circuit that resonates at 134 kilohertz.
ID CHIP The chip modulates the amplitude of the current going through the antenna to continuously repeat a 128-bit signal. The bits are represented by a change in amplitude—low to high or high to low. An analysis by Jonathan Westhues, of Cambridge, Mass., indicated that only 32 of the bits varied between any two VeriChips. The rest of the bits probably tell the reader when the loop starts and may also contain some error-checking or correction data.

Materials:

1. Fluorescent Lamp Protector Sleeve – used to make the two Leyden jars.
2. Staircase Balusters – these will be the supports for the rotating disks.
3. 1/8" Bronze Brazing Rod – will be used to fabricate all of the conductors. If you can't find this at your local hardware store look for a welding supply shop, they are sold by the pound and are incredibly useful for many things even if you don't own an oxyacetylene torch.
4. Fiberglass Driveway Marker Rod – Make sure it's round and 5/16" in diameter; these will be the shafts and insulated supports.
5. 3/8" OD Thin Wall Brass Tubing – one 3' section.
6. Knick-Knack Shelf Kit – approximately 24" by 6". You can use any ¾" board you desire, the shelf included has a nice rail that will add to the overall look of the project.
7. Inline Skate Replacement Wheels – Quantity 2.
8. Lamp Parts – You will need a selection of lamp parts which may vary depending on what is available at your particular store. Pictured here are pull chains, finials, and ball nuts used to make parts of the charge collector combs and discharge electrodes. Also pictured are cabinet knobs which were not used in this project but would make good alternatives. See the charge collector construction step for details.
9. 1" Copper Pipe Hangers – These you'll find in the plumbing section, they are copper plated steel.
10. Solder wick (not pictured) – for the neutralizing brushes, you might have to visit Radio Shack for this.
11. Rubber feet – Quantity 6.
12. Clothes Line Pulleys – must be plastic.
13. 3/16" Acrylic Glazing – enough to cut (2) 14" circles from. Polycarbonate will work too and is easier to work with but costs more than twice as much.
14. Aluminum tape (not pictured) – found with the duct tape and HVAC supplies, get the kind with the peel off paper backing.
15. Rubber O-ring belts (not pictured) – available from McMaster-Carr, part number: 94115K259 about $15 for a package of eight.

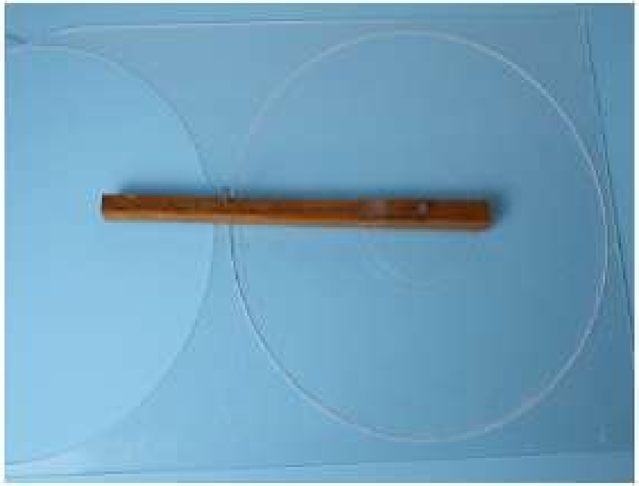
The total cost of purchasing the materials new is about $100. However, these are all relatively common items

Disks and Drive Components:

wimshurst-circle-cutter-inset.jpg

Make the cutting tool:

1. To cut the two 14" acrylic circles we will first need to make a tool. Cut a 12" length of wood ¾" square. Pine will work but hardwood is preferable.
2. Drill a pilot hole near one end and press or drive a #6 penny nail through the stick so the point sticks out about ¼".
3. Drill a second hole exactly 7" from the first and insert another #6 penny nail into it.
4. Use a fine metalworking file to shape the point of the second nail as shown. You want to make a chisel point with a slight undercut on the leading face.



wimshurst-circle-cutter.jpg

Cut the acrylic disks:

1. Lay out your circles with a compass to be sure they will both fit on your sheet of acrylic.
2. Drill a 1/8″ hole in the center of your circle. Be gentle when drilling acrylic, it cracks easily. Polycarbonate is quite a bit tougher.
3. Working on a carpeted floor, insert the unmodified nail in the center and begin scoring your circle. Cut about a quarter of the way with each stroke and work your way around the circumference.
4. If the cutter sticks, lift it out and move to a different spot.
5. When you think you've gone about halfway through, flip the acrylic sheet over and cut from the other side. You may end up flipping the sheet several times before the circle pops free.
6. Clean up the edge of the circle with some 400 grit sand paper and set them aside.

Cut belt grooves in the skate wheels:

wimshurst-skate-wheel-groove.jpg

1. Gently clamp or strap your drill to a workbench as pictured.
2. Assemble a mandrel from a 5/16" bolt and some large (fender) washers, when assembled the entire wheel must spin, not just the bearings.
3. Chuck the assembly into the drill. The wheel should turn toward you and the speed should be fairly fast.
4. With a crosscut bastard file make a ¼" wide flat on the wheel and then switch to a rat-tail file to cut the grove. Apply light and even pressure to the file.

Attach the skate wheels to the disks:

wimshurst-skate-wheel-mount.jpg

1. Use a step drill bit like the one pictured to increase the size of the hole in the acrylic disk to 5/16". Remember, be gentle and go slowly because acrylic is easily cracked.
2. Remove the washers from the wheel and use the 5/16" bolt to center the wheel against the disk.
3. Drill (4) 1/8" holes through the disk, don't drill into the wheel.
4. Switch to a 3/32" bit and drill partway into the wheel in 4 places.
5. Finish the holes with a counter sink.
6. Now remove the 5/16" bolt and drill the center hole out to ½" or 5/8" using a step drill, you want the edges of the hole completely clear of the rotating parts of the wheel bearing.
7. Install (4) small counter sunken screws, tighten these so they *just* touch the disk, the disk must remain as flat as possible.

Cut the sectors:

wimshurst-sector-cutting.jpg

1. Decide how many sectors you are willing to cut. I'm rather lazy and opted for fewer sectors, 16 per disk. If you decide to make 24 or even 32 sectors you'll have to make them smaller but you will be rewarded with longer sparks.
2. The sectors are cut from aluminum tape. Make a template from a piece of plastic milk jug and trace each sector. Cut them individually, don't be tempted to stack multiple layers of tape; the cut will end up ragged and will bleed charge away into the air.
3. Tip: I found it easiest to use an X-acto knife and straight edge to cut the long sides and then switch to scissors for the curved ends.

wimshurst-affix-sectors.jpg

Attach the sectors:

1. Lay out a circle on a piece of foam board.
2. Draw radial lines to correspond with the number of sectors you've chosen
3. Place your template centered at 6 o'clock and trace it. The large end should face out and be about ¼" from the edge of the disk.
4. Set the disk on the foam board and insert push pins around the circumference so it turns in place.
5. Carefully peel and stick the sector in place. It's a good idea to make some extra sectors and practice this operation first. A length of fiberglass rod makes an excellent burnishing tool.
6. Turn the disk one line to the left and repeat. Always index the line to the first sector you stuck down, this will help make the spacing as even as possible.

wimshurst-drill-pulley.jpg

Prepare the drive pulleys:

1. Remove the pulleys from their cages by drilling out the rivets.
2. Use the step drill to enlarge the holes to 5/16". Drill from one side, then the other to enlarge the full depth of the hole in the pulley. Note: The use of the step drill is especially important here because of its self-centering characteristics.
3. Cut (2) 7" lengths of fiberglass rod, slightly bevel the ends with a file to prevent chip out. Be careful of the glass fibers, they can be really irritating!
4. Drill the splines out of the window crack bore with a regular 5/16" drill bit. Clamp the crank in a vise and go slowly; making sure the bit is in line with the axis.

Cut and drill the supports:

wimshurst-drill-upright.jpg

1. Cut 12" off of each of the staircase balusters. Choose the end that you think looks best. On my prototype machine I used both ends of the same baluster and thus had two different style supports.

2. Clamp the two supports together as shown and drill 5/16" holes 3 ¼" inches from the bottom (square end) and 11" inches from the bottom.

3. The lower hole will need to be reamed out so that the fiberglass axle turns freely in it. Use a slightly larger drill or rat-tail file for that. You can also drill it larger and insert plastic bushings for smoother operation. Alternatively you can bore it out with a step drill to match the diameter of a pair of skate bearings – this works exceptionally smoothly and is what I ultimately did to my own machine.

wimshurst-screw-uprights.jpg

Attach the supports to the base:

1. Draw a line parallel to the back of the base 2 ½" in, this is not quite to the center. Draw a second line perpendicular to the first on the center of the base.

2. Cut a 1 ¼" gap in the rail on the center line, as pictured.

3. Drill (2) 3/8" inch holes through the base on the center line 5/8" from the front and back edges.

4. Use 2" drywall screws and large washers to attach the supports to the base. The combination of the large washer and 3/8" hole will allow you to adjust and align the position of the rotating disk precisely.

5. Drill (2) 5/16" holes on the line parallel to the long dimension and 7 5/8" from the centerline on each side – these holes need to be straight up and down so drill carefully, use a small carpenter's square to line up the drill.

Charge Combs and Neutralizing Bars:

wimshurst-solder-balls.jpg

Prepare the charge collectors:

1. Use a hacksaw to cut off the nail ends of the pipe hanger. The overall length should be 5".

2. You'll find small brass ball cap nuts in the electrical section at the hardware store; they are most commonly used to secure the top of brass outdoor lighting fixtures.

3. Place the small brass ball nuts on the ends of the hanger, heat them with a small torch and apply just enough solder to fill the joint. Note: Be careful not to overheat the pipe hanger, it is copper plated steel and it you heat it too much the solder may not adhere.

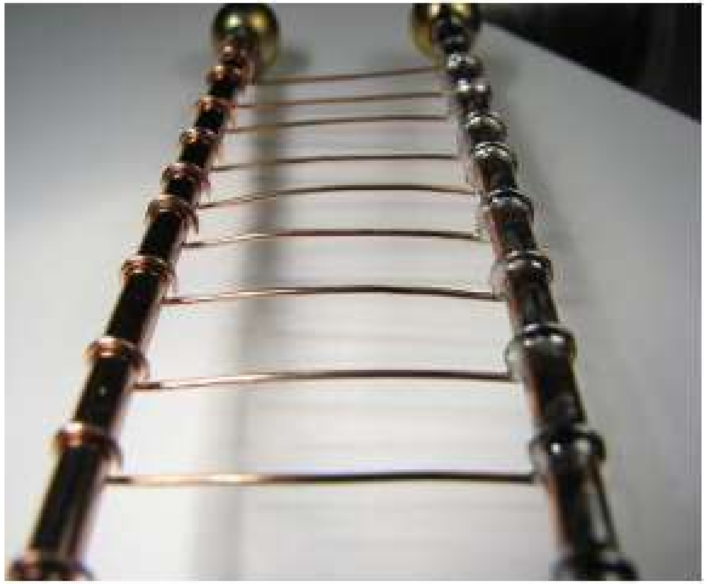
The torch pictured is a Lenk LSP-180 butane torch/soldering iron and it is a marvelous tool.

Attach the collector comb prongs:

wimshurst-prongs-progression2.jpg

1. You need to make 8–12 pointy prongs down each side of the collector comb. I stripped the conductors out of a 3' section of telephone wire to make them.
2. Wrap the copper wire around the pipe hanger as shown in the left-most example. I made 11 turns.
3. Cut away the center portion of the wire on one side only and bend the cut ends around the pipe hangers.
4. Spread the prongs out evenly along the portion of the charge collector that will be opposite the sector.

Solder the prongs:



wimshurst-solder-prongs.jpg

1. Crimp the ends tightly around the pipe hanger.
2. Use a large soldering iron to solder each joint. Apply sufficient solder so that when you take the soldering iron away solder flows down to fill the gap at the end of each length of wire. We want to avoid any points other then the prongs themselves.
3. Once you've soldered all of the joints cut down the center of the wires but don't trim them to length until it's time to install the combs.

Charge collector mount:

wimshurst-collector-assembly.jpg

I made a couple of different collector mounts using various lamp parts and cabinet knobs. This was the simplest, but you may have to improvise if you can't find these particular lamp parts at your local hardware store.

Pictured here right to left:

- 3/8" OD thin wall brass tubing 6" long
- 3/8" threaded collar
- 3/8" lamp "nipple" 1" long
- Lamp washer nut (threaded)
- Rubber flat washer
- 3/8" brass washer
- 3/8" threaded lamp finial
- #8-32 screw

Prepare the collector mount:

1. Using the step drill, bore out one half of the threaded collar.
2. Screw the nipple halfway into the collar and insert the brass tubing into the opposite end and solder it in place.
3. Drill one hole straight down into the top of the finial and thread with a #6-32 tap. Use the drill size written on the tap.
4. Drill a 1/8" hole through the body of the finial as pictured, this is for the discharge electrode.
5. Cut a ½" length from the extra you trimmed off of the pipe hanger earlier and solder it to the brass washer, this will allow the assembly to clamp and hold the charge collector perpendicular to the support.
6. Test assemble the mount and then disassemble and set aside.

wimshurst-discharge-assembly.jpg

Prepare the discharge electrodes:

1. Cut two 15" lengths of brazing rod and bend them as shown. I bent mine by hand but you could bend a 30" length around a five gallon pail and then cut it in the center for a neater appearance.

wimshurst-discharge-ball-cut.jpg

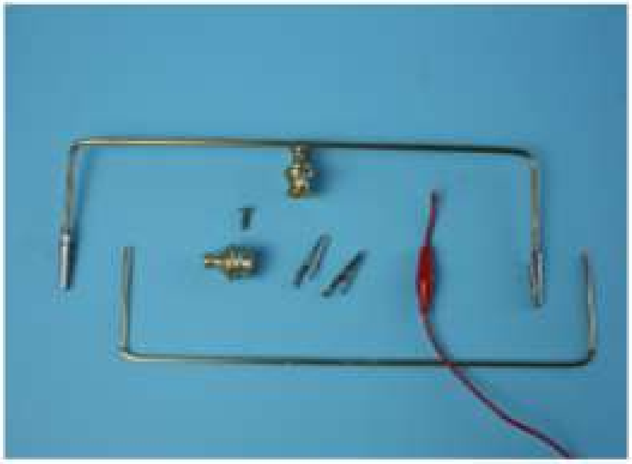
2. The balls for the discharge electrodes come from some more lamp finials, cut them off just below the ball with a hacksaw. These balls are about ½" in diameter.

wimshurst-discharge-ball-solder-prep.jpg

3. Solder the discharge balls to the electrodes; fill the hole with solder so it makes a smooth transition to the rod.

Note: do not solder the small ball nuts in place!

Fabricate the neutralizing brushes:



wimshurst-neutralizer-bar-parts.jpg

The neutralizing brushes are made with more brazing rod, alligator clips salvaged from a pair of clip-leads, and yet another type of lamp finial.

Bend the brush support:

wimshurst-neutralizer-bend.jpg

1. Cut a length of brazing rod 14" long and mark it 2" from either end.

2. Make (2) 90 degree bends in the rod at the 2" marks.

Solder the brush support to the brush boss:

wimshurst-neutralizer-hub.jpg

1. Drill a hole for a set screw in the base of the finial and tap with the #6-32 tap.

2. File a groove in the top of the lamp finials, these particular finals have a 3/8" threaded hole in the bottom and a small hole in the top. I think they are made for ceiling fixtures that have a center pull string.

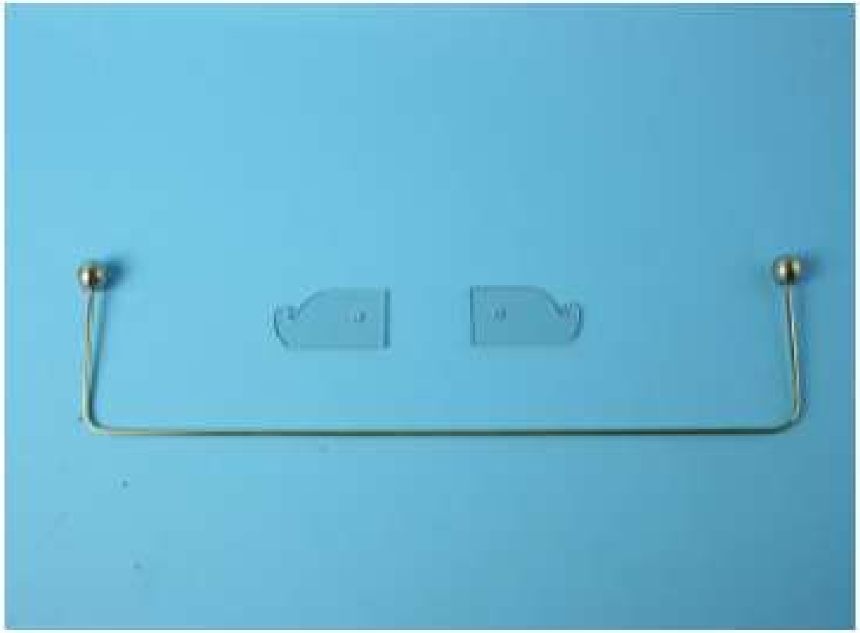
3. Center the neutralizer bar on the finial and prop it so its parallel to the workbench top and solder it in place.

Attach the brush clips to the support:

wimshurst-neutralizer-clip.jpg

1. Crimp the alligator clips on to the ends of the neutralizer bar and solder.

Fabricate the Leyden jar shunt:



wimshurst-layden-shunt.jpg

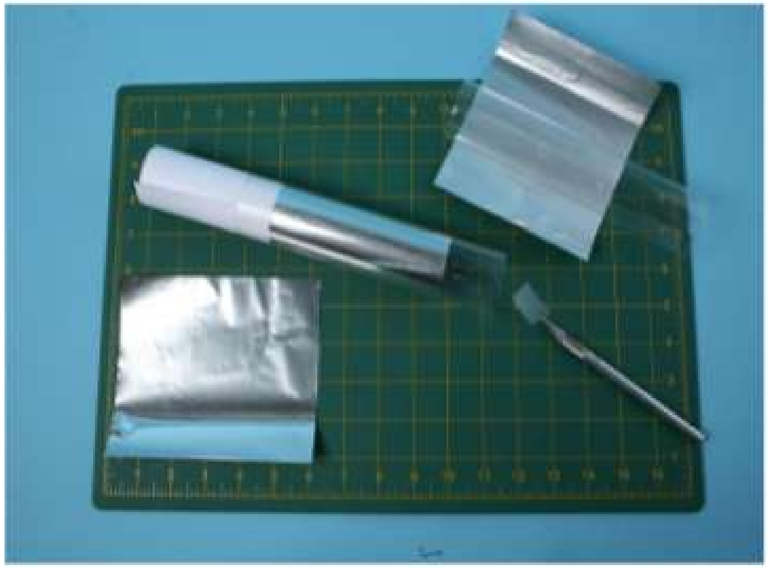
1. Cut a 22" length of brazing rod.
2. Make 90-degree bends, 3 ½" in from each end.
3. Solder two brass balls to the end. These are the large brass lamp chain pull balls, smaller finial balls or cabinet knobs would work here, too. If you use knobs be sure to remove any lacquer finish.

Cut the Leyden jar body:

wimshurst-layden-cut-tube.jpg

1. Using the miter box and fine tooth hacksaw, cut two 7 1/2" lengths from the fluorescent lamp protector sleeve.

Cut and affix the inner plate:



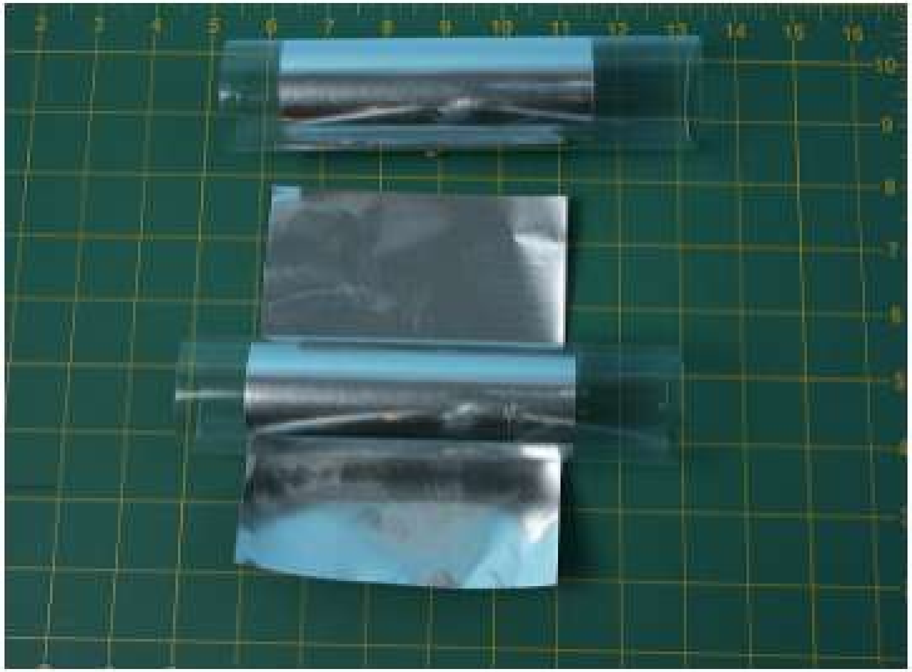
wimshurst-layden-plate-inner.jpg

1. Cut (4) 5" by 6" sheets of heavy duty aluminum foil.

2. Form one sheet by wrapping it around the tube and then rolling it so it can be inserted. Roll along the 6" axis so the foil cylinder ends up being 5" high.

3. Insert the foil into the tube so that it is 1" from one end. Use a couple of rolled up sheets of paper to hold the foil firmly against the inside of the tube while you tape it in place. The tighter you can make it to the inside of the tube the better.

Affix the outer plate:



wimshurst-layden-plate-outer.jpg

1. Wrap another piece of aluminum foil around the outside and tape it in place. Again, the tighter the better, but don't wrinkle the foil.

Make the bases:

wimshurst-layden-plate-bottom.jpg

1. Snap the tube ends onto the opening that is 1" from the foil

2. Make the Leyden jar bases from a pair of plastic closet pole mounts. Drill out the center hole to 5/16".

Note: These are Stanley brand and I had to trim some reinforcing ribs off with an X-acto knife to make them slide into the tubes.

Mount the disks and drive line:

wimshurst-axle-collars.jpg

1. Slide the disk axle into a support and put on a 5/16" set screw collar, an O-ring belt, the two disks, the other belt, and another collar.

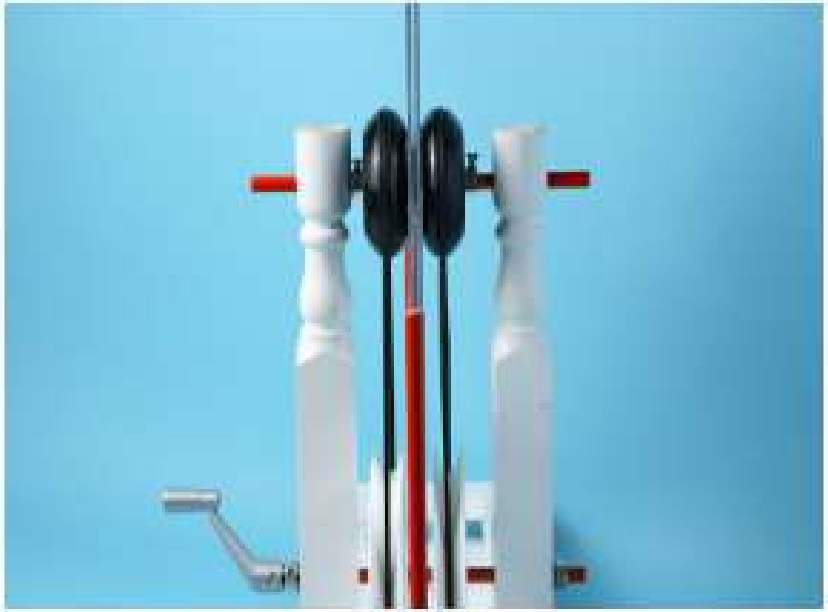
2. Attach the casement window crank to the drive shaft, insert the bushings in the supports if you are using them and slide the shaft through the pulleys. The pulleys should be a tight fit and you will have to twist the shaft back and forth to get it through. Don't forget about the belts hanging from the top shaft, one will need a twist so that the disks rotate in opposite directions. A collar goes on either end of the drive shaft.

3. Once both shafts are in place, stretch the belt around the pulleys. (In the picture, the belt with the twist is hidden behind the disk. What you are seeing is a reflection of the untwisted belt.)

Note: 5/16" set screw collars can be found at the hardware store but I made my own by drilling out a 5/16" nut and threading a #6-32 screw into the side.

Note: I found that my machine became difficult to turn once it was fully charged due to the electrostatic attraction of the disks. I cut a 2 ½" washer from a plastic milk jug and placed it on the shaft between the disks to remedy this problem.

Align the disk and collector supports:



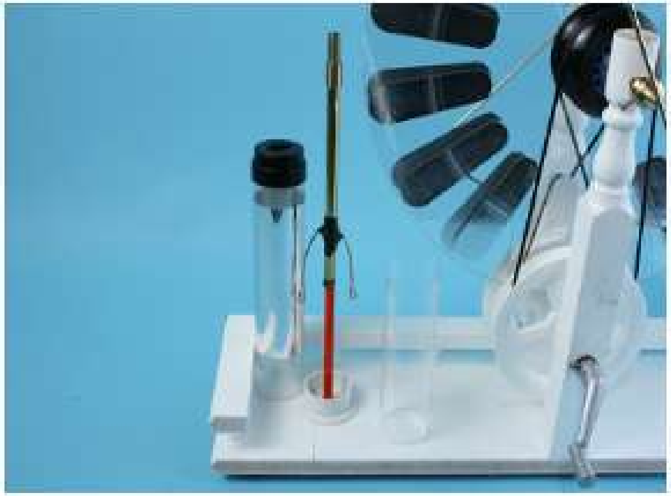
wimshurst-lineup-collectors.jpg

1. Cut two 11" lengths of fiberglass rod and press them into the holes made earlier in the base.

2. Loosen the screws that hold the two supports to the base and slide them around to adjust the disks so they line up with the charge collector supports.

3. Re-tighten the supports.

Install the Leyden jar base and inner plate contact:



wimshurst-layden-contact-inner.jpg

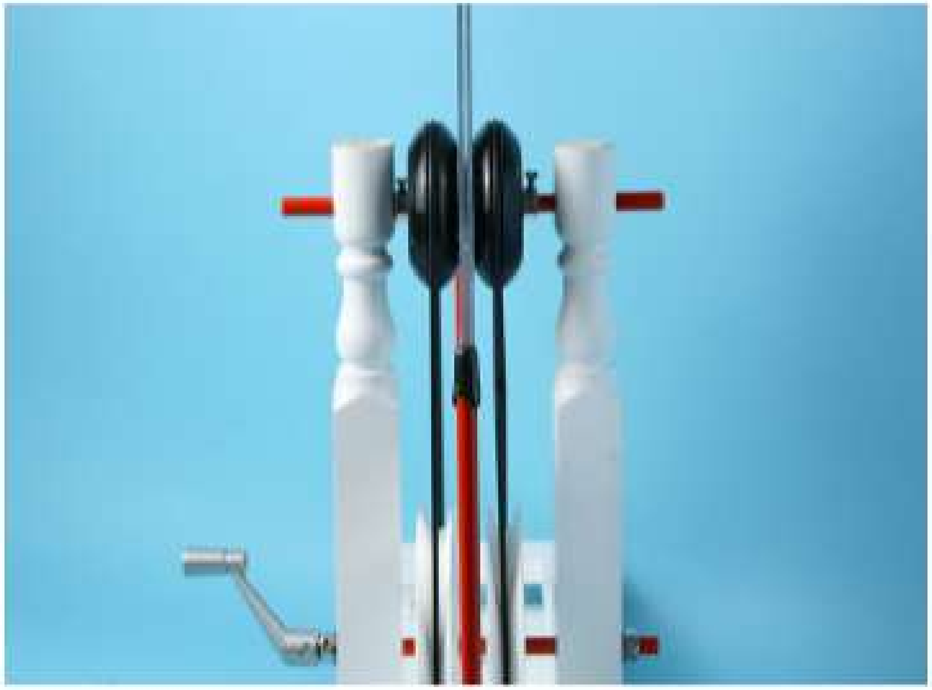
1. Slide the Leyden jar bases onto the fiberglass charge collector supports.

2. Slide the charge collector assembly over the fiberglass supports.

3. Using about 6" of 14 AWG solid copper wire, form the inner plate contact. Wrap it once around the brass tube and form two loops in the ends.

4. Using a scrap of the plastic tube as a guide, adjust the inner plate contacts so they apply even and gentle pressure. You want good contact with the foil but you don't want to rip the foil when you install the Leyden jars.

Epoxy the charge collector assembly in place:



wimshurst-collector-epoxy.jpg

1. Apply epoxy to the end of the rod and slide the brass charge collector assembly down onto the fiber glass support rod.

2. Set aside while the epoxy cures.

Install Leyden jar and assemble collector:

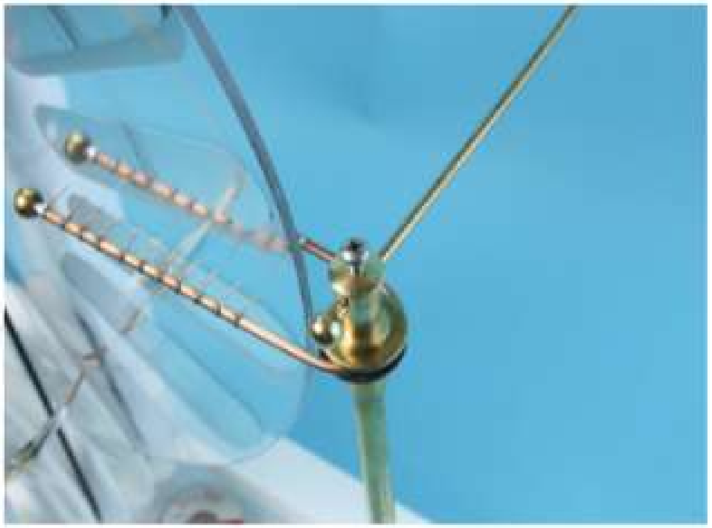
wimshurst-layden-complete.jpg

1. Slide the Leyden jar onto its base, being careful not to tear the foil as makes contact.

2. Line up the charge collector comb and trim the prongs. Test spin the disks to see if there is any wobble and trim the prongs to come as close as possible to the disks without touching.

3. Assemble the charge collectors.

Install discharge electrode:



wimshurst-collector-inplace-2.jpg

1. Insert the discharge electrodes into the lamp finial on the charge collector and tighten the screw to hold it in place.

2. The finial should be tight enough to hold the collector comb but allow the discharge electrode to move back and forth. If it's too tight, or not tight enough, the support rod can be twisted in the base to accommodate.

3. Wrap a small bit of tape around the end of the electrode and screw on one of the small ball nuts; this will prevent charge from bleeding off the sharp end.

Install neutralizing brushes:

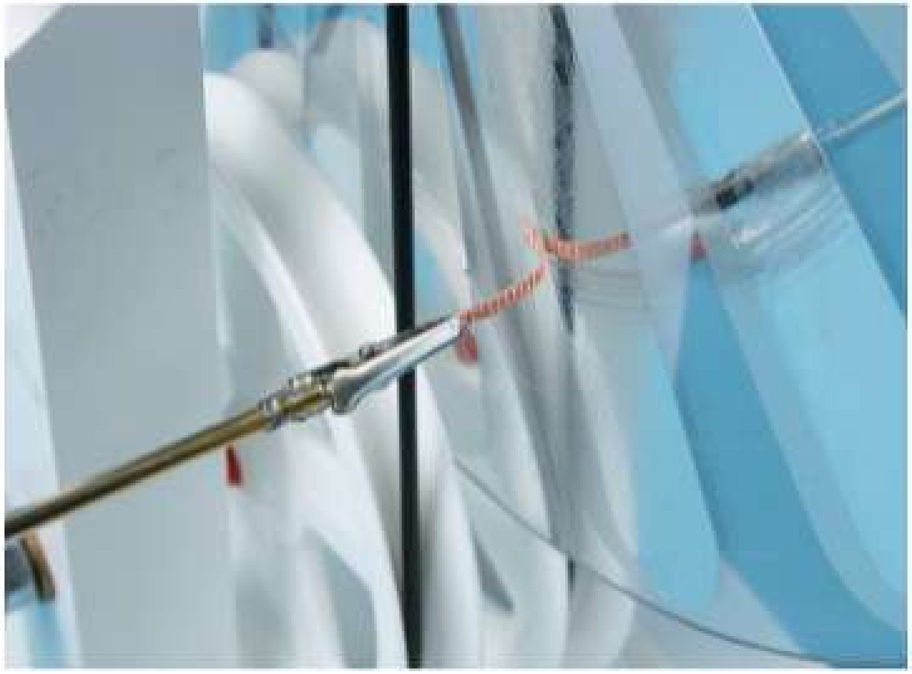
wimshurst-neutralizer.jpg

1. Slide the neutralizing bars onto the upper shaft and adjust them to be about 45 degrees from the collector combs.

2. Sectors should pass through a charge collector, encounter a neutralizing bar after about 1/6 of a rotation, and then encounter the other charge collector after a further 1/3 of a rotation.

3. Tighten the set screw to secure.

Position brushes:



wimshurst-neutralizer-brush.jpg

1. Clip (2) 1 ½" lengths of Solder Wick™ to the ends of the neutralizing rods so they make good contact with the disk.

Mount the Leyden jar shunt and add optional finials:

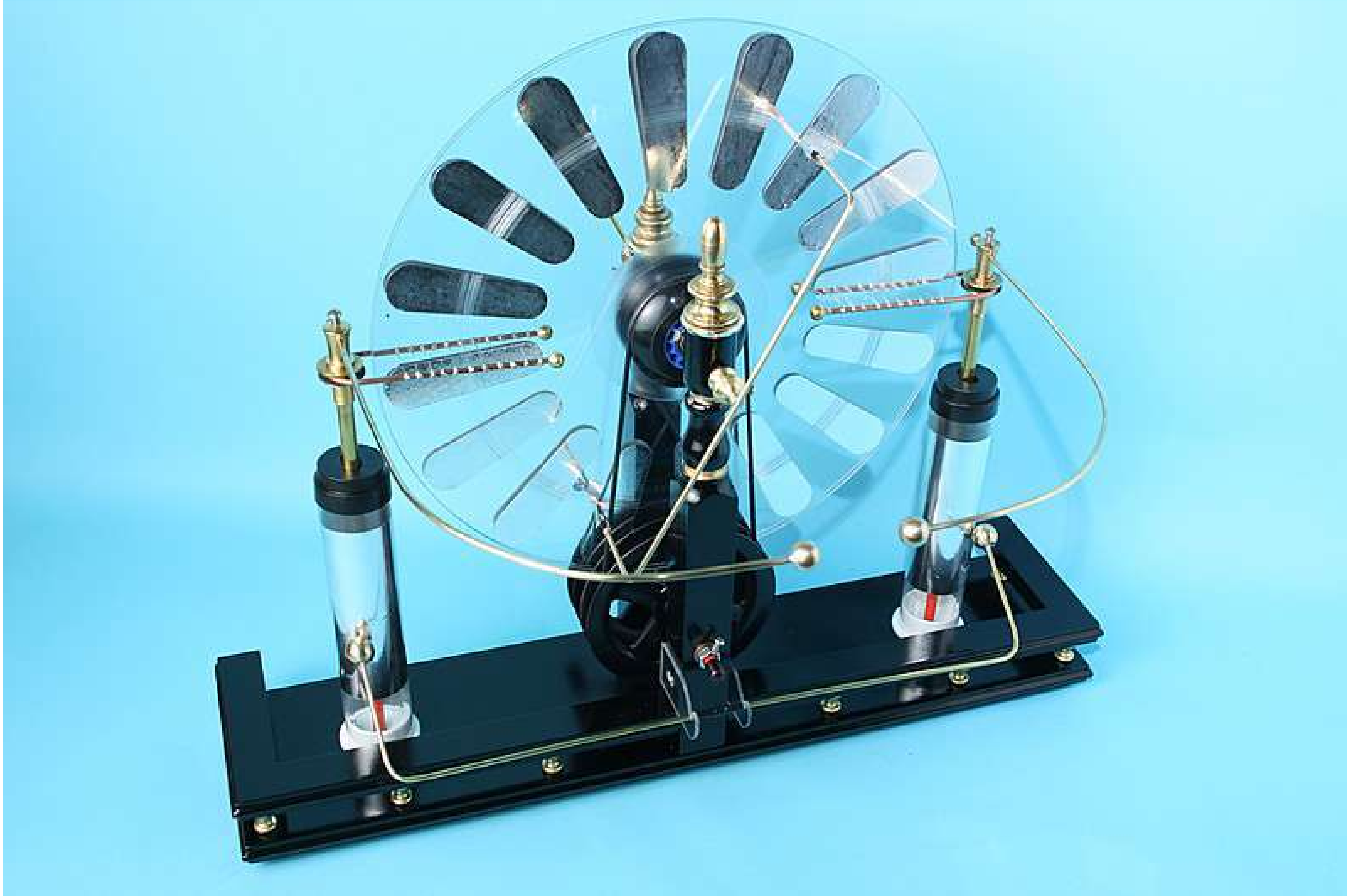
wimshurst-complete-front.jpg

1. Use small brass wood screws to attach the (2) acrylic brackets to the front disk support, leave them a little loose at first.

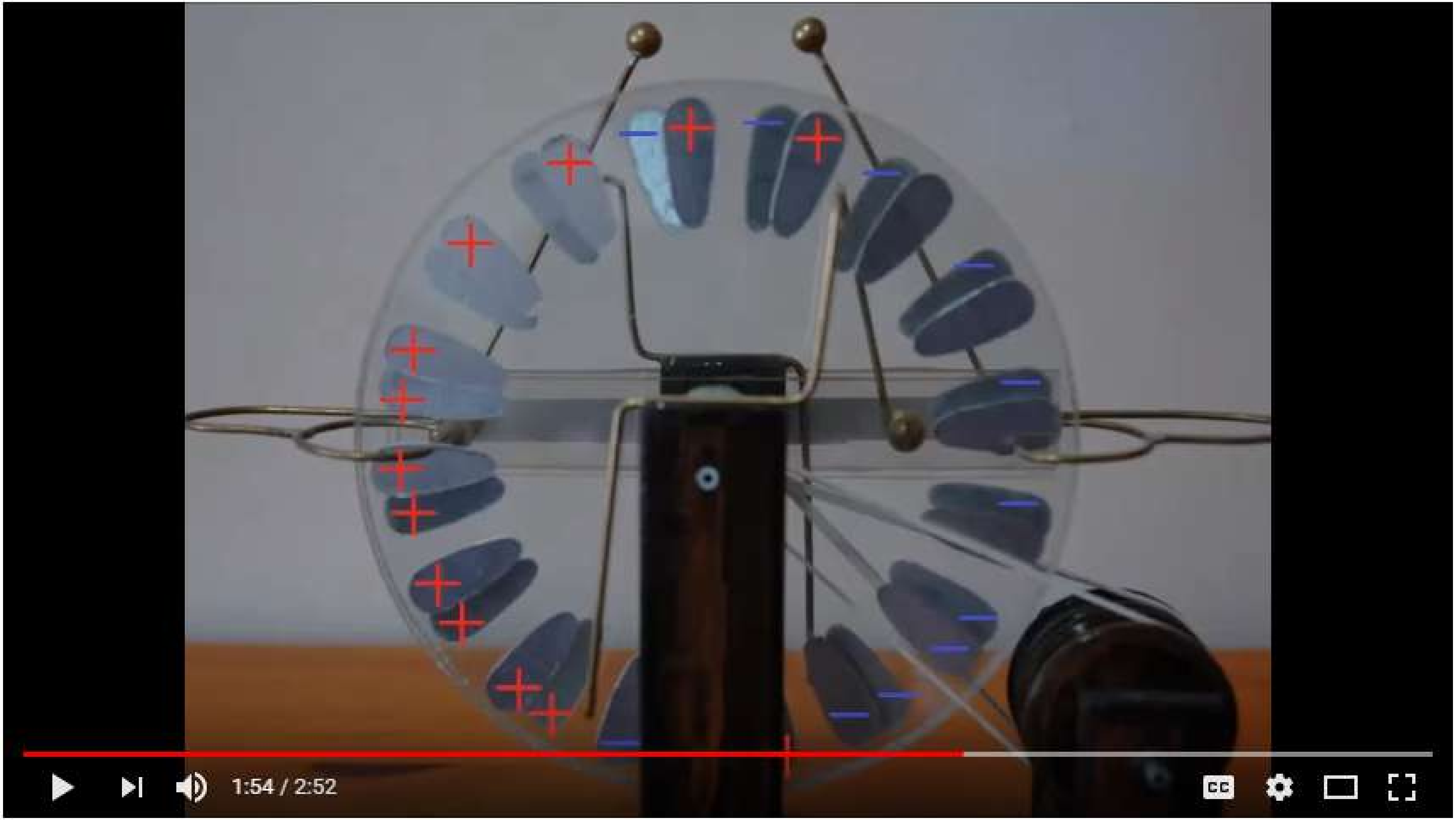
2. Place the Leyden jar shunt in the brackets and line them up so the balls on the shunt lean comfortable against the Leyden jars.

3. Tighten the brackets.

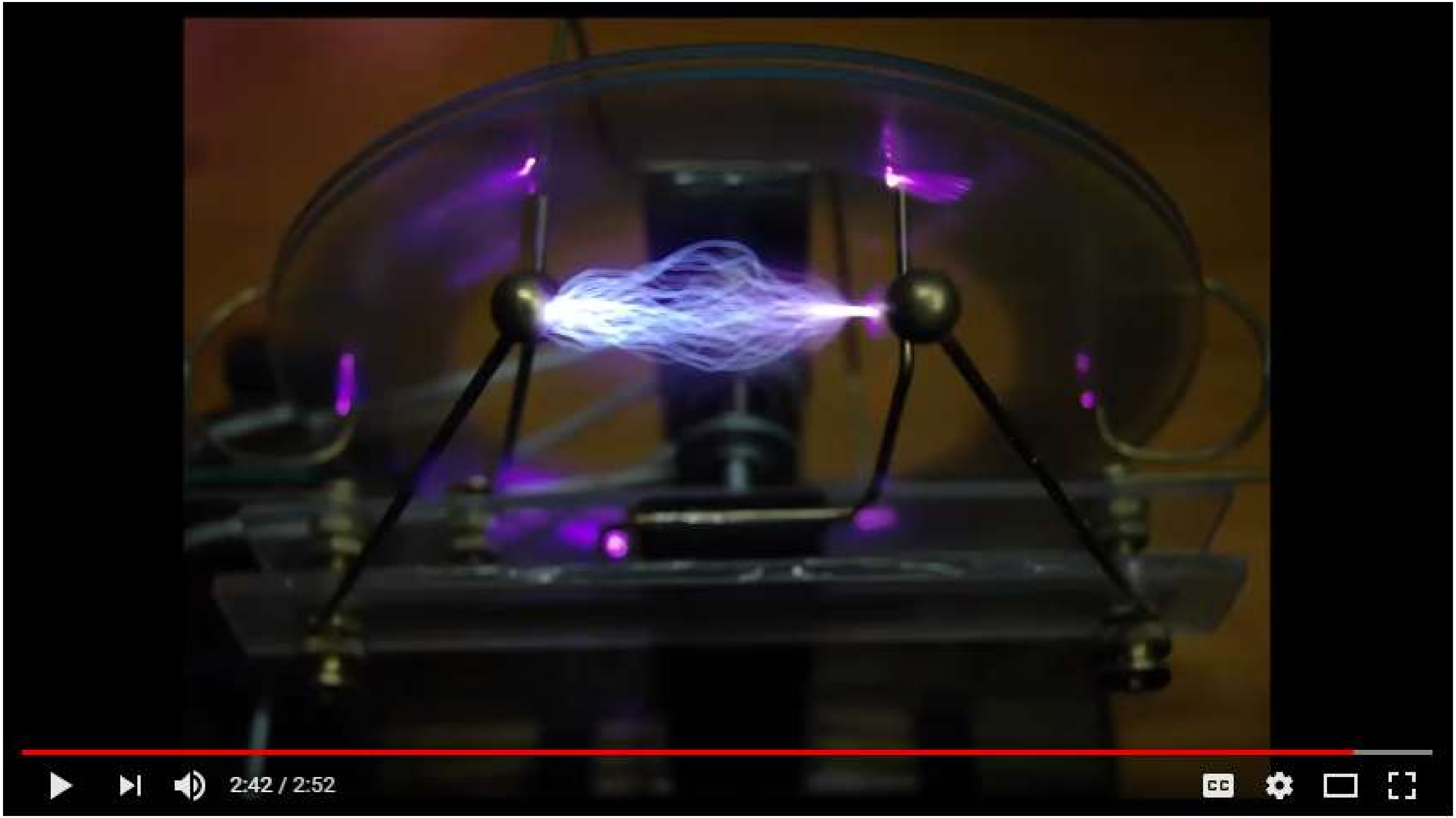
The two tops of the disk supports looked a little bare to me so I raided my junk box for more lamp parts and came up with these decorative finials. The wealth of finial and cabinet knobs at the typical home center means that there are infinite



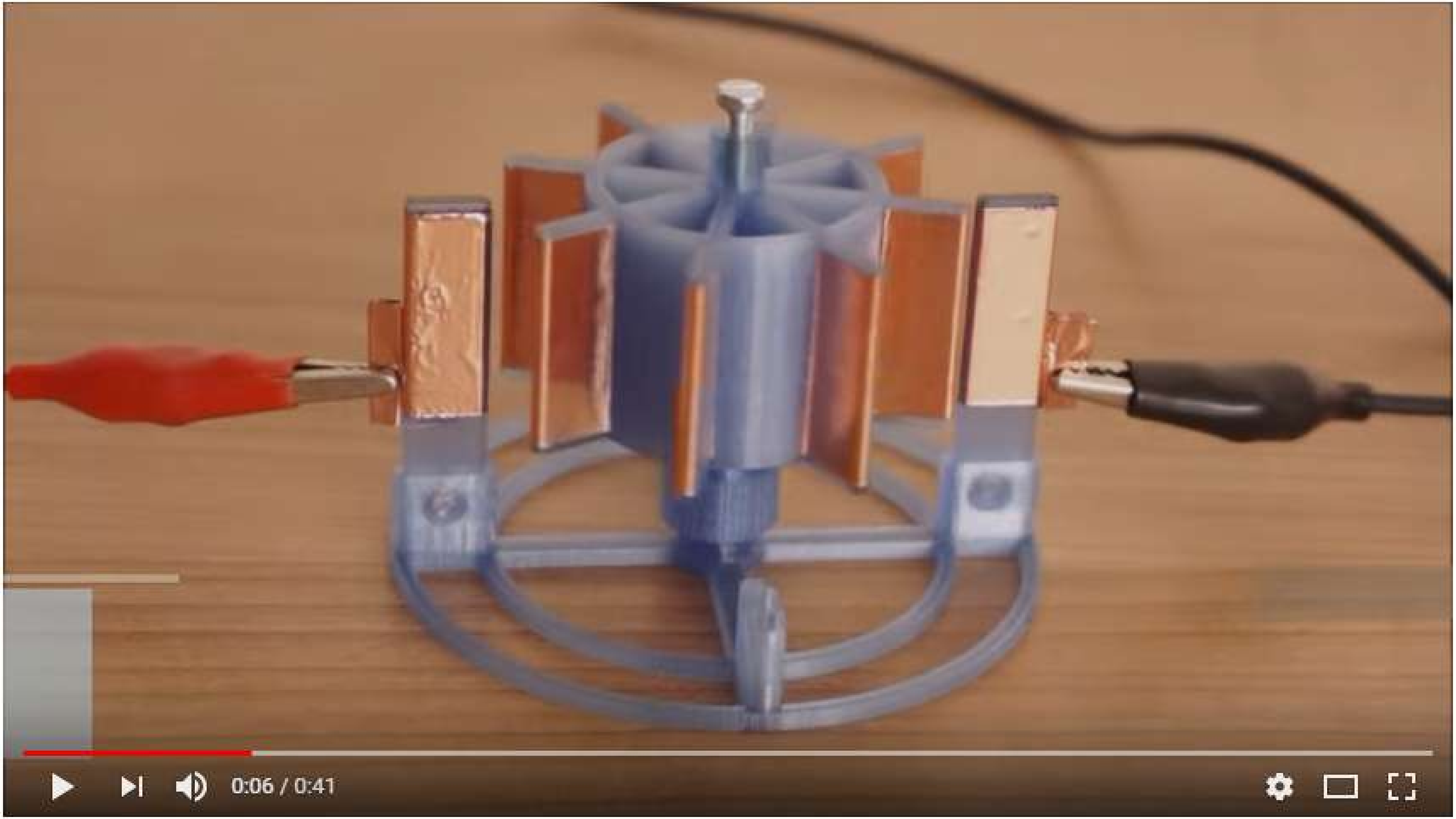
Attaching a small ball to the positive electrode will result in larger and more interesting sparks.
The small ball creates a plume of ionized air that helps the spark jump the gap.



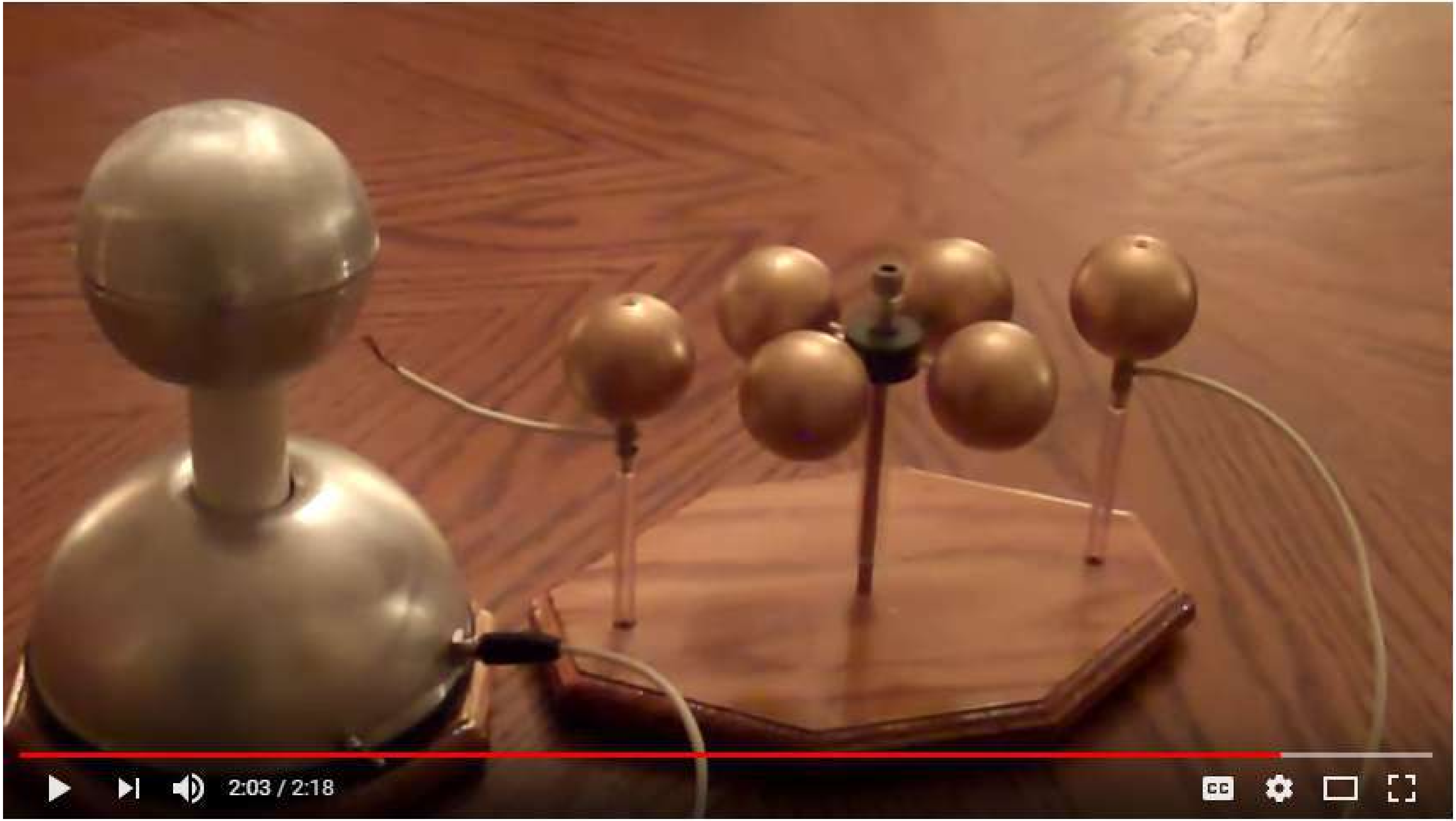
How the Wimshurst Works



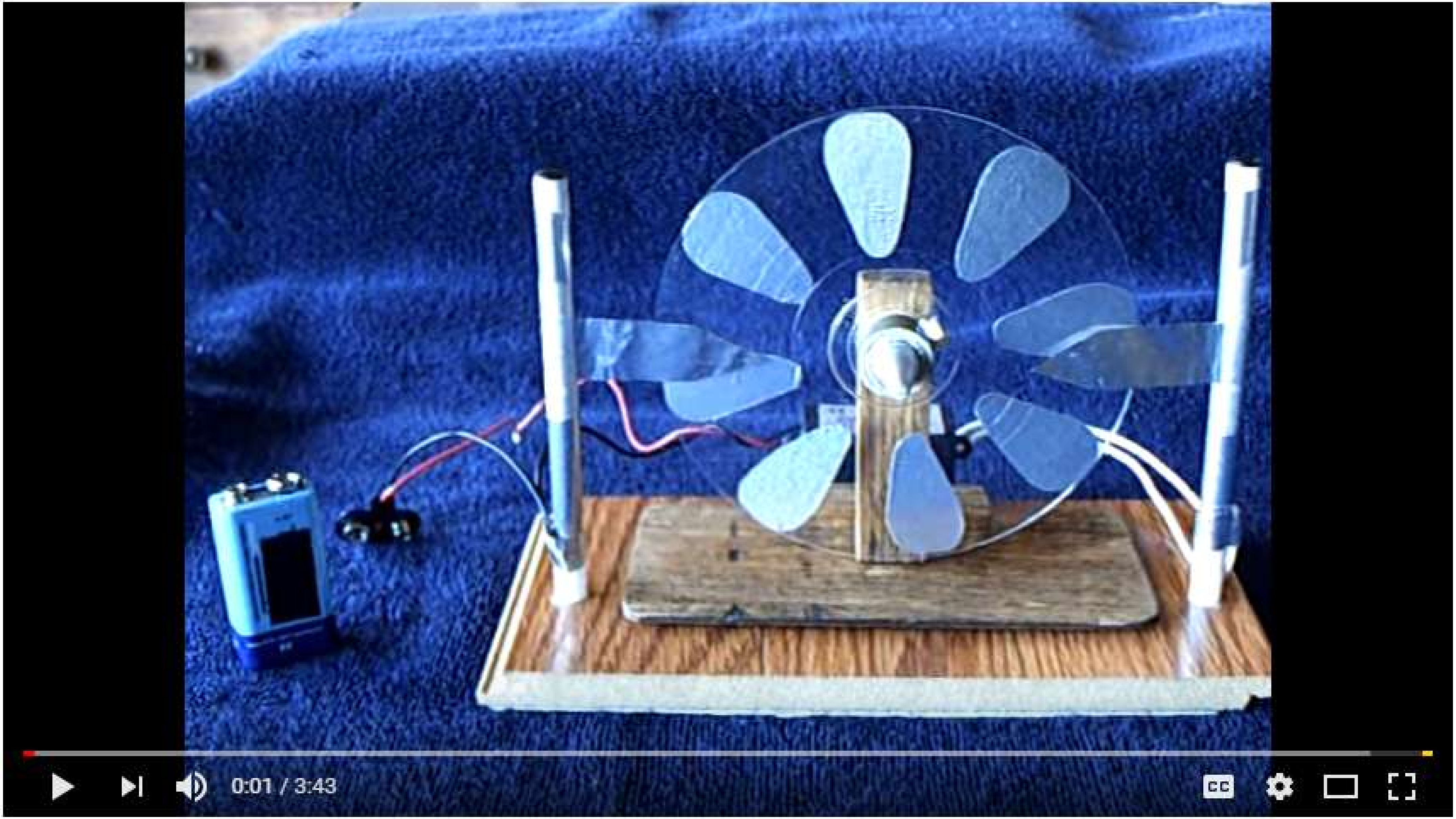
How the Wimshurst Works



Electrostatic Motor

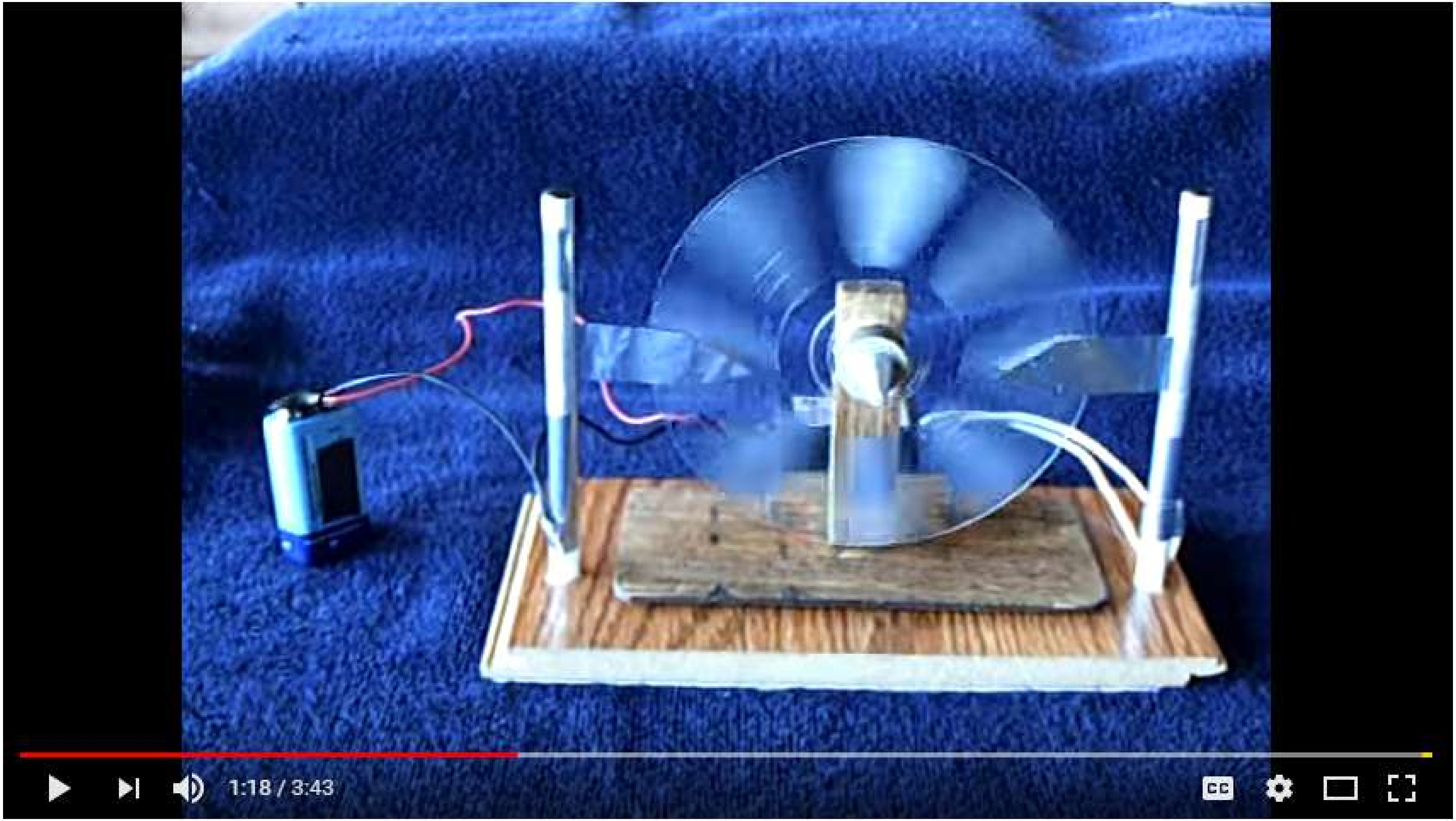


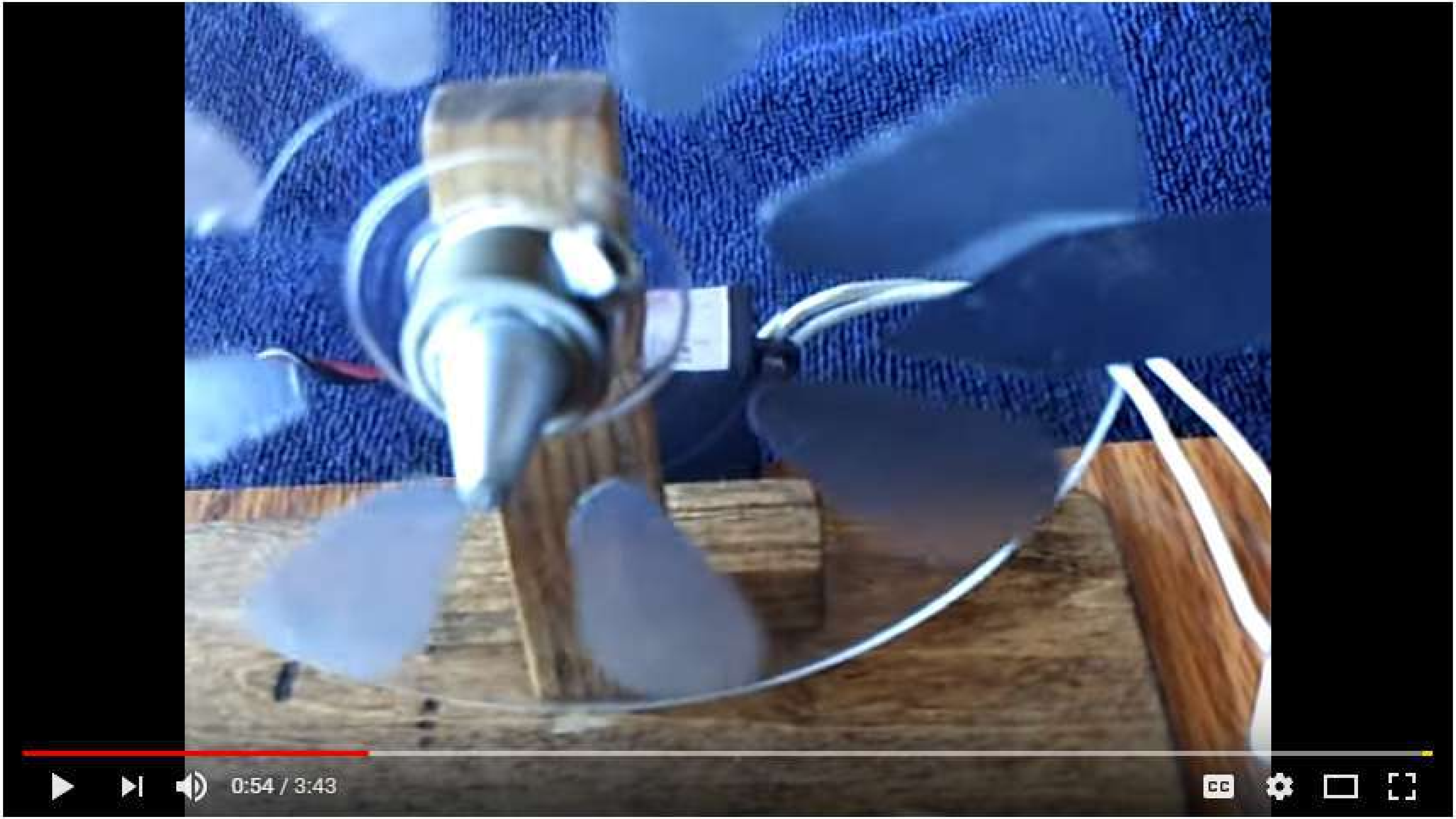
Home Made Electrostatic Motor

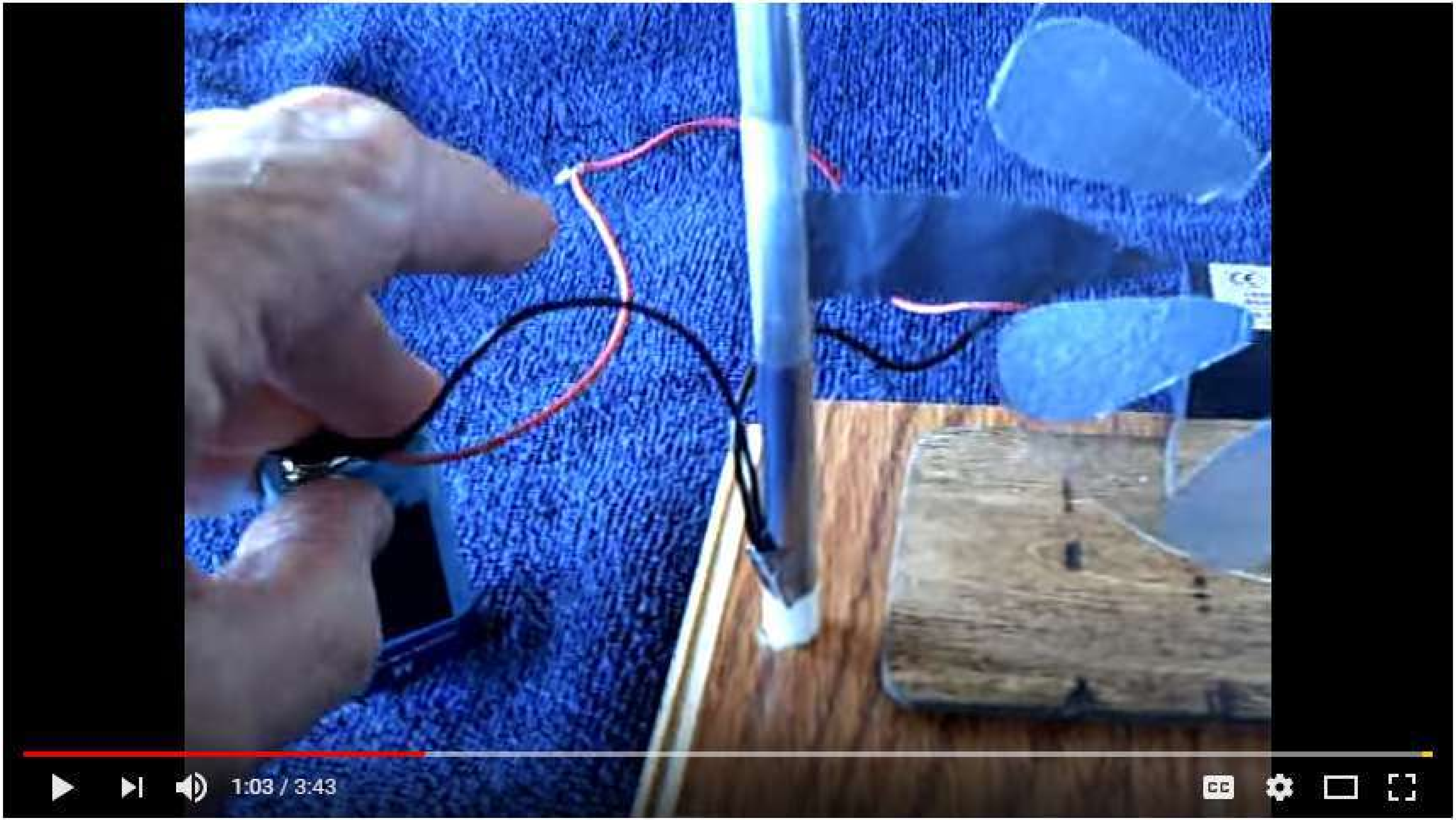


Clear Disk Electrostatic Motor

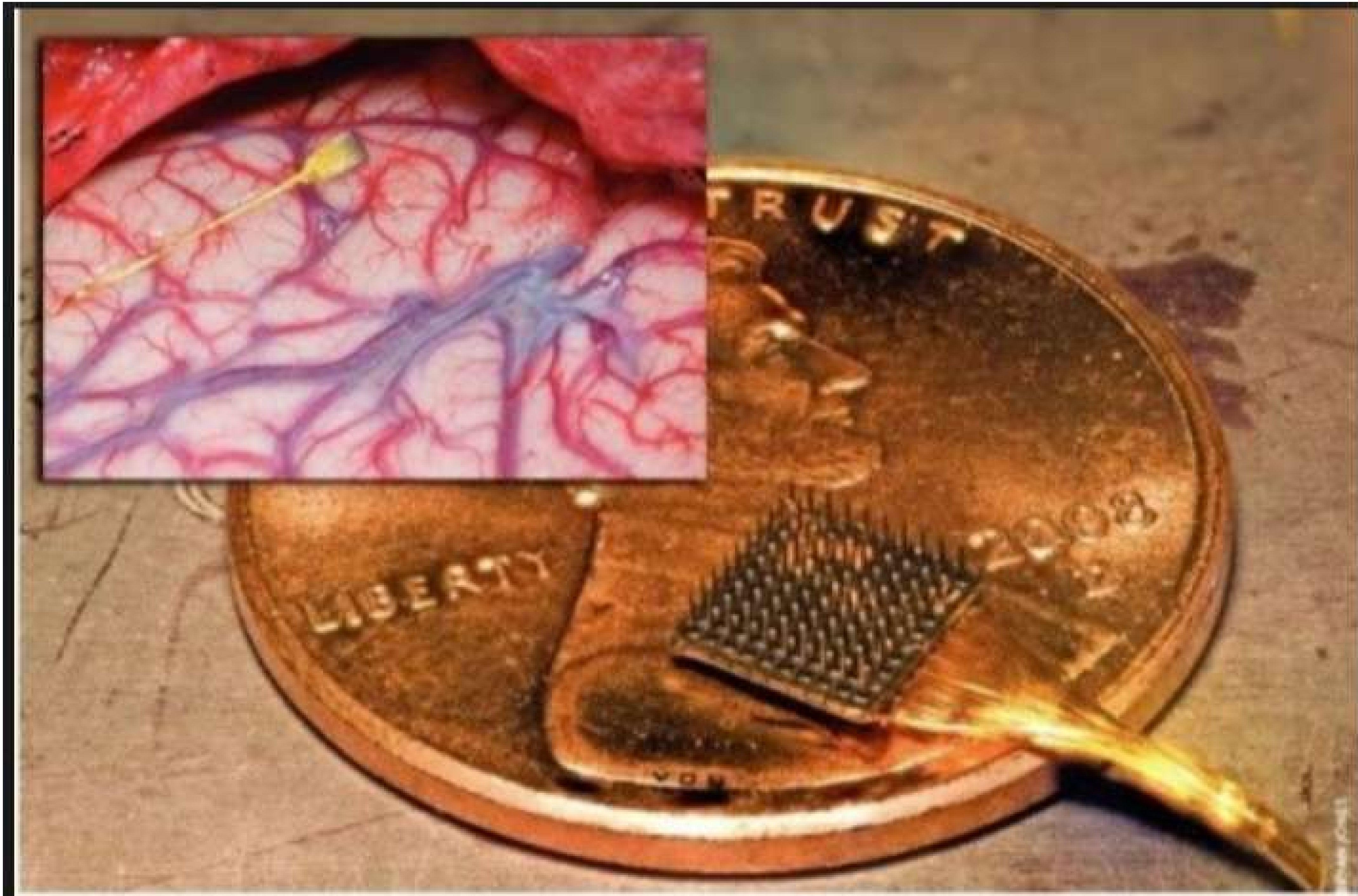

CE
2:57 / 3:43
CC


1:18 / 3:43

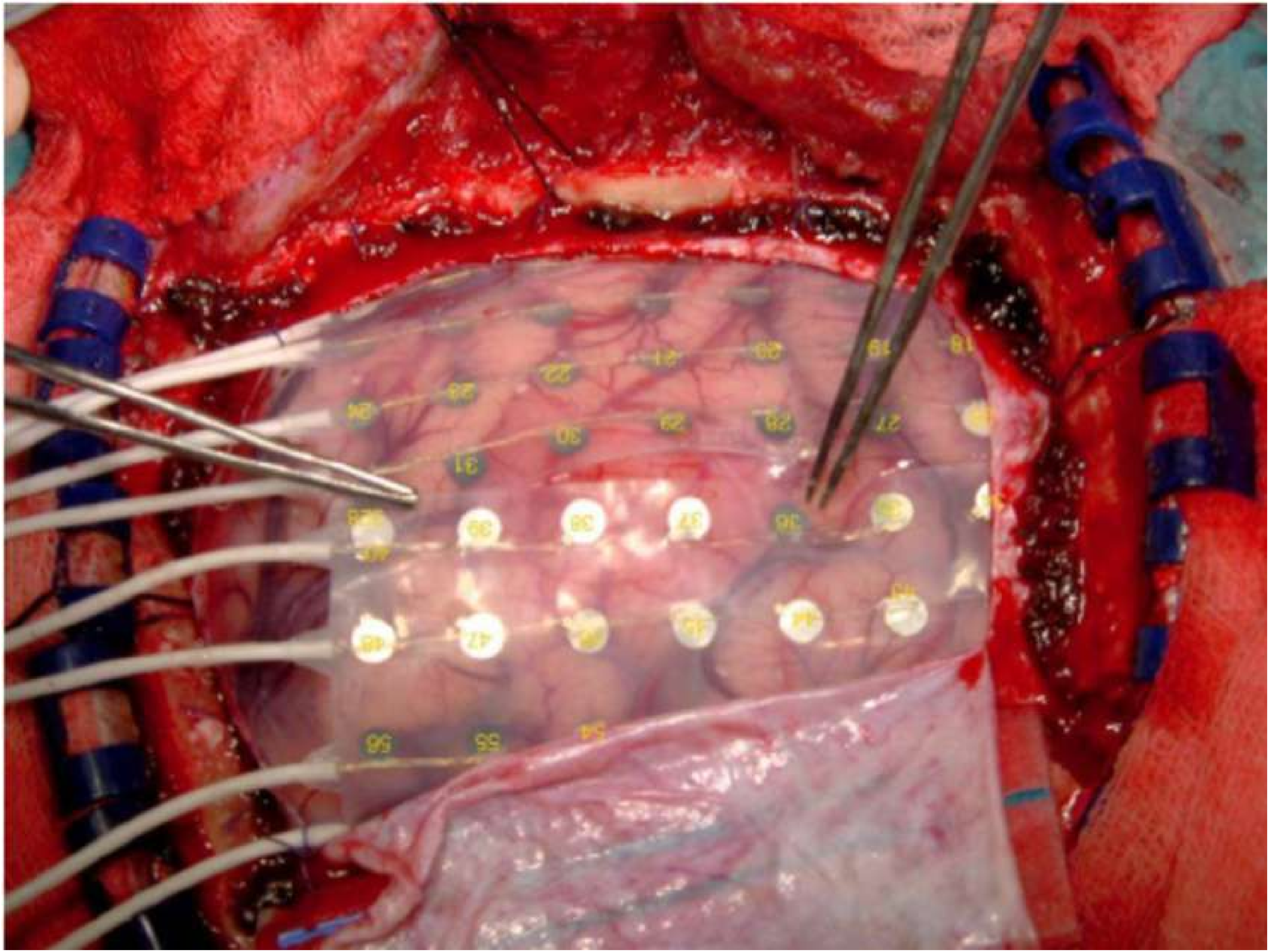

0:54 / 3:43

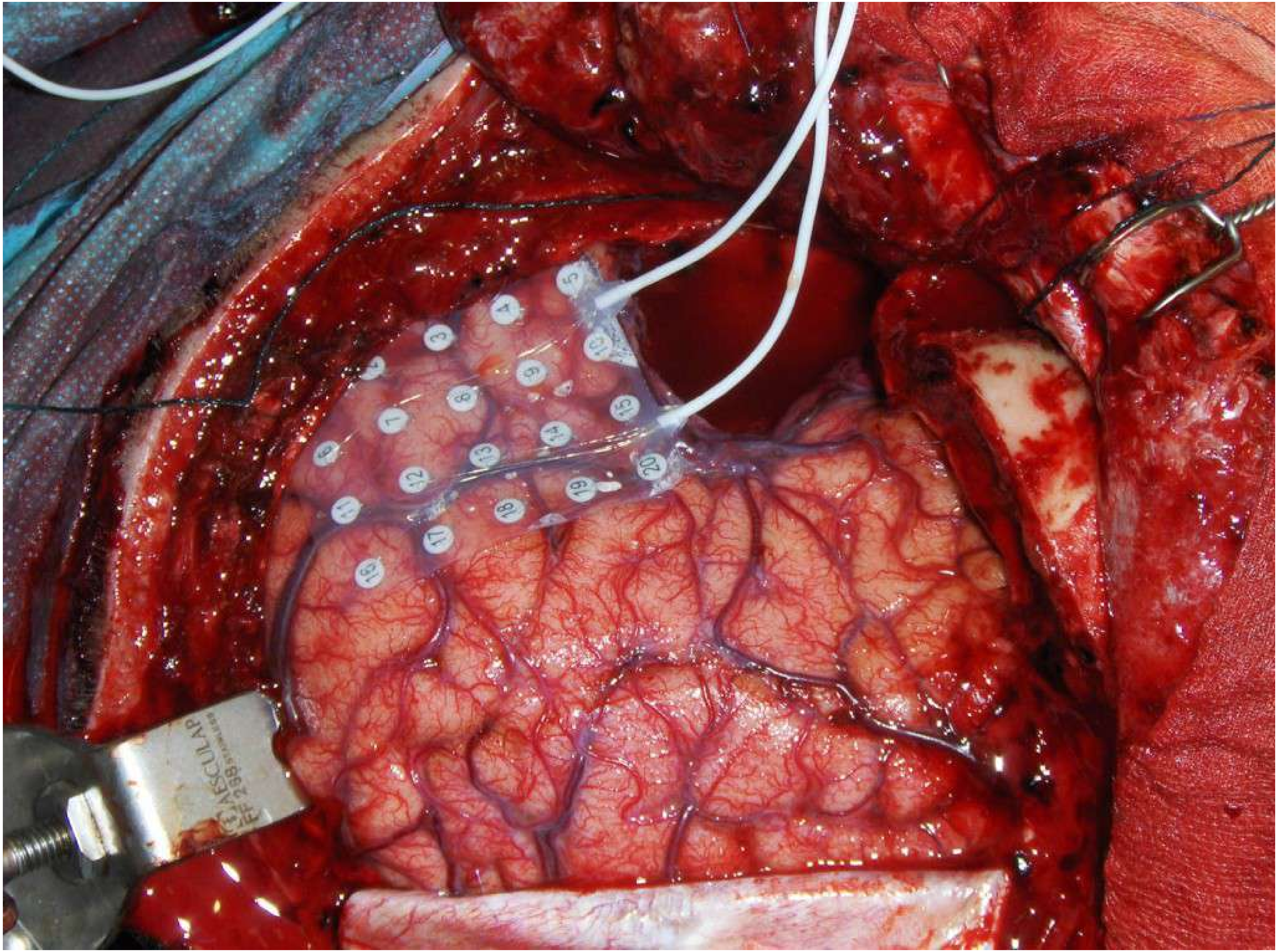

1:03 / 3:43


3:37 / 3:43
CC



Thought control: The Utah Electrode Array can be implanted on a human brain. For a podcast and more photos, go to CityWeekly.net.

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de
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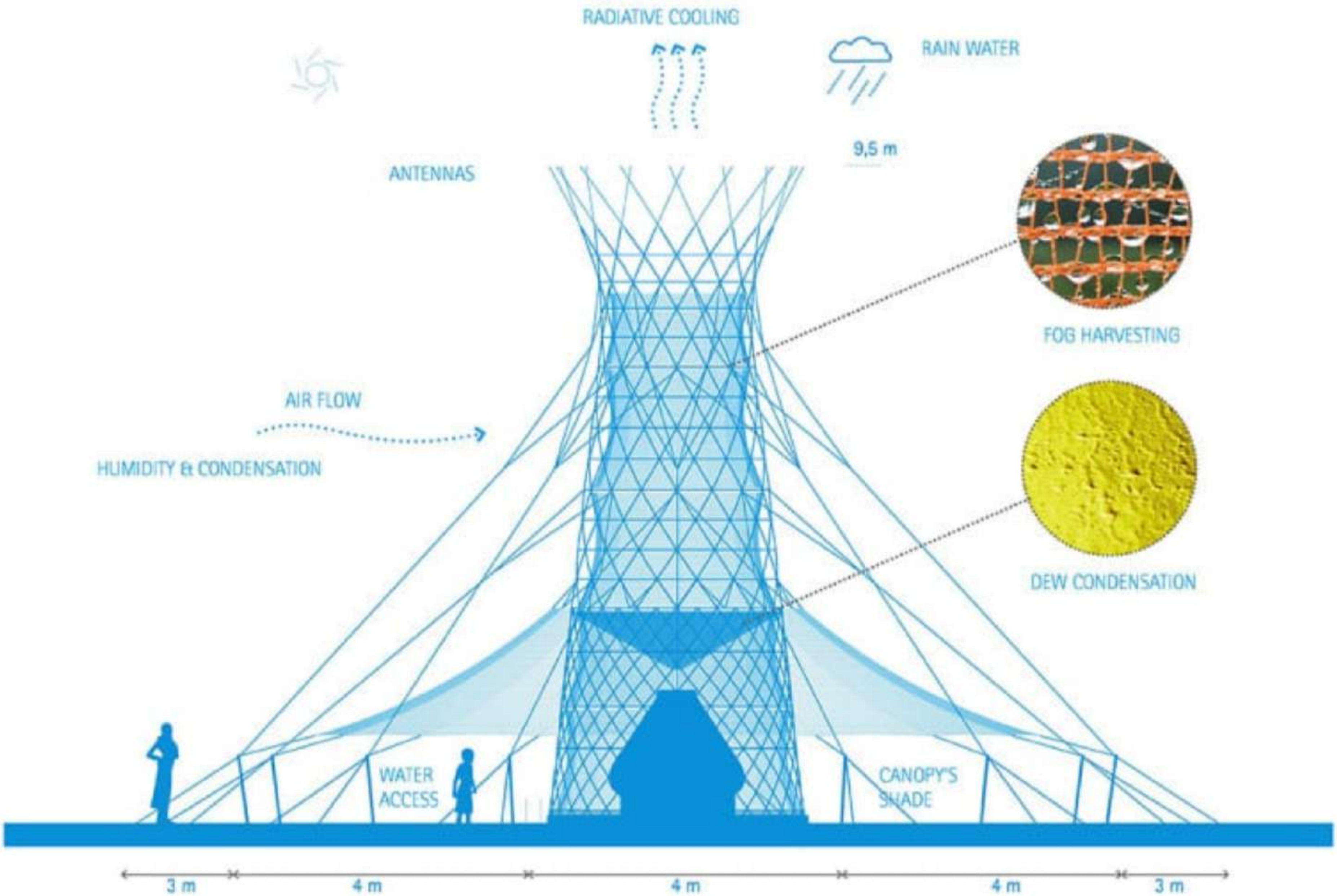
Subscribe
1:00 / 2:43
HD

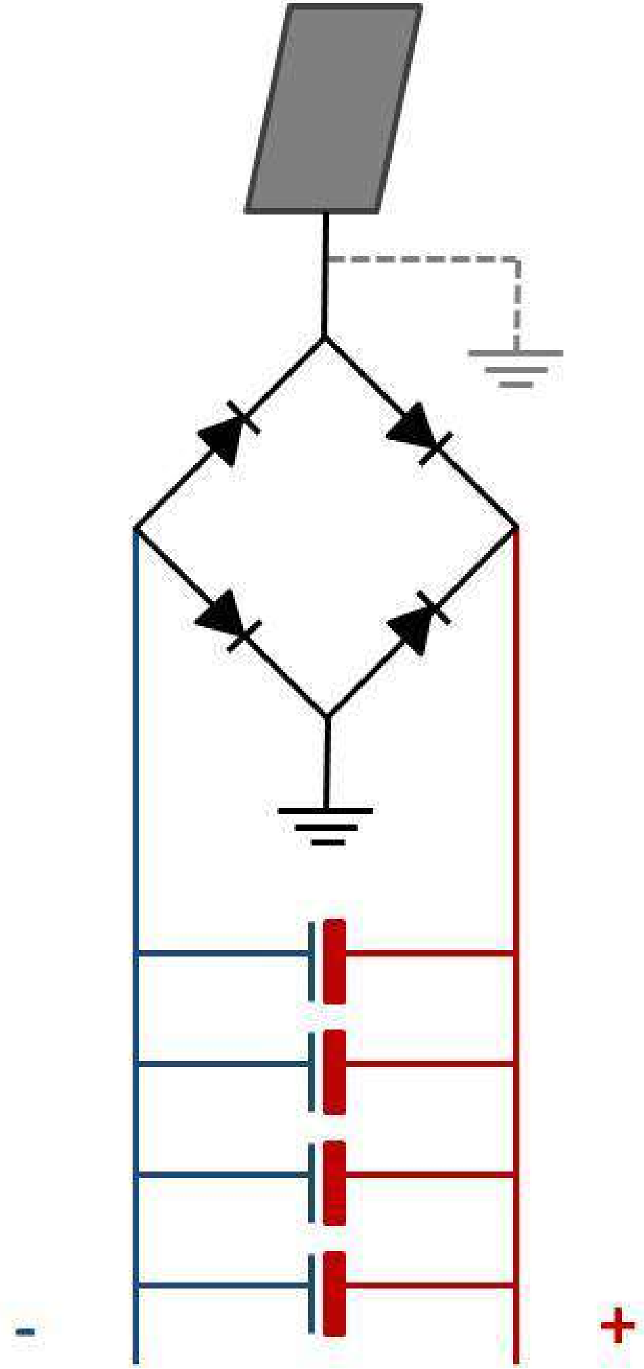

RADIATIVE COOLING
RAIN WATER
9,5 m
ANTENNAS
FOG HARVESTING
AIR FLOW
HUMIDITY & CONDENSATION
DEW CONDENSATION
WATER ACCESS
CANOPY'S SHADE
3 m
4 m
4 m
4 m
3 m

Warka Water


Subscribe
1:22 / 2:43

Warka Water towers harvest drinkable water from the air


de
zeen
Subscribe
1:23 / 2:43



Insulated, polished aluminium plate high up in air

An extra direct earth connection might help

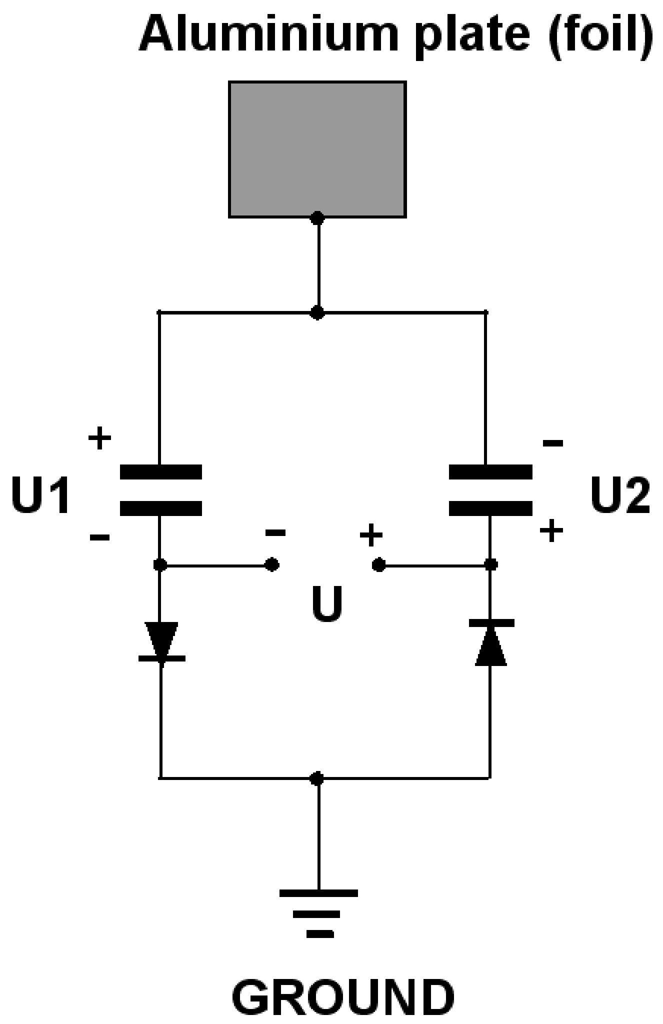
1N34a germanium diodes as full-wave bridge rectifier

4mm high load single core copper wire

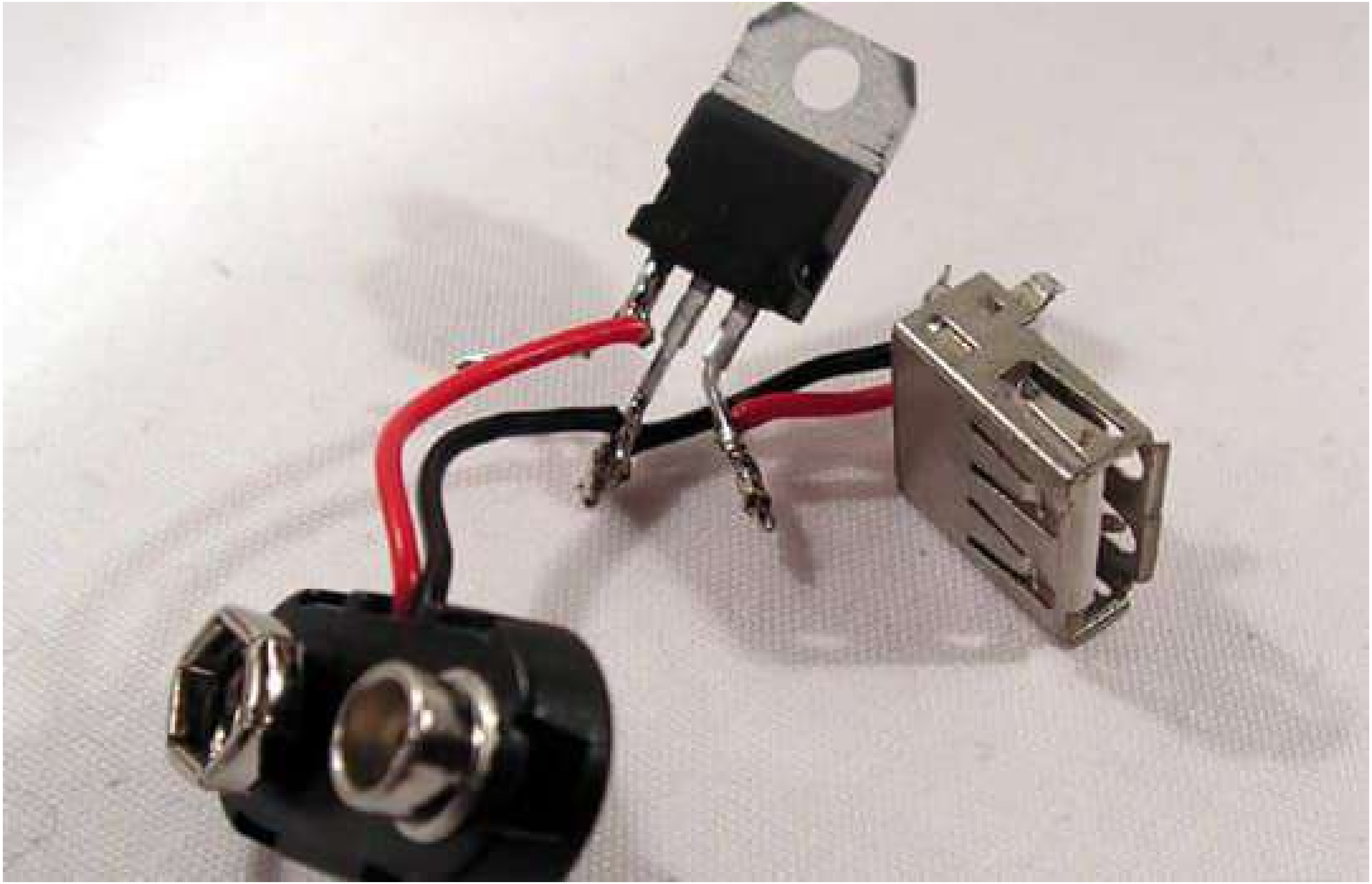
Earth is copper pipe 2 metres deep in moist soil

100uF 50V electrolytic capacitors in parallel

IMPROVEMENT OF RECEIVER:



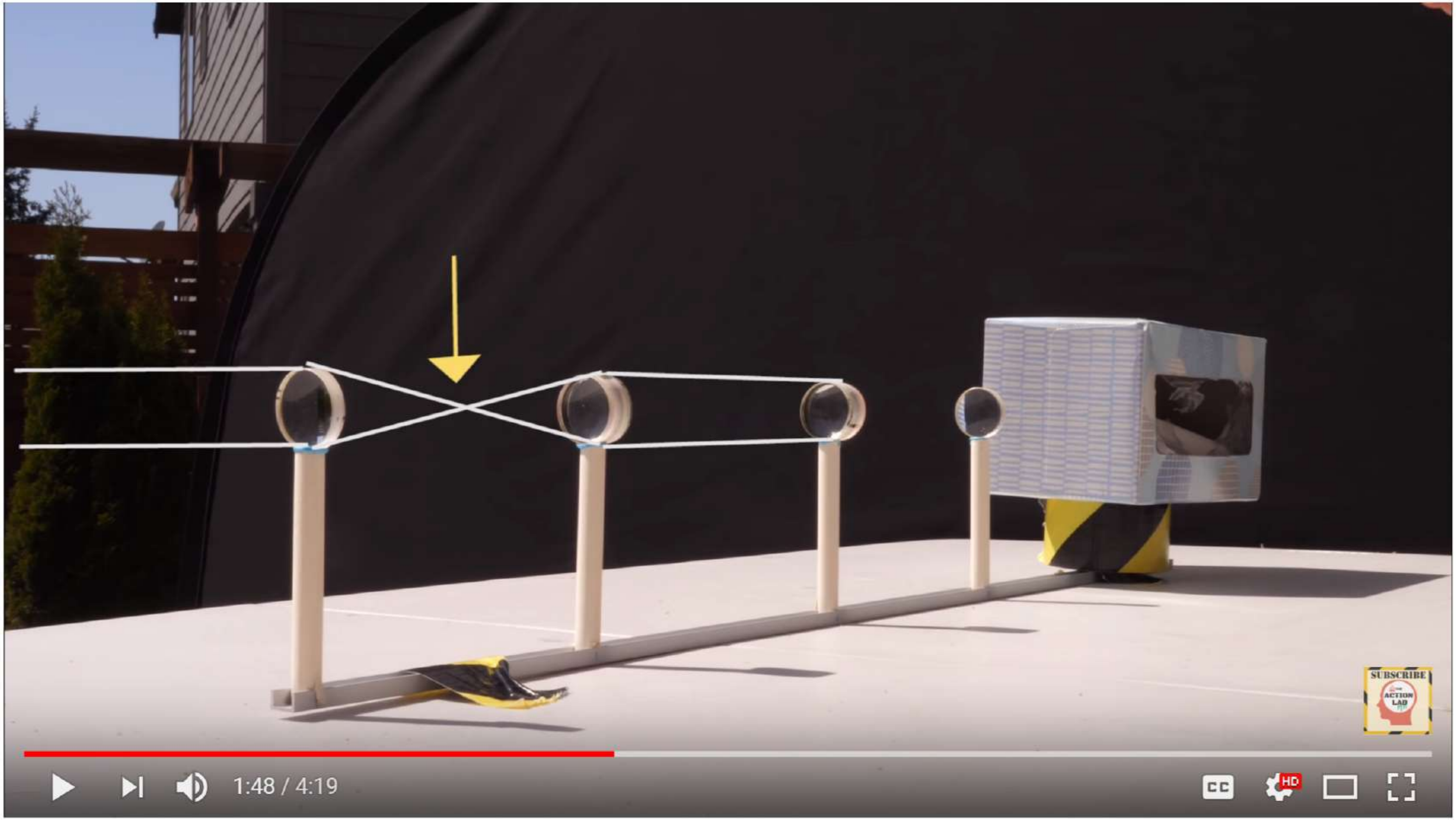
U = U1 + U2



Make Water Appear Frozen In Time Using Sound


24 Hz sound
makes water appear "frozen"
2:35 / 7:34


f1=24.0 Hz
f2=23.0 Hz


SUBSCRIBE
ACTION
LAB
1:48 / 4:19
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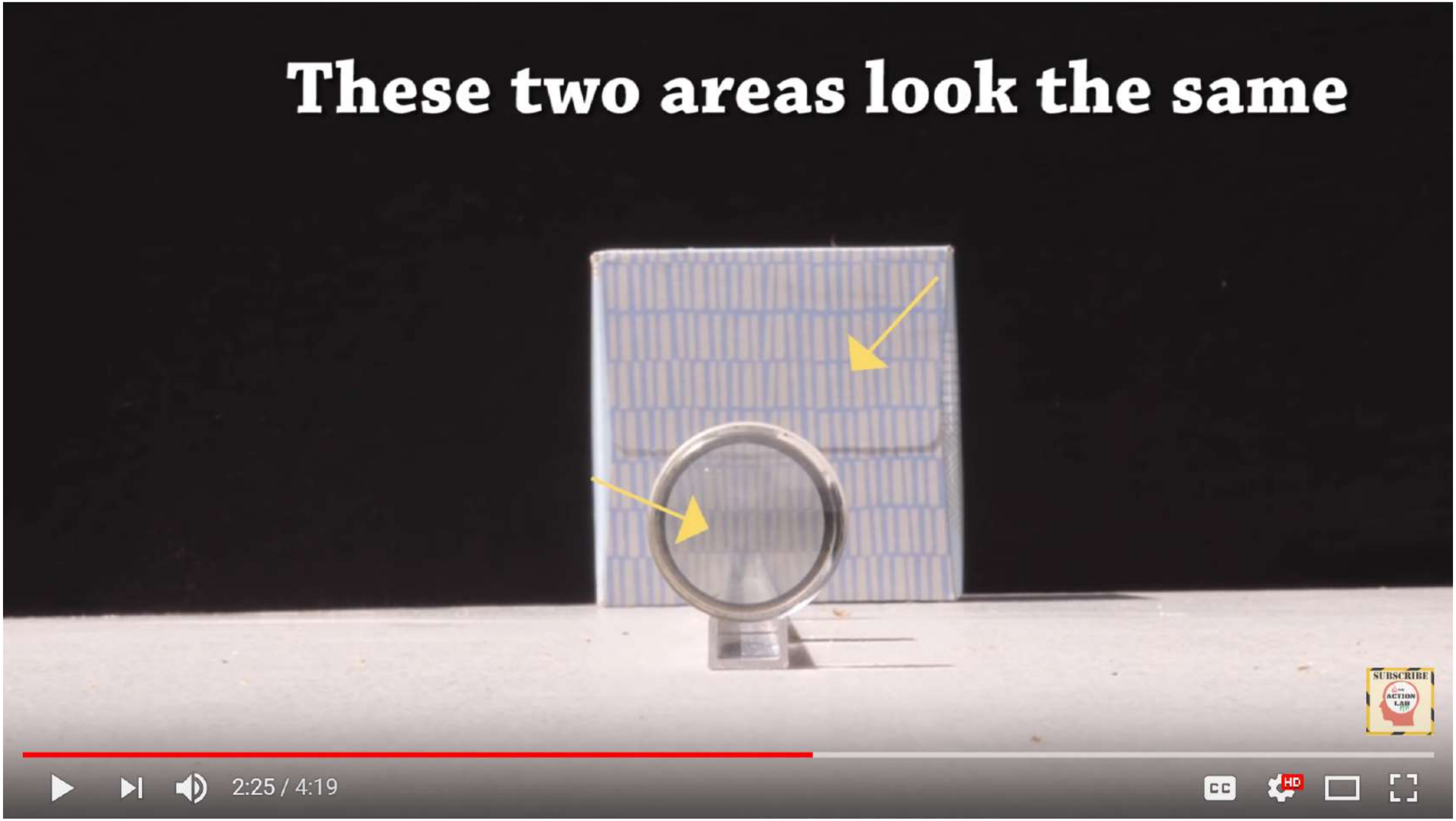
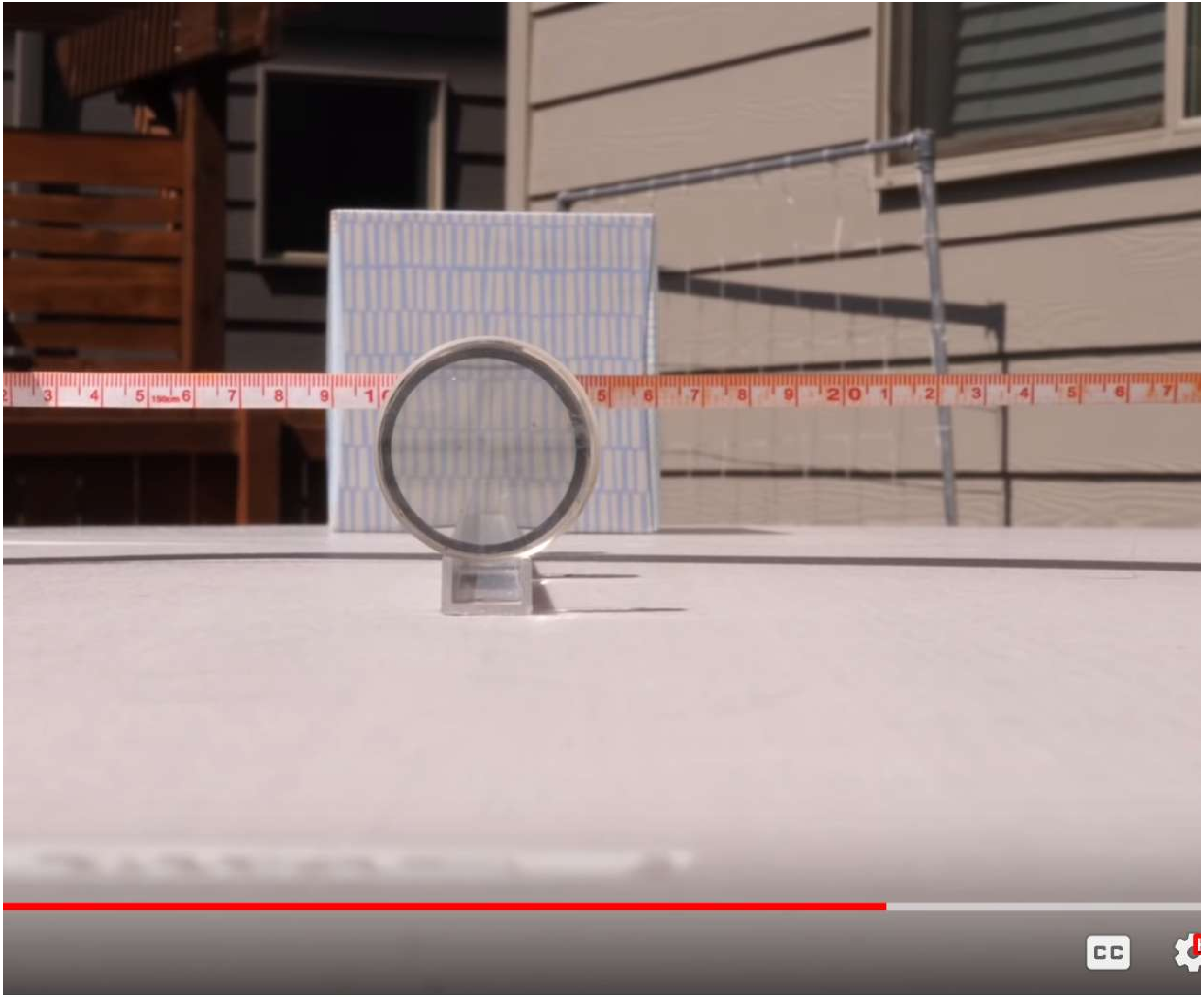
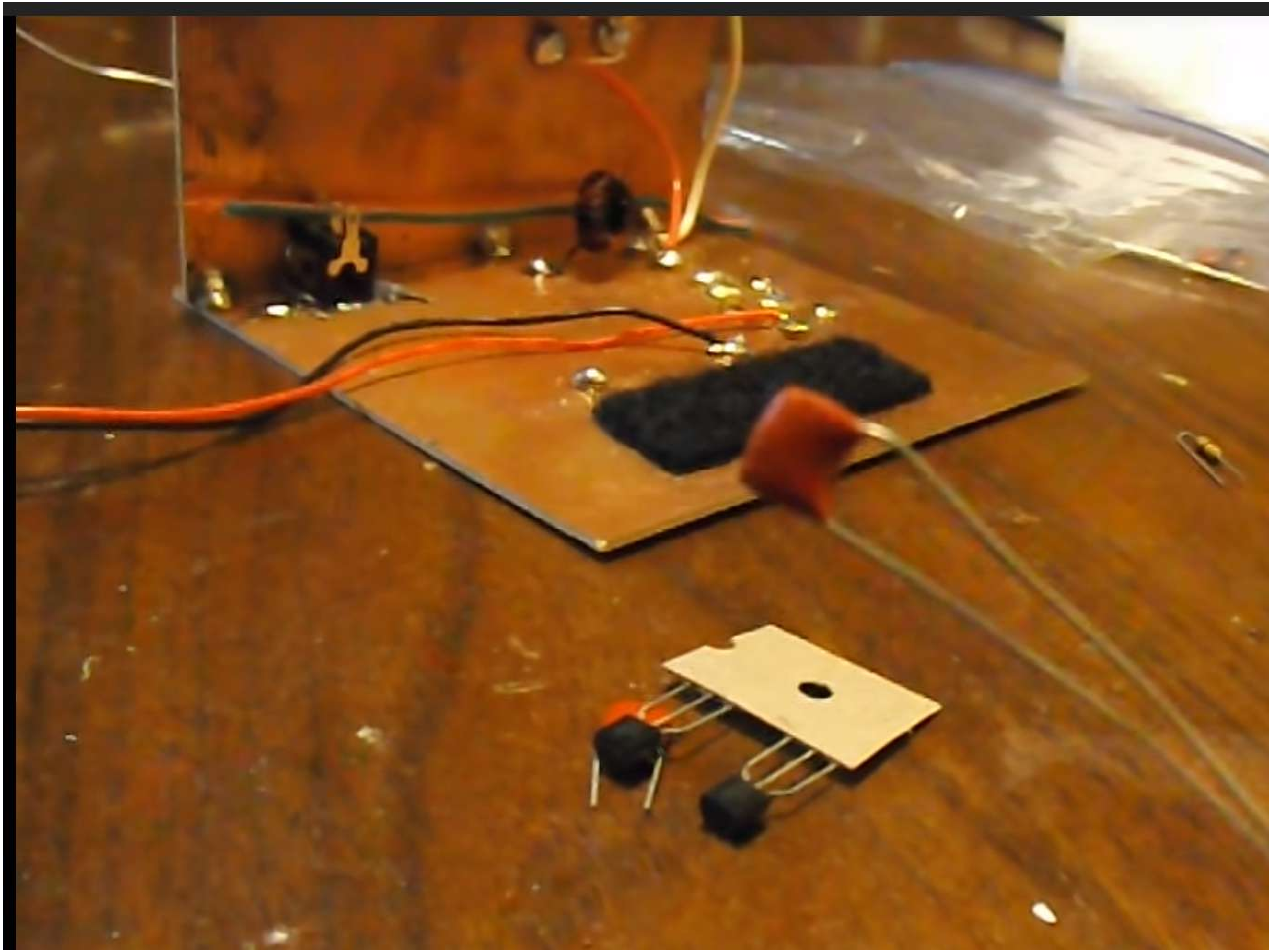
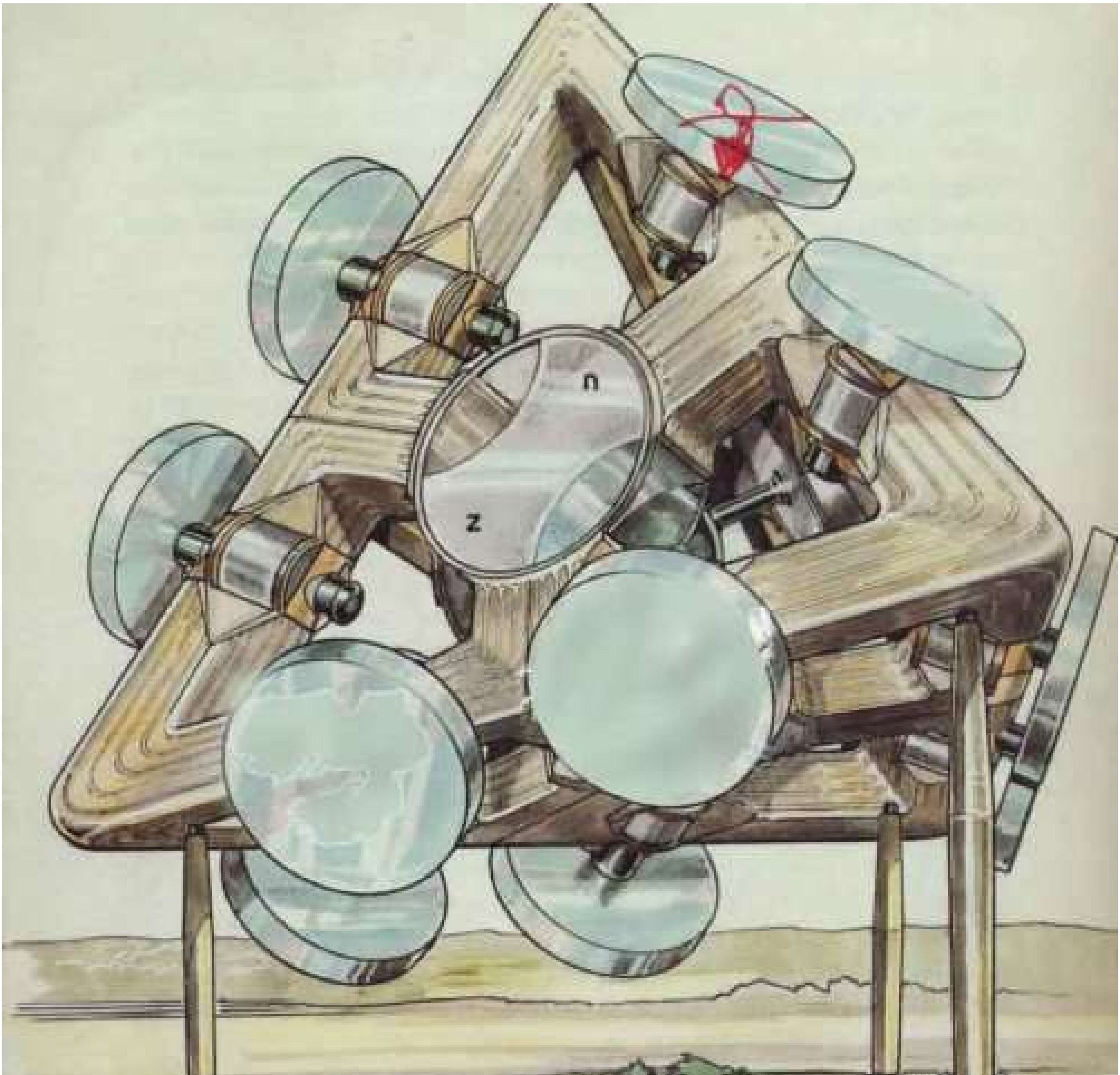

These two areas look the same
SUBSCRIBE
2:25 / 4:19



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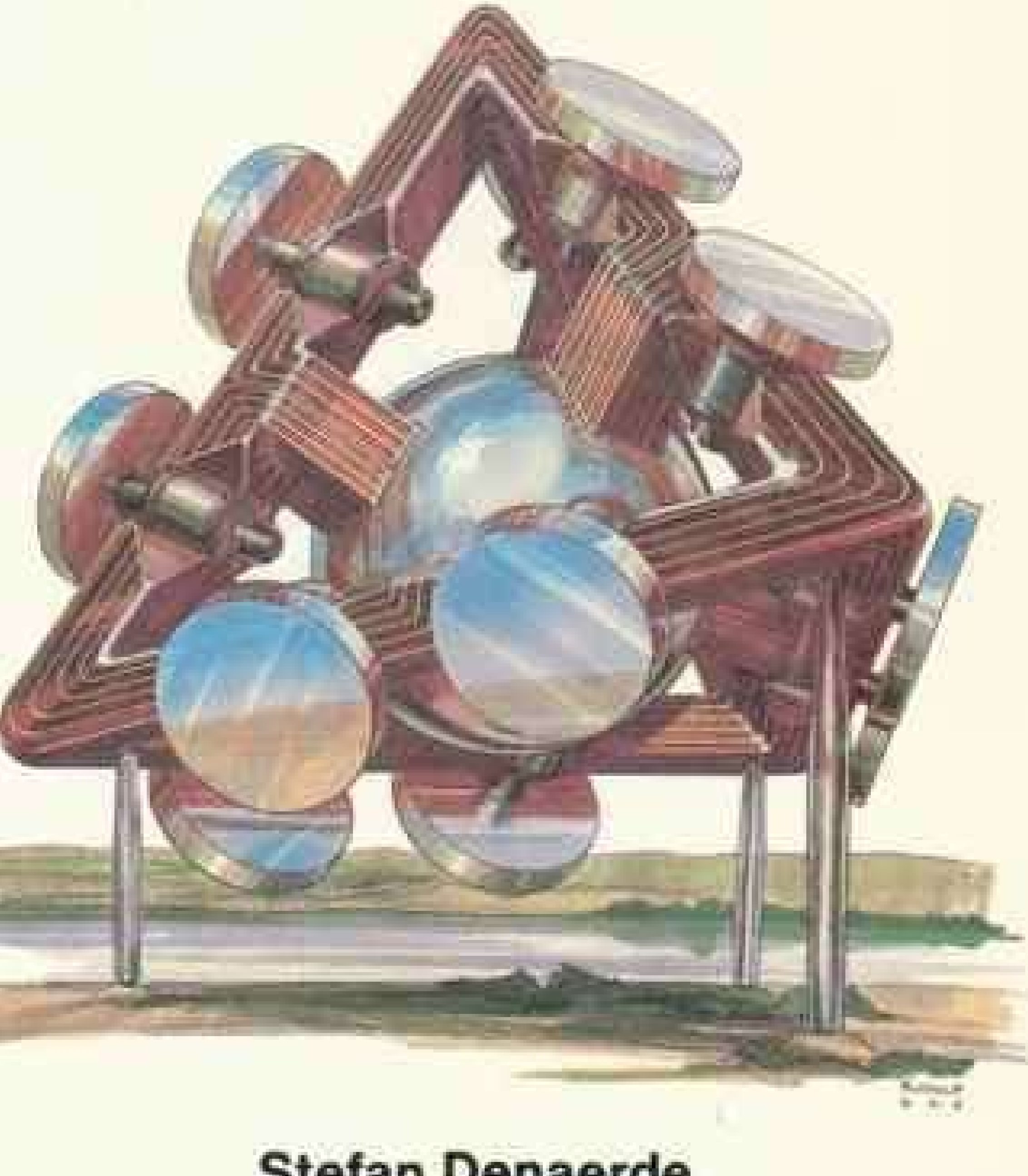
De universele schepping

Het draagveldparadigma



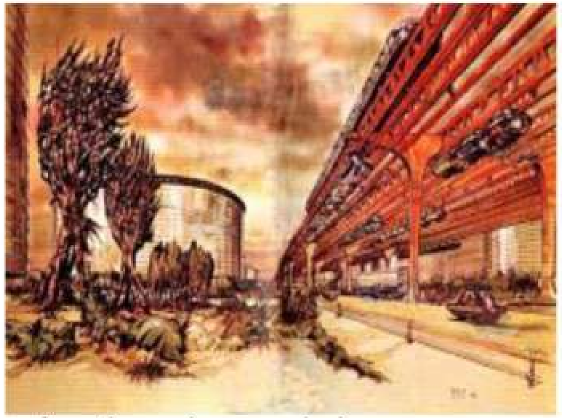
Stefan Denaerde

Meet The Iargans!

Typical Iargan

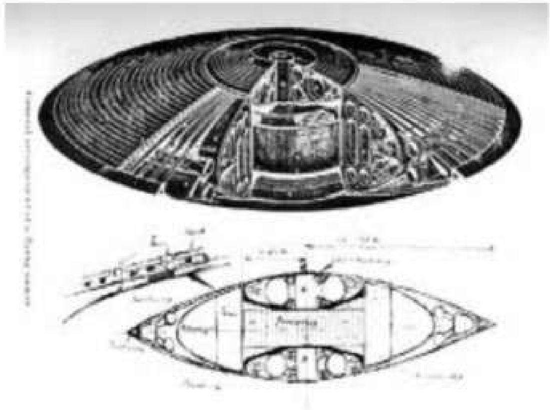
Iargan gets into photo
without being seen at
the time photo was taken!

Iargan society and
transportation infrastructure
of housing units



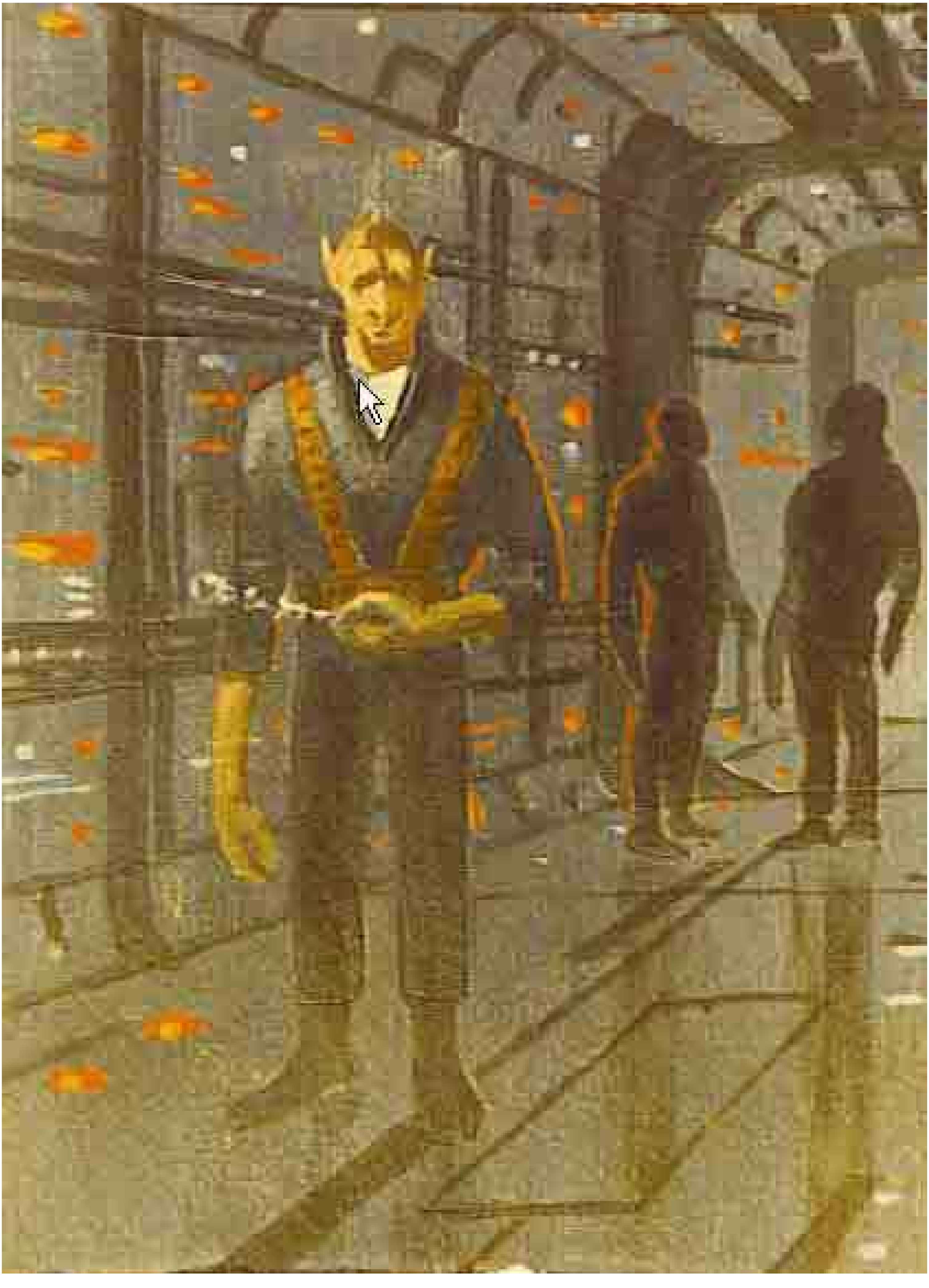
Another view and close up
of cylinder which houses 10 people each!

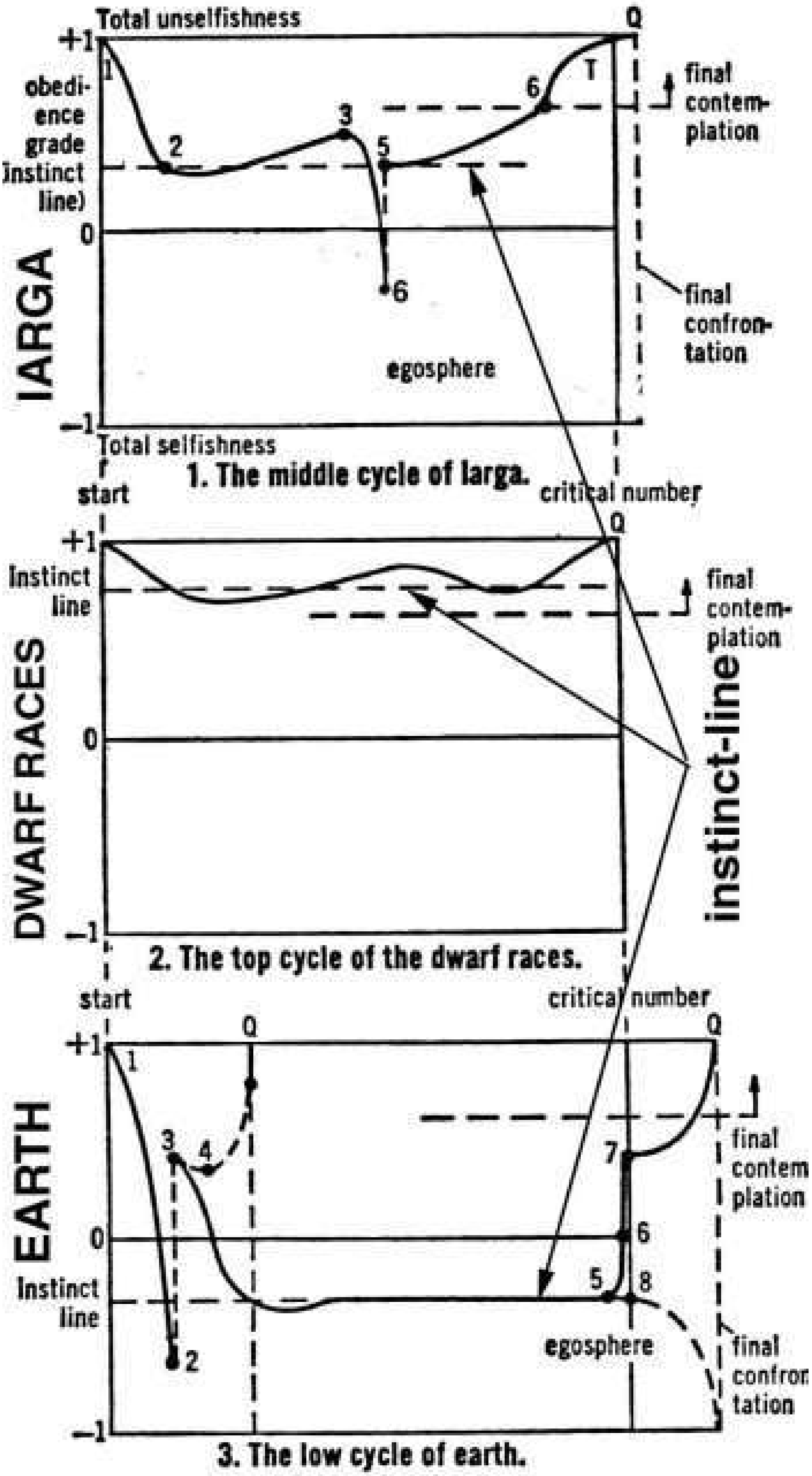
From Inside The Control Room



The blue print of a Sun wheel
which holds 10,000 people as well


Rune Øverby, 2004




Total unselfishness
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Total selfishness
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Instinct
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DWARF RACES
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instinct-line
−1
2. The top cycle of the dwarf races.
start
critical number
Q
Q
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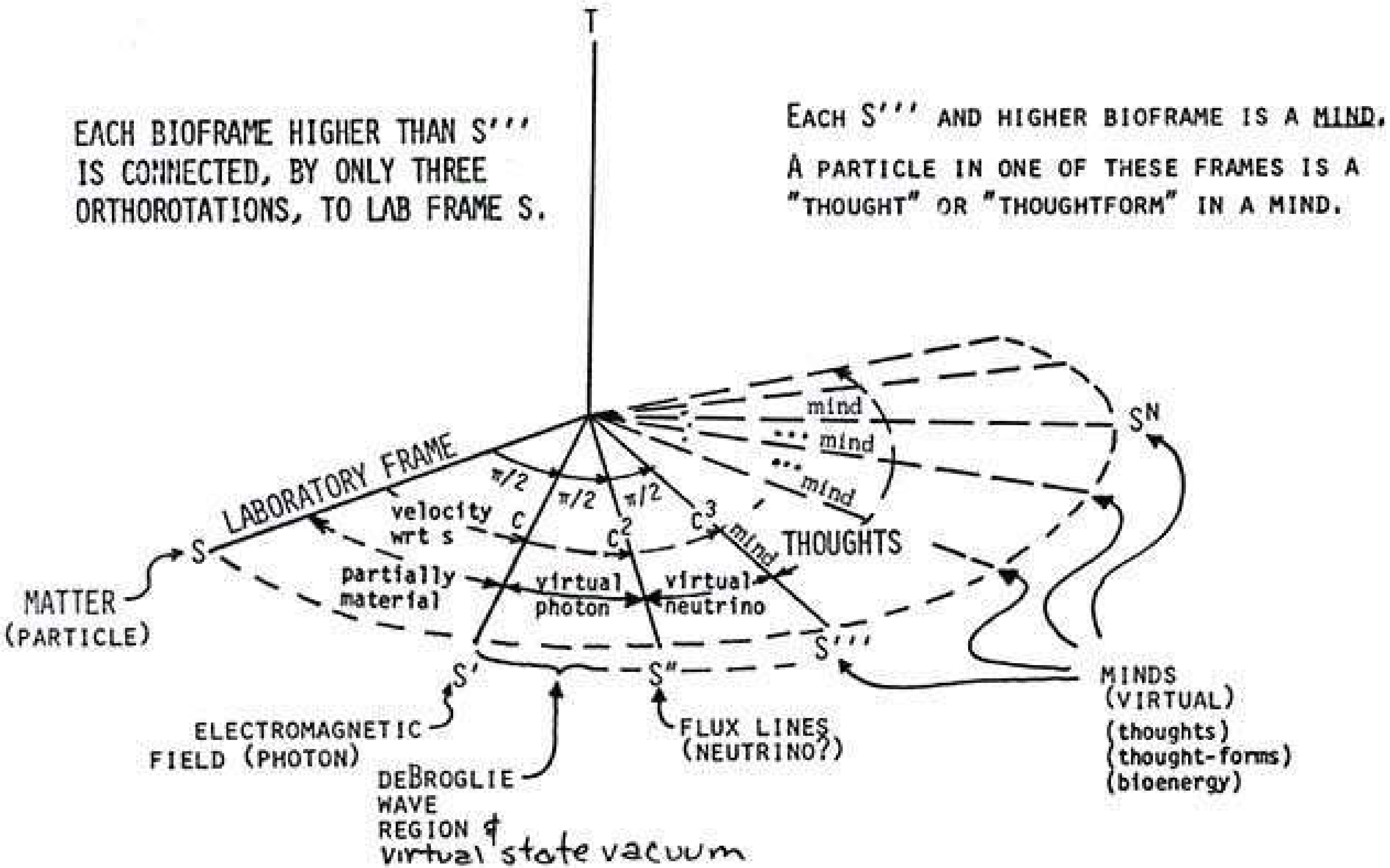
3. The low cycle of earth.


EACH BIOFRAME HIGHER THAN S'''
IS CONNECTED, BY ONLY THREE
ORTHOROTATIONS, TO LAB FRAME S.
EACH S''' AND HIGHER BIOFRAME IS A MIND.
A PARTICLE IN ONE OF THESE FRAMES IS A
"THOUGHT" OR "THOUGHTFORM" IN A MIND.
T
LABORATORY FRAME
π/2
π/2
π/2
velocity
wrt s
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C²
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... mind
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photon
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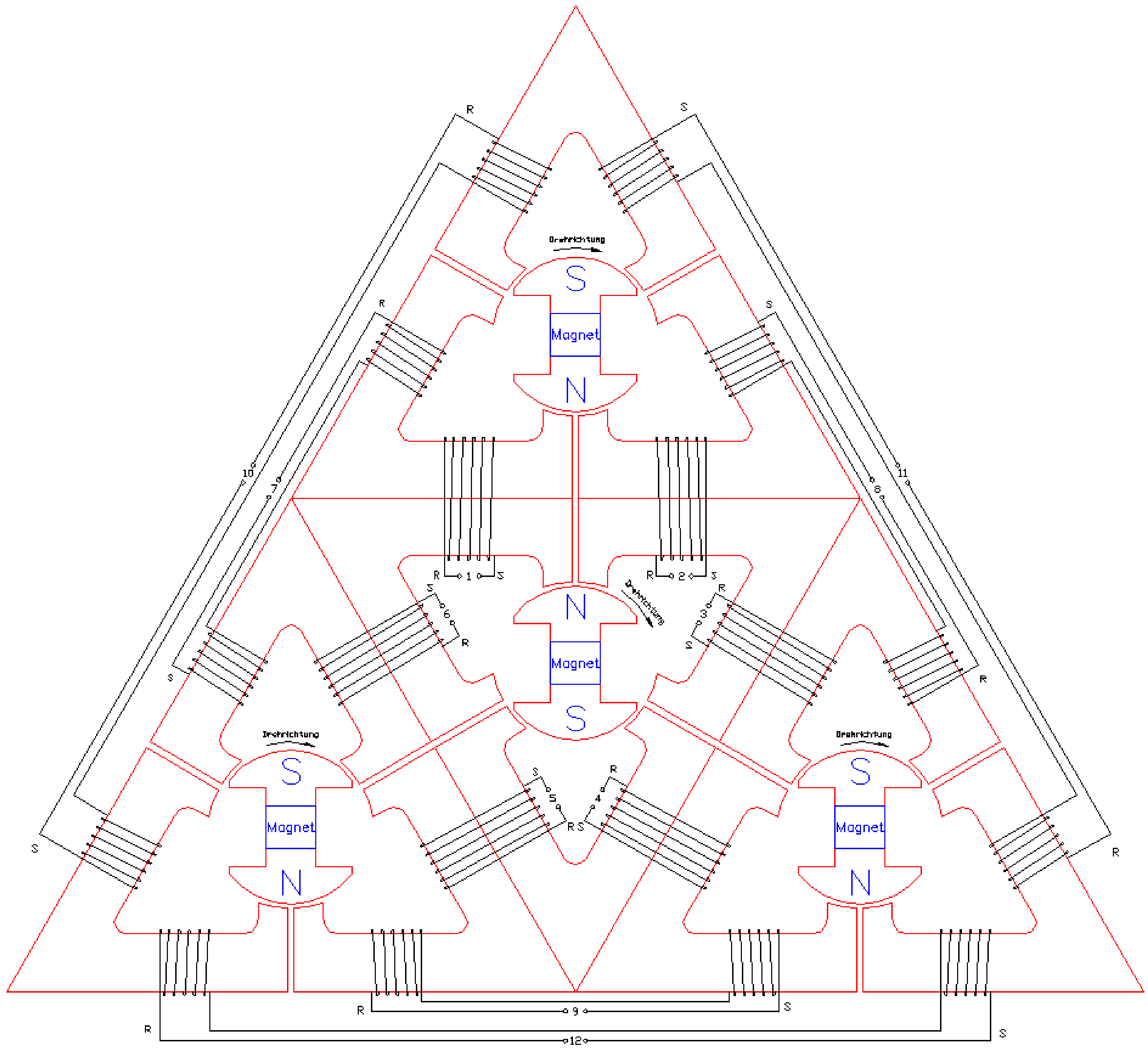
ELECTROMAGNETIC
FIELD (PHOTON)
DEBROGLIE
WAVE
REGION &
virtual state vacuum
FLUX LINES
(NEUTRINO?)
MINDS
(VIRTUAL)
(thoughts)
(thought-forms)
(bioenergy)



Drehrichtung
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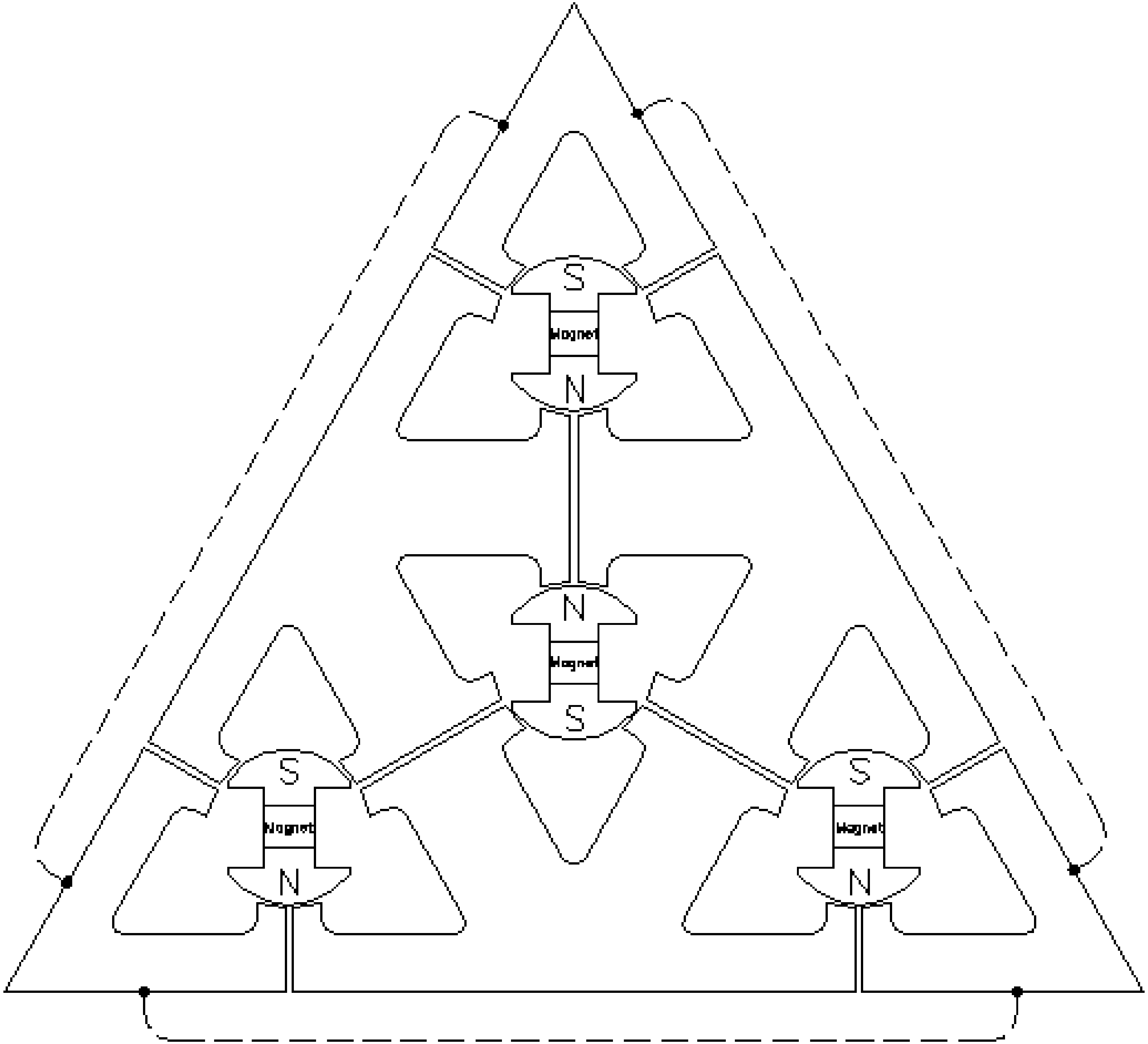

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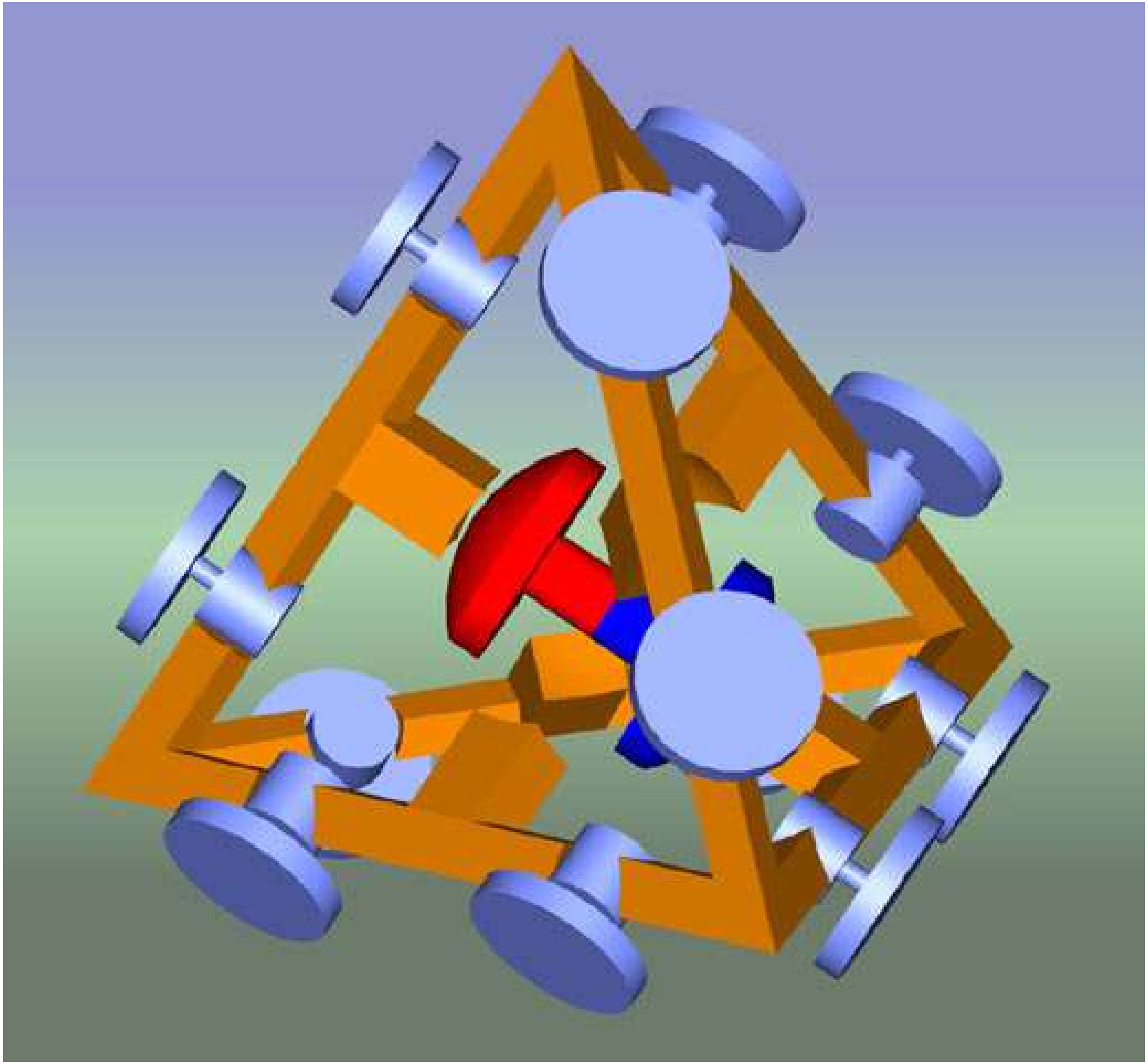
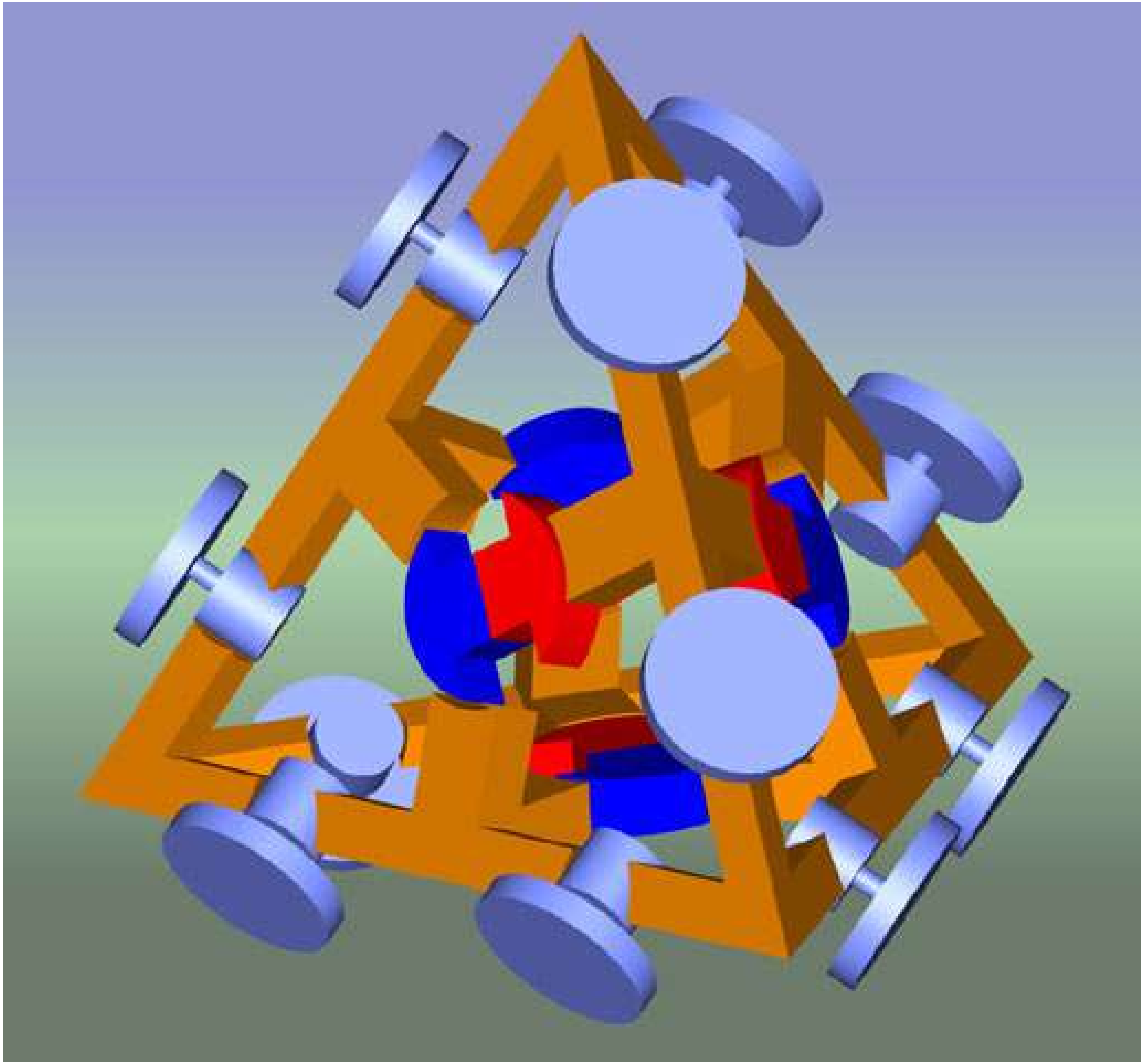
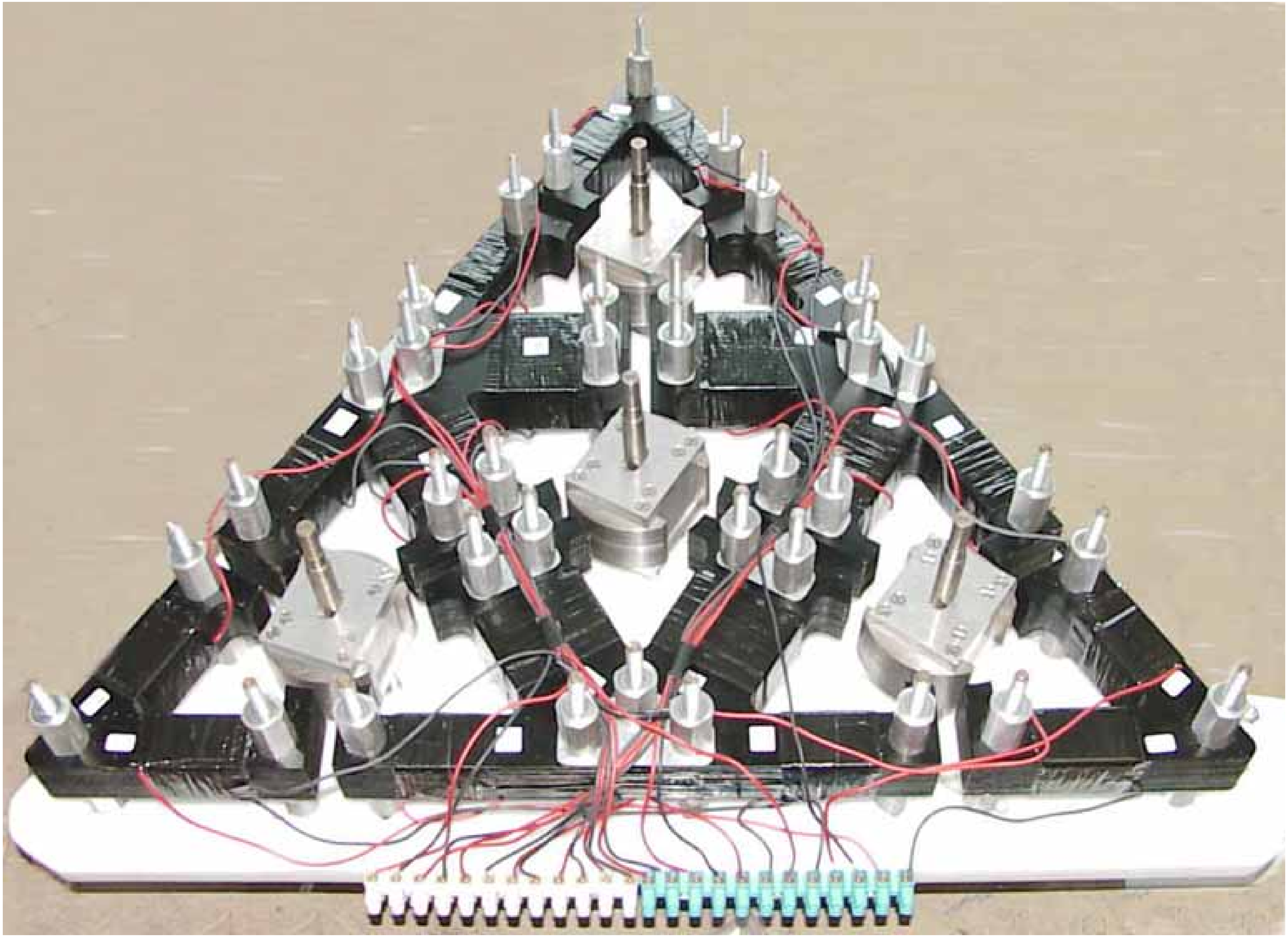
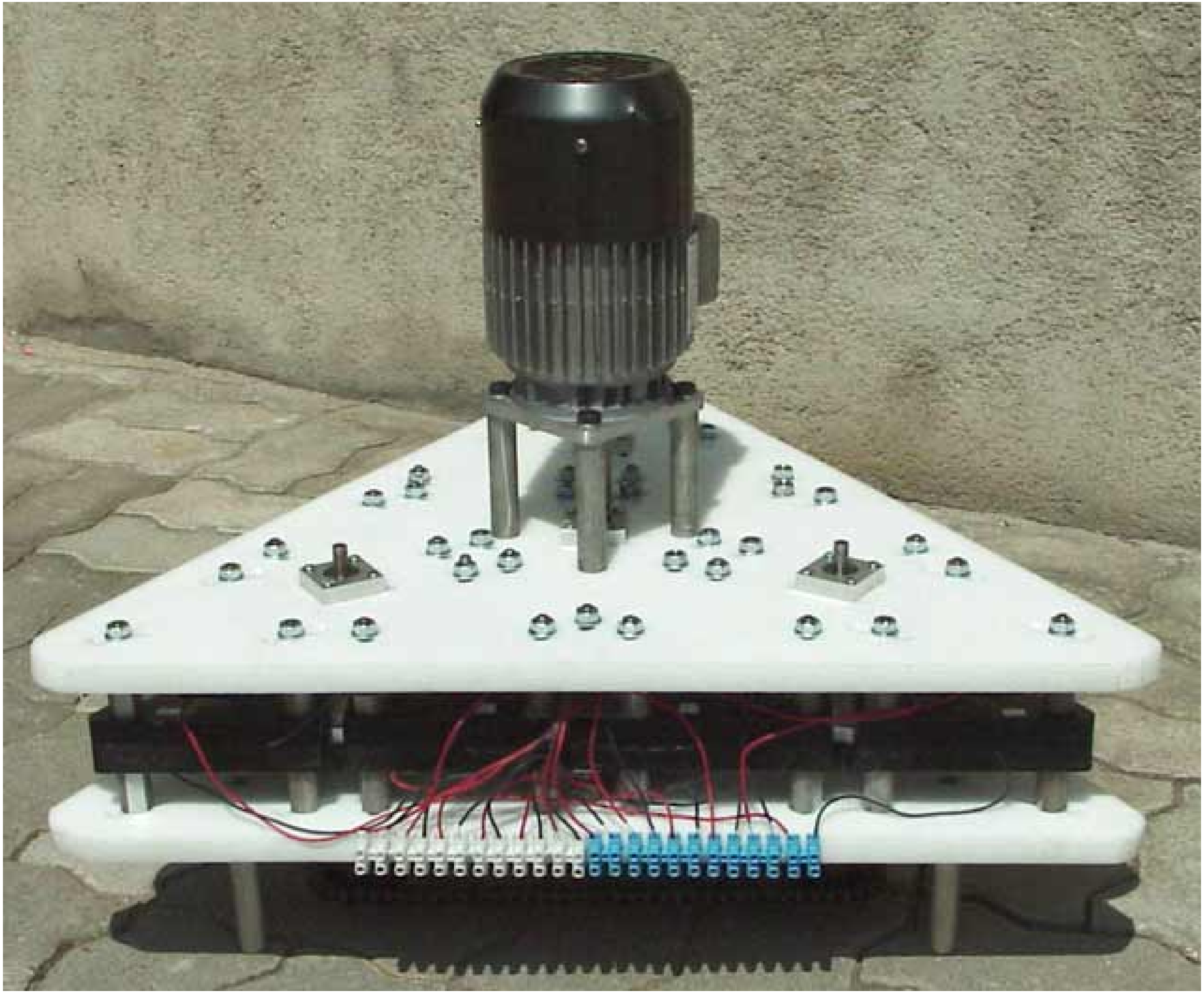
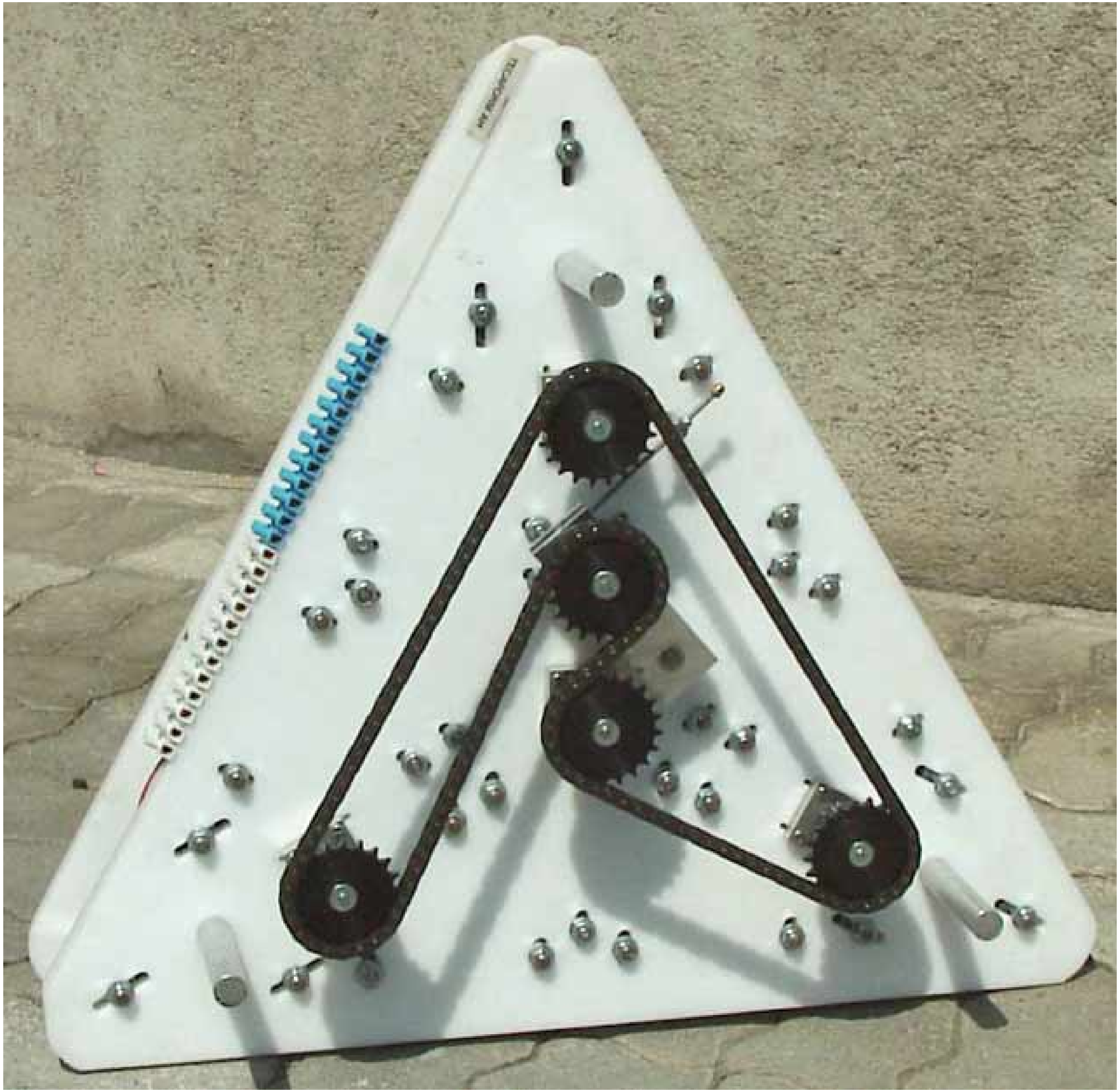


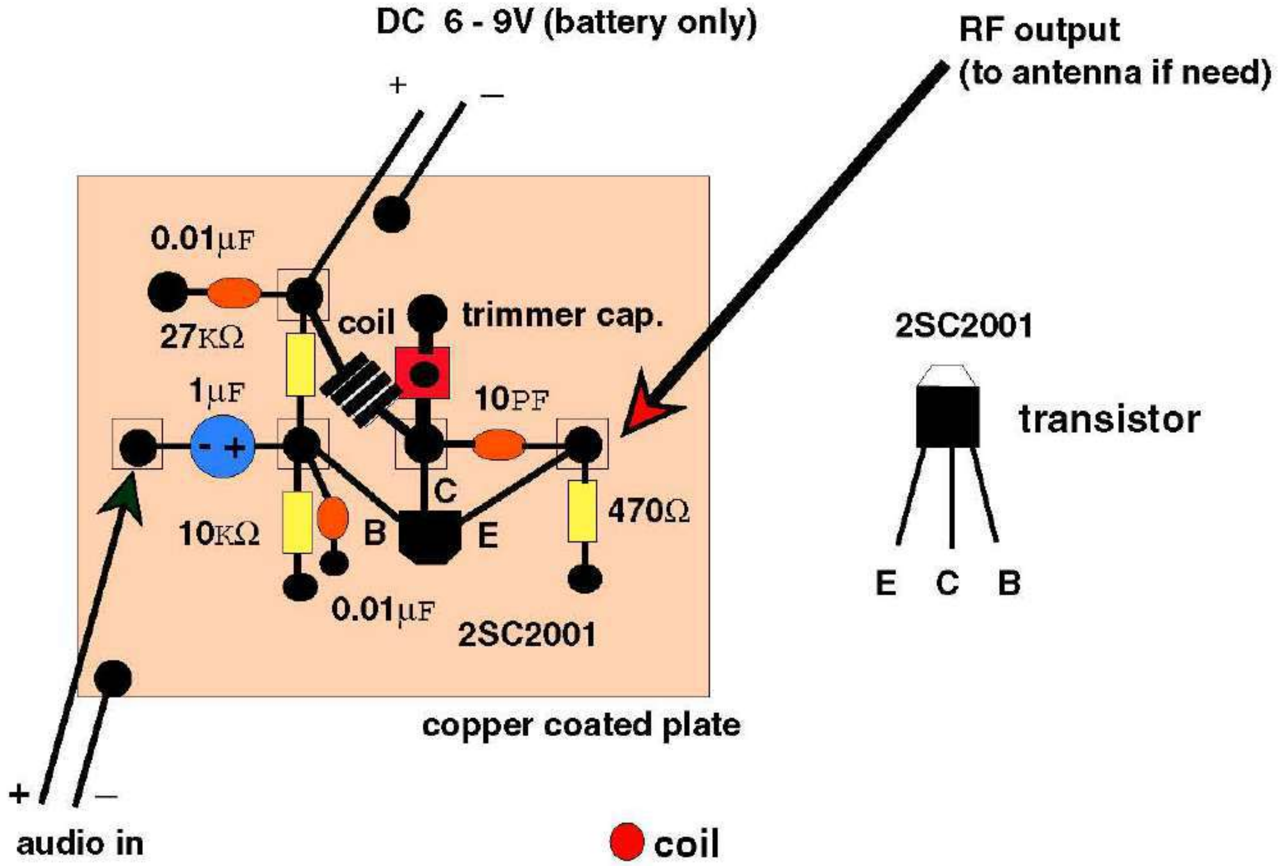








Making the simplest Transmitter



copper coated plate

- **soldered point:**
  - ● : direct to the ground

  - ● : insulated from the ground

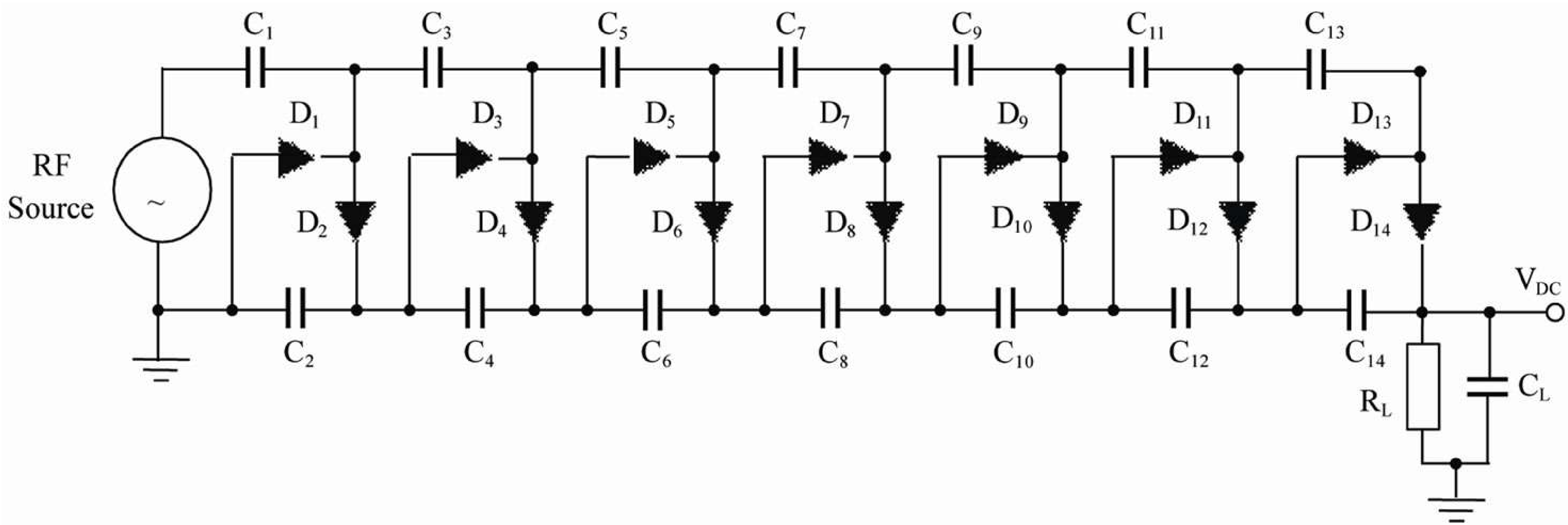
- **coil**
  - 3 - 4 turns by coated 0.8 mm wire

- **registers**
  - 470 Ω *(yellow-violet-brown)*
  - 10K Ω *(brown-black-orange)*
  - 27K Ω *(red-violet-orange)*

- **capacitors**
  - 10 PF
  - 0.01 μF *(103)*
  - 1 μF

- **trimmer capasitor 20PF**

2005-03-16 by Tetsuo Kogawa



RF Source
C1
C3
C5
C7
C9
C11
C13
D1
D3
D5
D7
D9
D11
D13
D2
D4
D6
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D14
C2
C4
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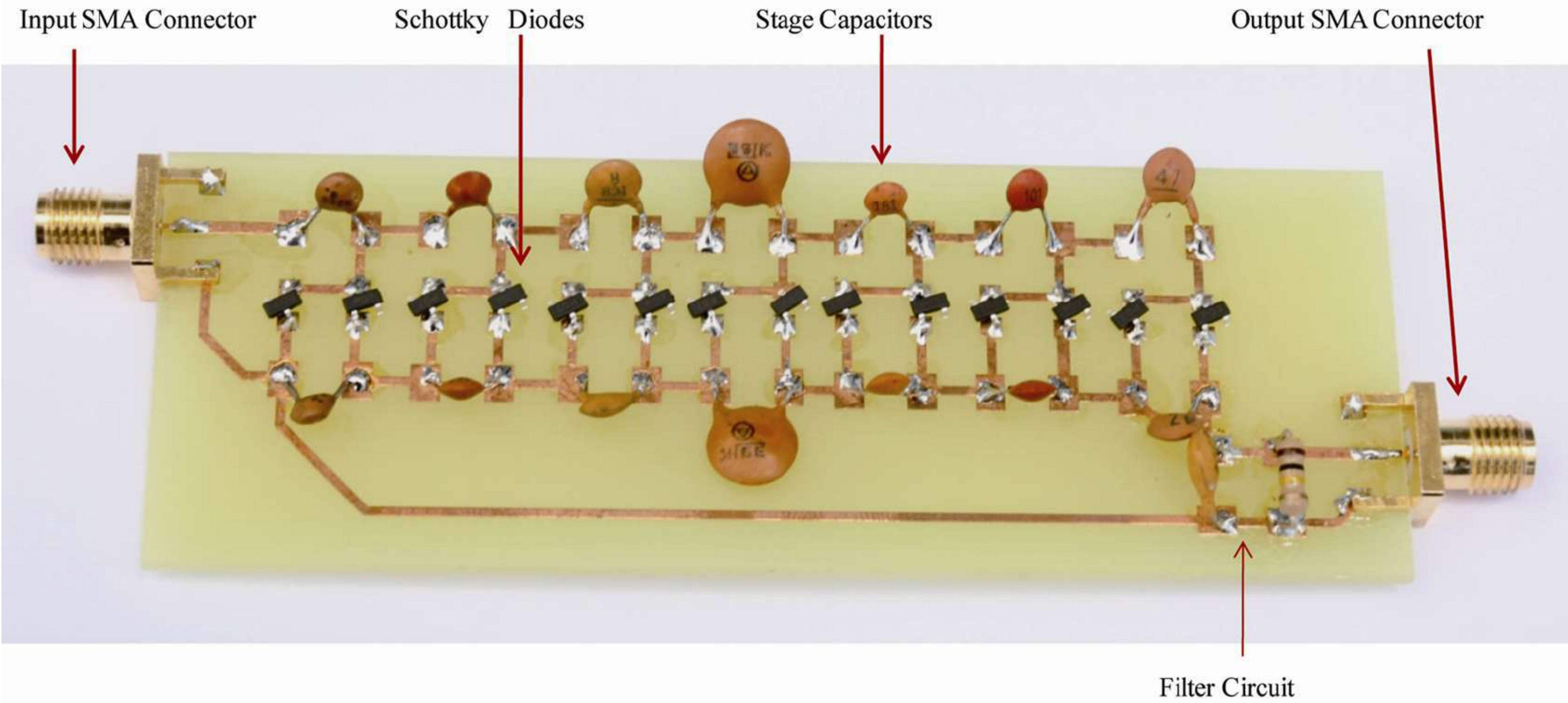
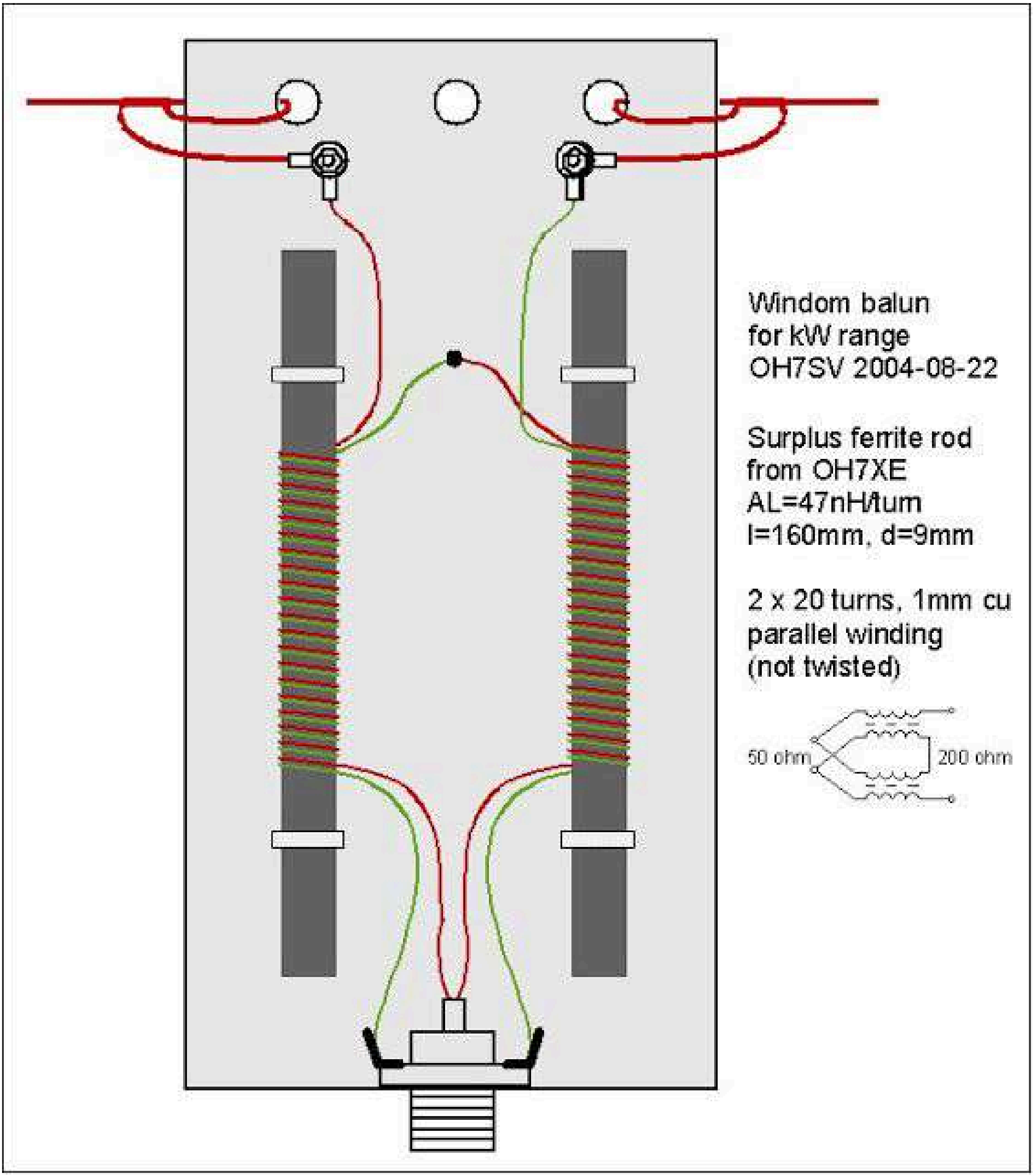
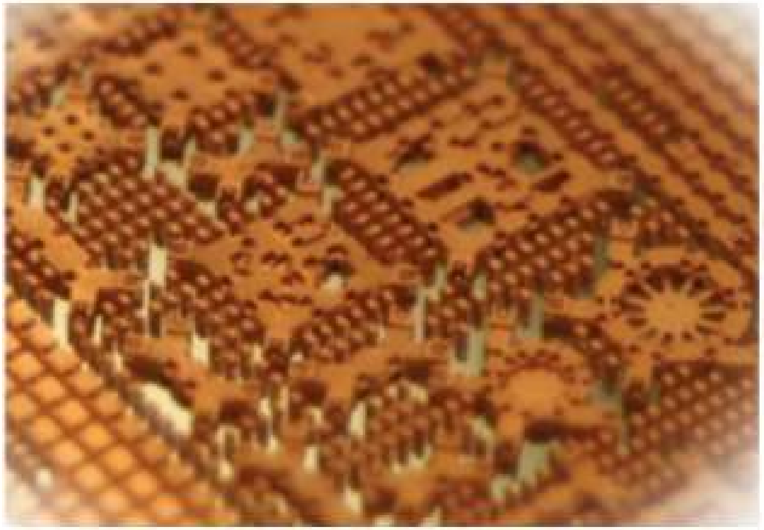
C12
C14
VDC
RL
CL

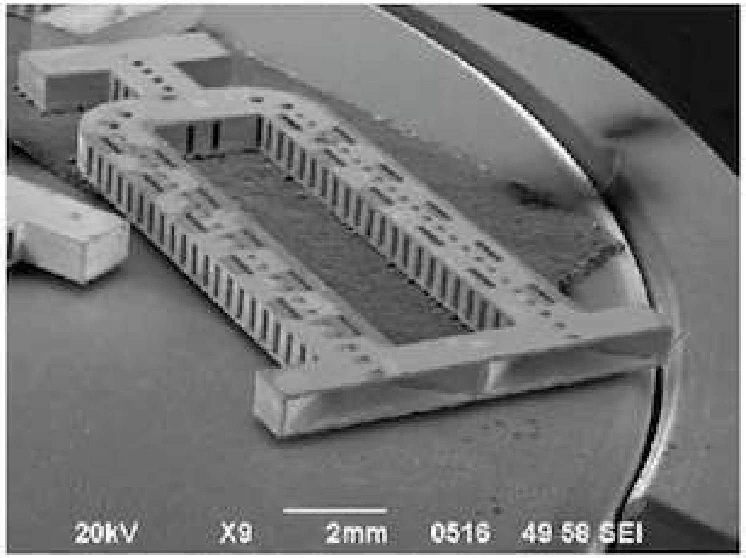

Input SMA Connector
Schottky Diodes
Stage Capacitors
Output SMA Connector
Filter Circuit

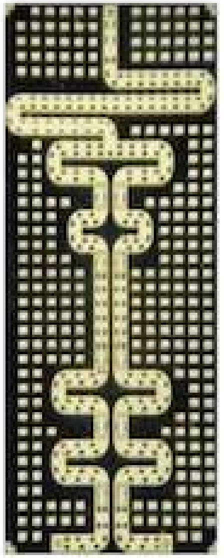

Windom balun
for kW range
OH7SV 2004-08-22
Surplus ferrite rod
from OH7XE
AL=47nH/turn
l=160mm, d=9mm
2 x 20 turns, 1mm cu
parallel winding
(not twisted)
50 ohm
200 ohm

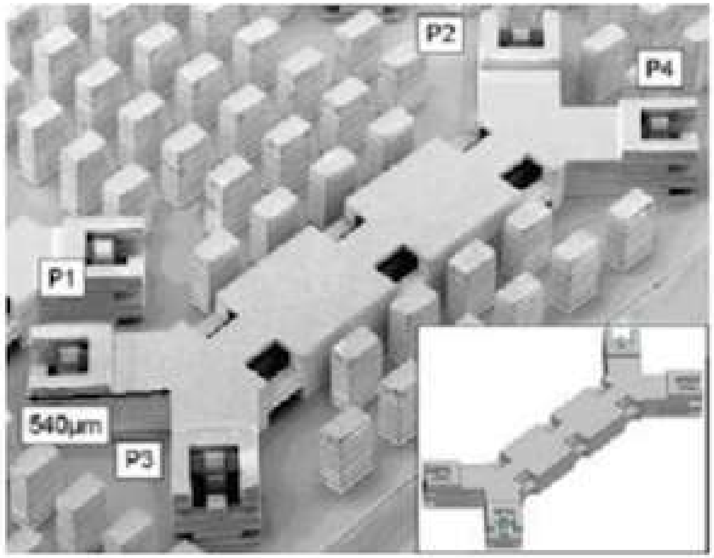
Three-dimensional micro-fabricated microwave and millimeter-wave circuits and antennas



Another active area of research has been in collaboration with Nuvotronics LLC (DAPRA and NASA) in the area of wafer-scale microfabricated coaxial lines and passive and active coaxial-based components. The advantages of these lines, fabricated by Nuvotronics, is extremely low loss into the millimeter-wave range, extremely good isolation of neighboring lines enabling high density circuits, broad bandwidth and low dispersion, and amenability for integration with passive and active surface-mount components. Our research goals are focused on design of completely new components in this technology, in order to push the bandwidth, power handling and flexibility for various communications and sensing applications. Some results include 22:1 bandwidth impedance transformers and 22:1 bandwidth power divider networks which operate up to millimeter-wave frequencies.



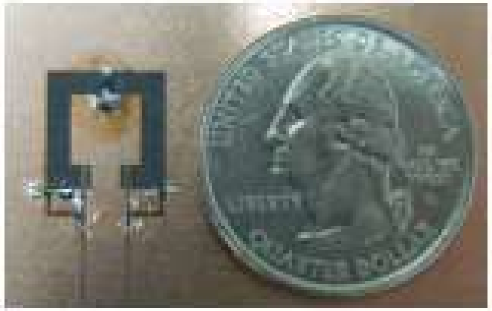


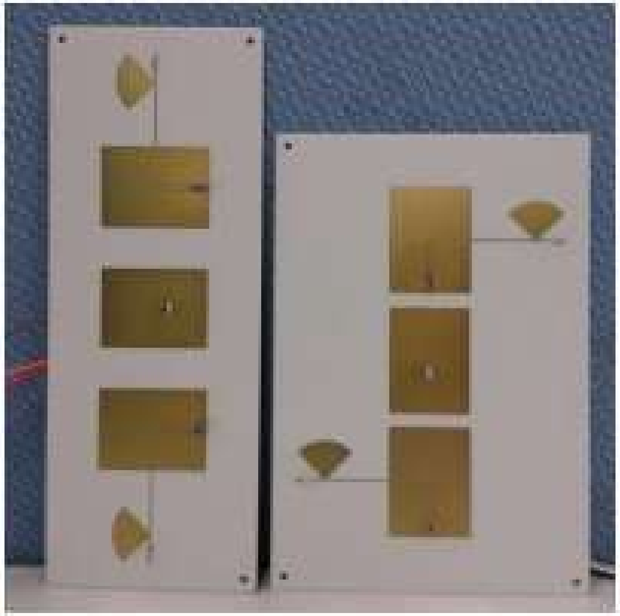


Wireless powering for battery-less sensors

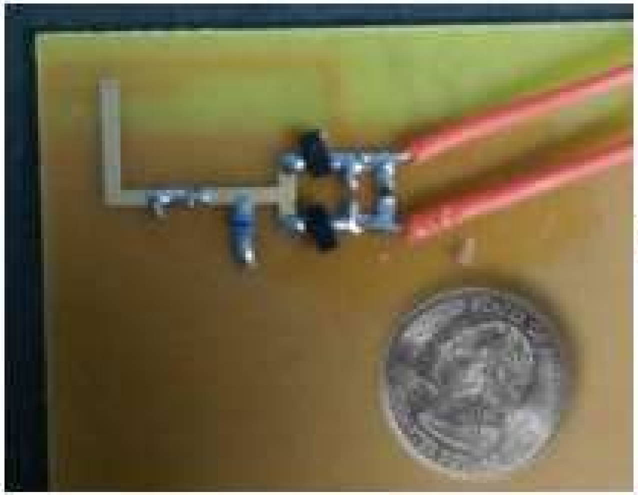
An area in which we have promising initial results, as well as a best paper award, is in RF energy harvesting and wireless powering of wireless sensors. This is an area with a strong collaboration with the Colorado Power Electronics Center (CoPEC), with strengths in low-power management design. The work resulted in a comprehensive patent application and licensing of the IP by several companies, e.g. Cymbet. The applications are for low-maintenance batteryless sensors for manufacturing environments, structural monitoring, and healthcare. We have shown that broadband statistically varying randomly polarized background microwave radiation can be efficiently rectified and the stray energy stored over time for useful electronic applications. We have also shown that FCC-compliant low-power transmitters can be strategically placed to enable constant very low power density energy delivery and storage. Our goals related to this research are to improve the integration of our current hybrid demonstrations, and to expand the circuit-antenna library so that we can address many concrete applications with the best-suited architecture.

- *Reconfigurable antennas*



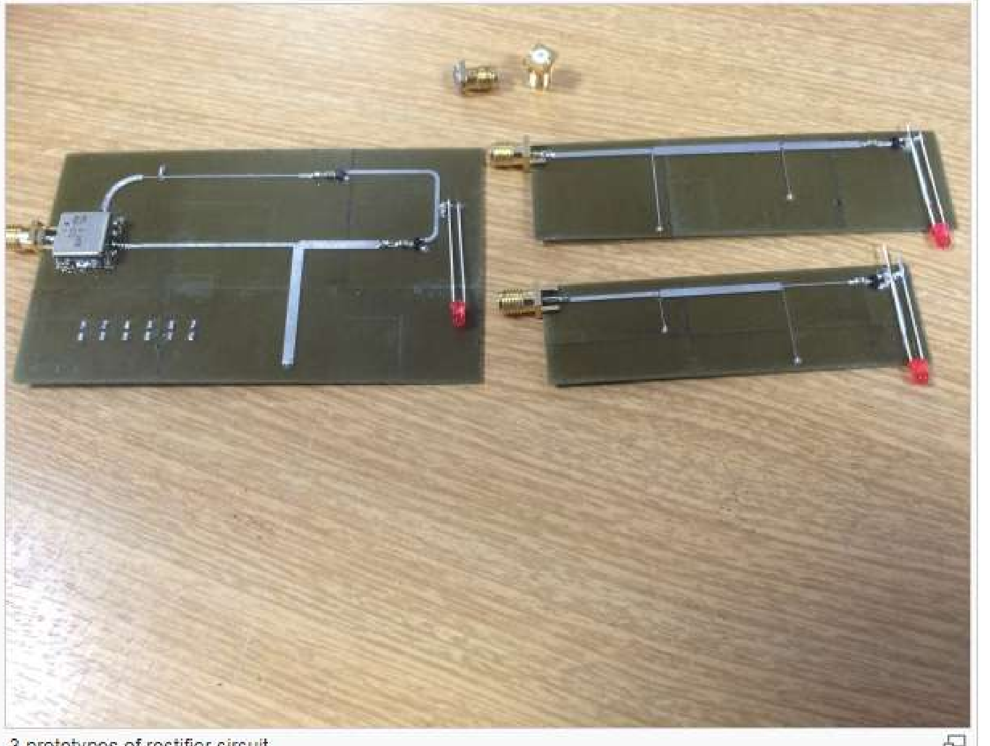


- RF *energy harvesting*

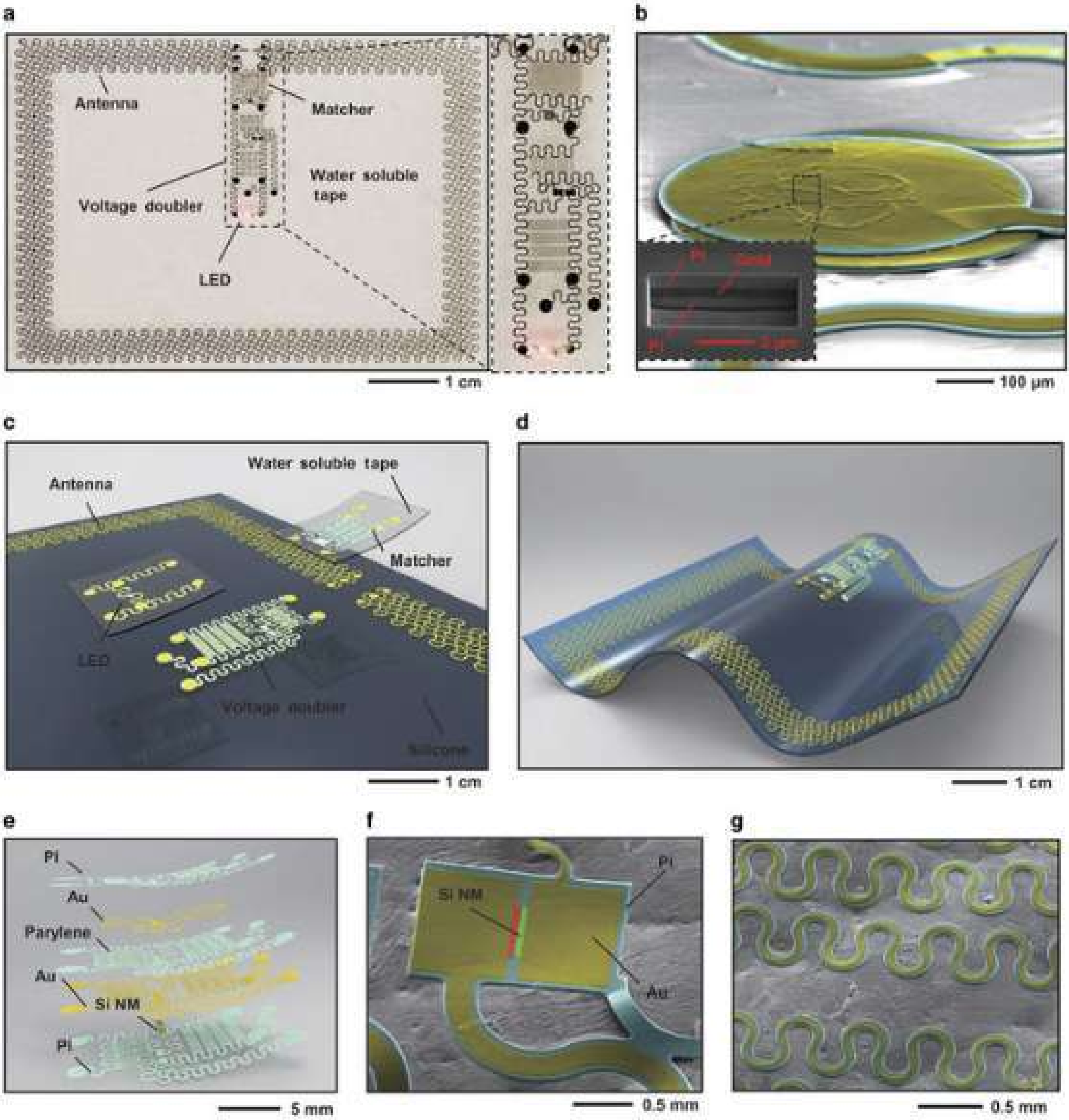


Rectifier Circuit

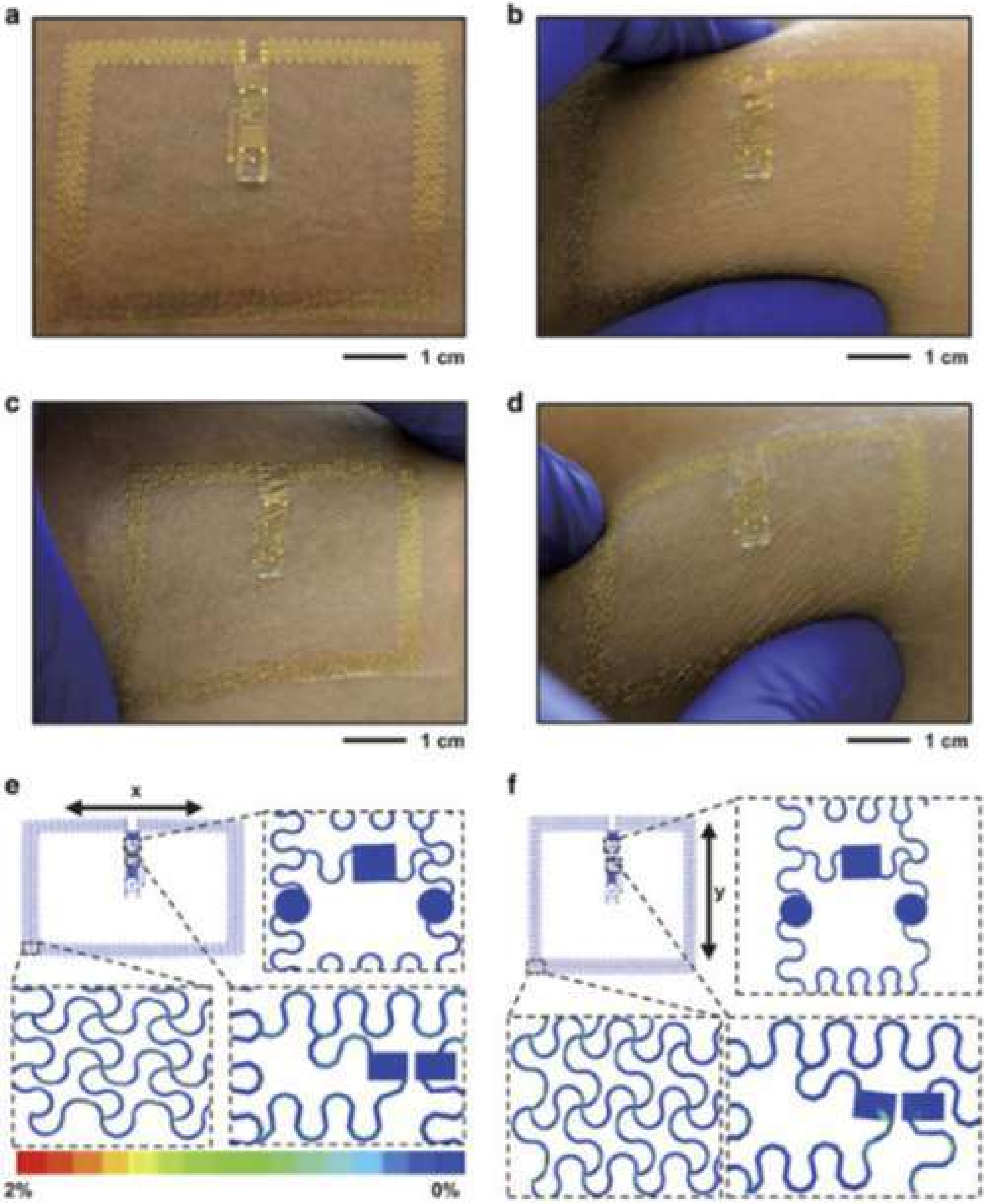
A RF-to-DC rectifier circuit converts collected RF energy to DC electricity. The designed circuit is a half wave voltage doubler circuit with a impedance matching network that matches the rectifier's input impedance to 50Ohms for maximum power transfer or minimum power reflection.



3 prototypes of rectifier circuit

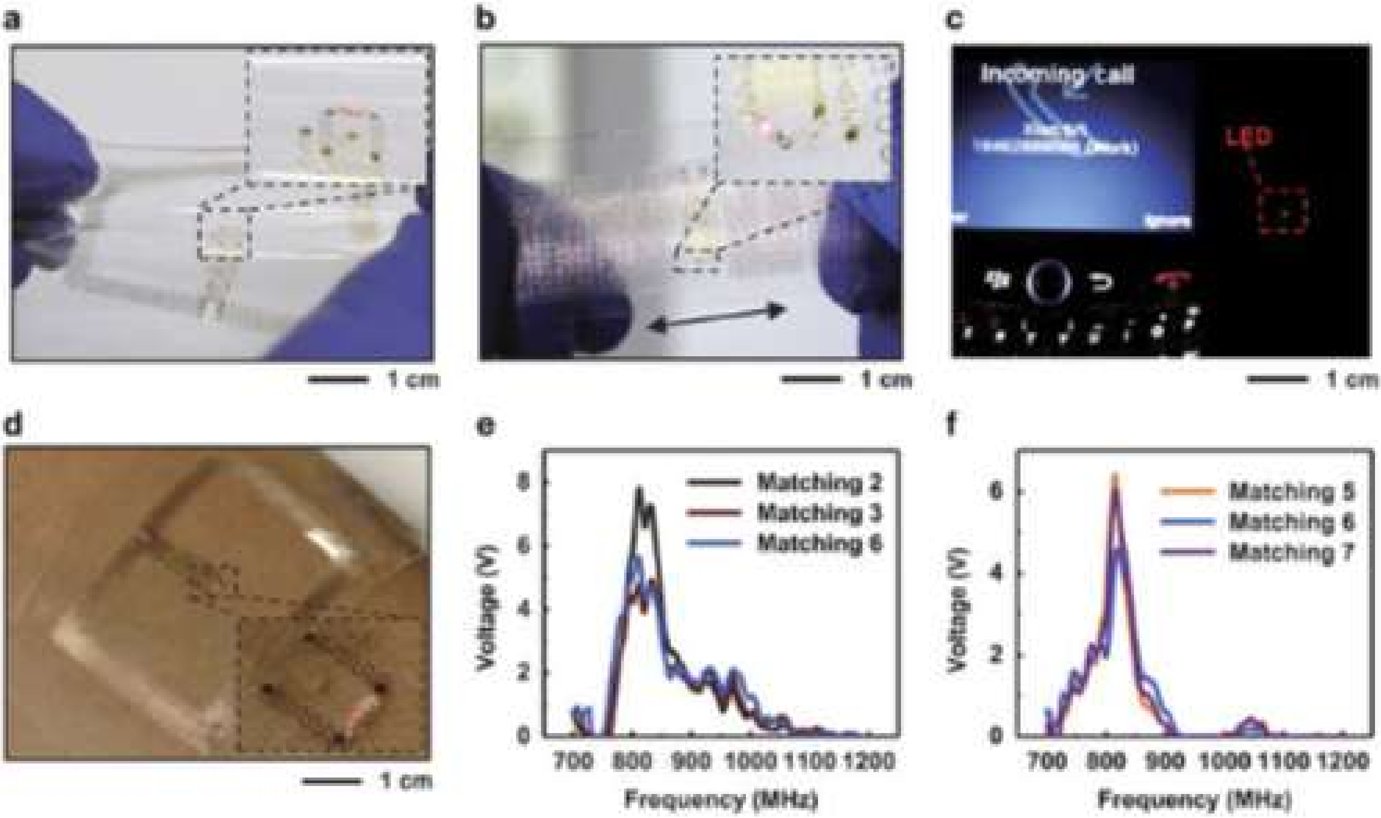


Schematic illustration and implementation of a modularized epidermal RF system for wireless power transfer. (**a**) Image of device while operating an integrated LED via power delivered by a remote RF source (15 W, 1.5 m). The loop antenna, formed with serpentine conductive traces in a square layout, spans the perimeter. The inset on the right highlights the collection of active components. (**b**) Top view SEM image of aligned gold pads whose



Mechanics of an epidermal RF system. Pictures of an epidermal RF system integrated on the skin (**a**) in its native state, (**b**) during compression by pinching (**c**) under uniaxial stretch and

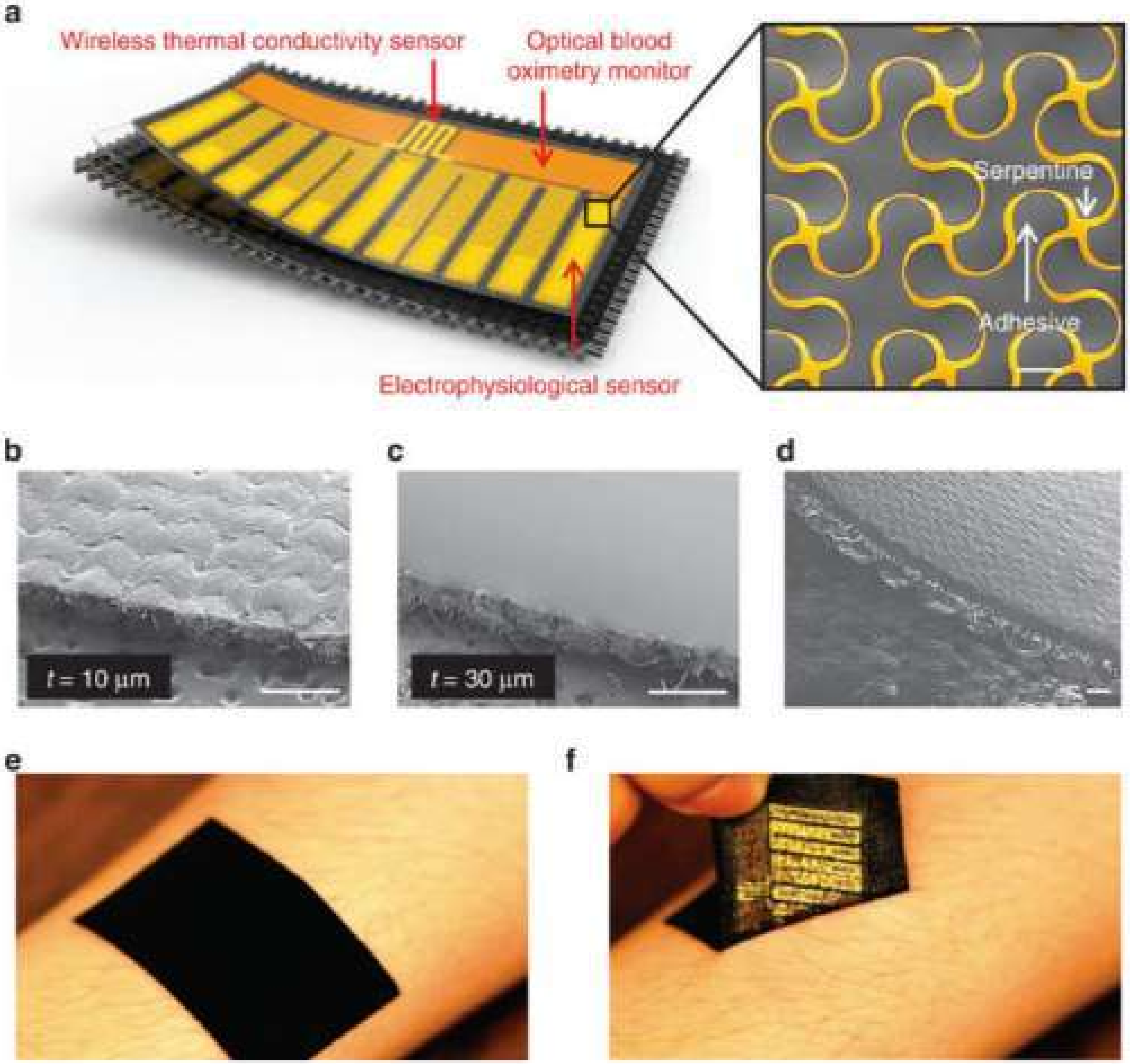
Figure 5



Demonstration of RF wireless power transfer. Epidermal RF system operating while (**a**) twisted and (**b**) repeatedly stretched. (**c**) Demonstration of the use of an epidermal RF system to capture RF output from a cell phone to supply power to an LED. (**d**) Epidermal RF system powering a red LED while on the skin using RF transmitted by a remote source (15 W, 1.5 m, 700 MHz–1.5 GHz). Open-circuit voltage output (**e**) in air and (**f**) on skin when implemented with different matching components.

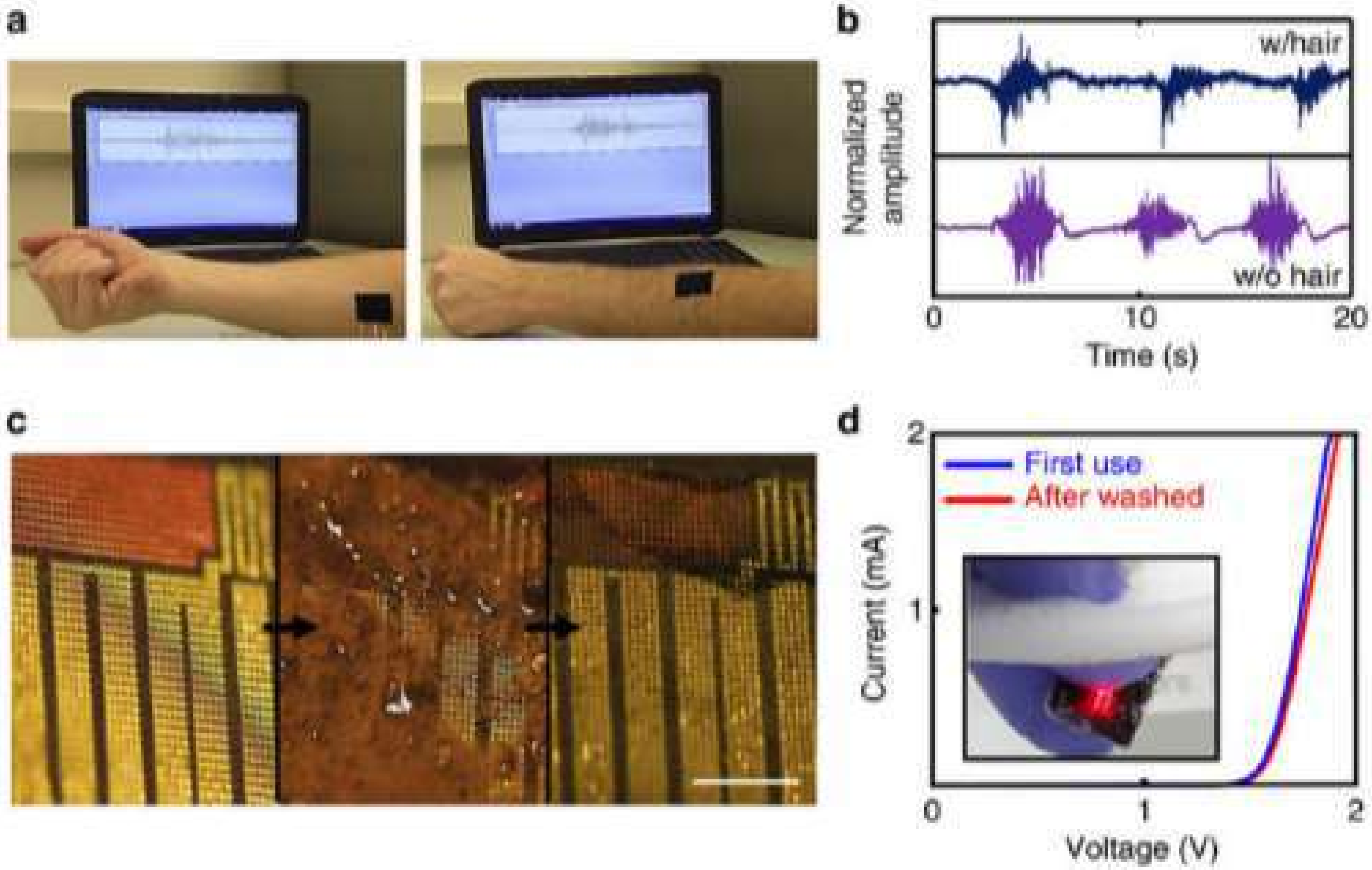
Full size image »

stretchable electronic systems.

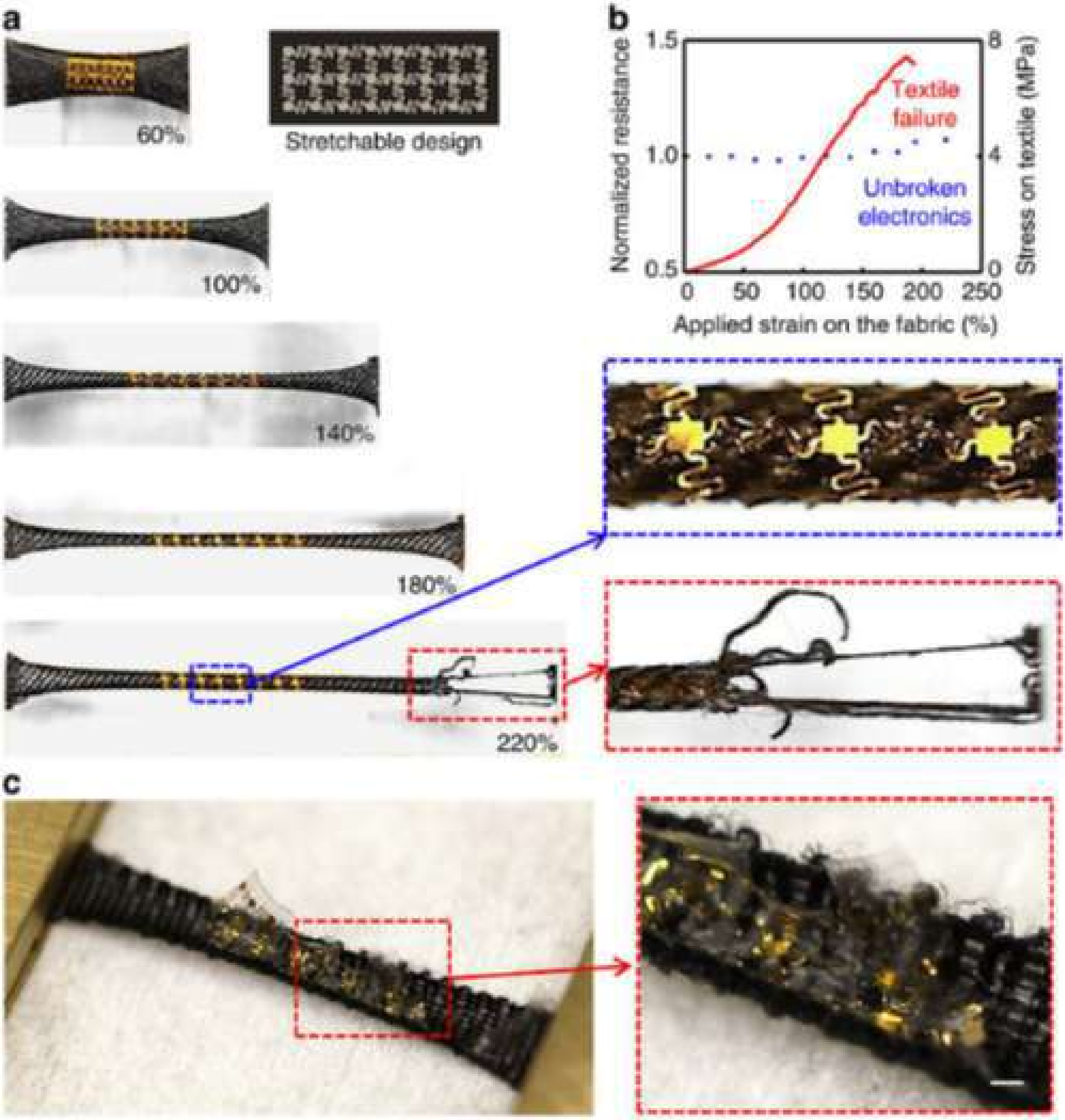


(**a**) Illustrations of the various layers in a representative system, including the active electronics (~5 μm thick), an ultralow modulus elastomer coating (~100 μm thick) and a stretchable fabric (~1 mm thick; 90% nylon, 10% spandex). The active electronics layer includes a wireless thermal conductivity sensor, a blood flow monitor and an EP sensor. The magnified view shows the FS structure of part of an EP sensor, as a coloured scanning electron micrograph (SEM; gold corresponds to the conducting traces, scale bar, 100 μm).

Figure 2: Capabilities for applying device to the skin with hairs and washing.

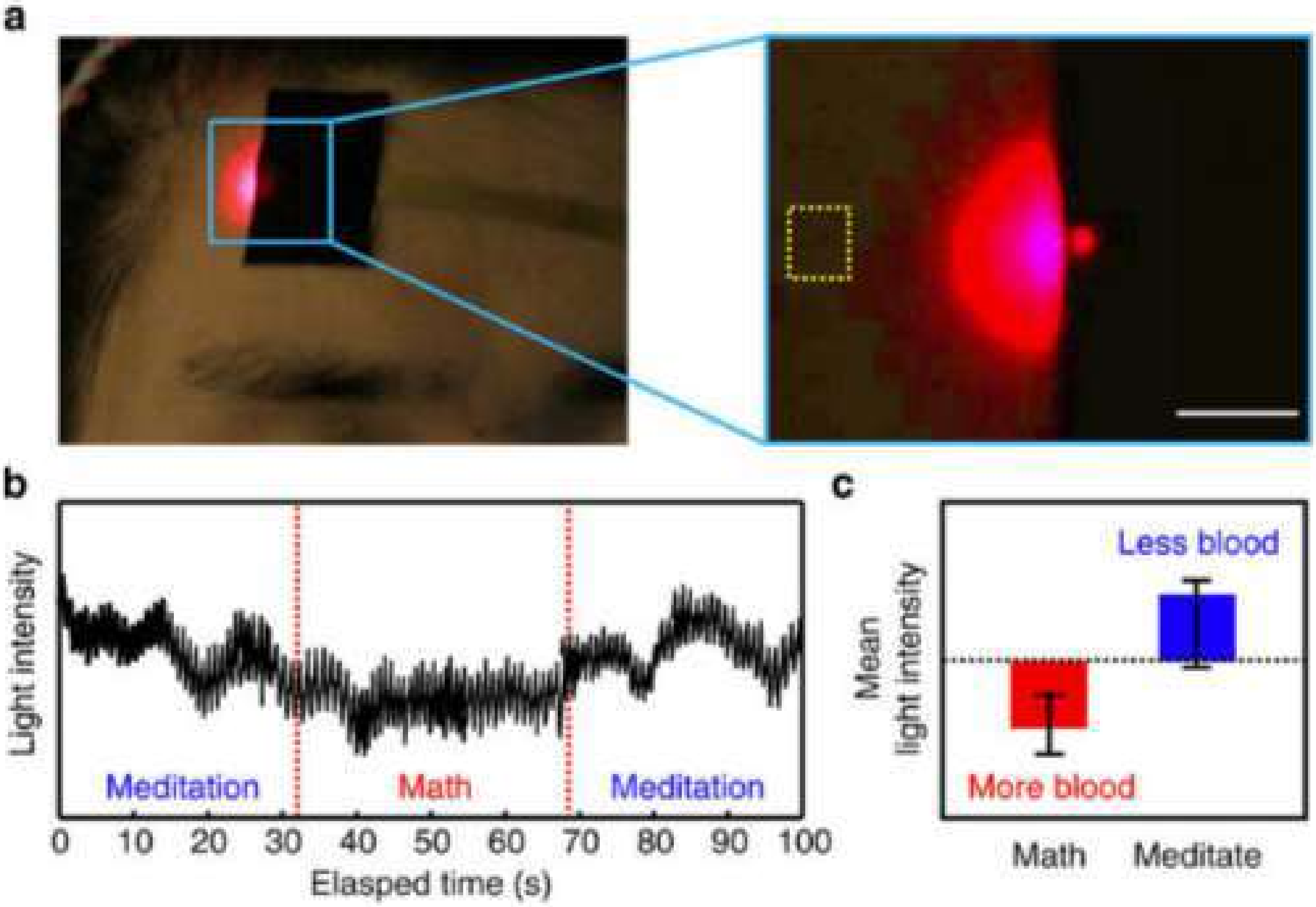


EMG measurement setup (**a**) and data (**b**) from inside (w/o hair) and outside of the forearm (w/hair). (**c**) Optical images (scale bar, 1 mm) of cleaning with soap and water: as-fabricated device (left), after contamination with dirt (center) and after washing with soap and water (right). (**d**) Current–voltage characteristics of an AlInGaP microscale inorganic LED module associated with the blood flow monitoring after first use and after washing. The image in the inset shows the device immersed in soapy water.



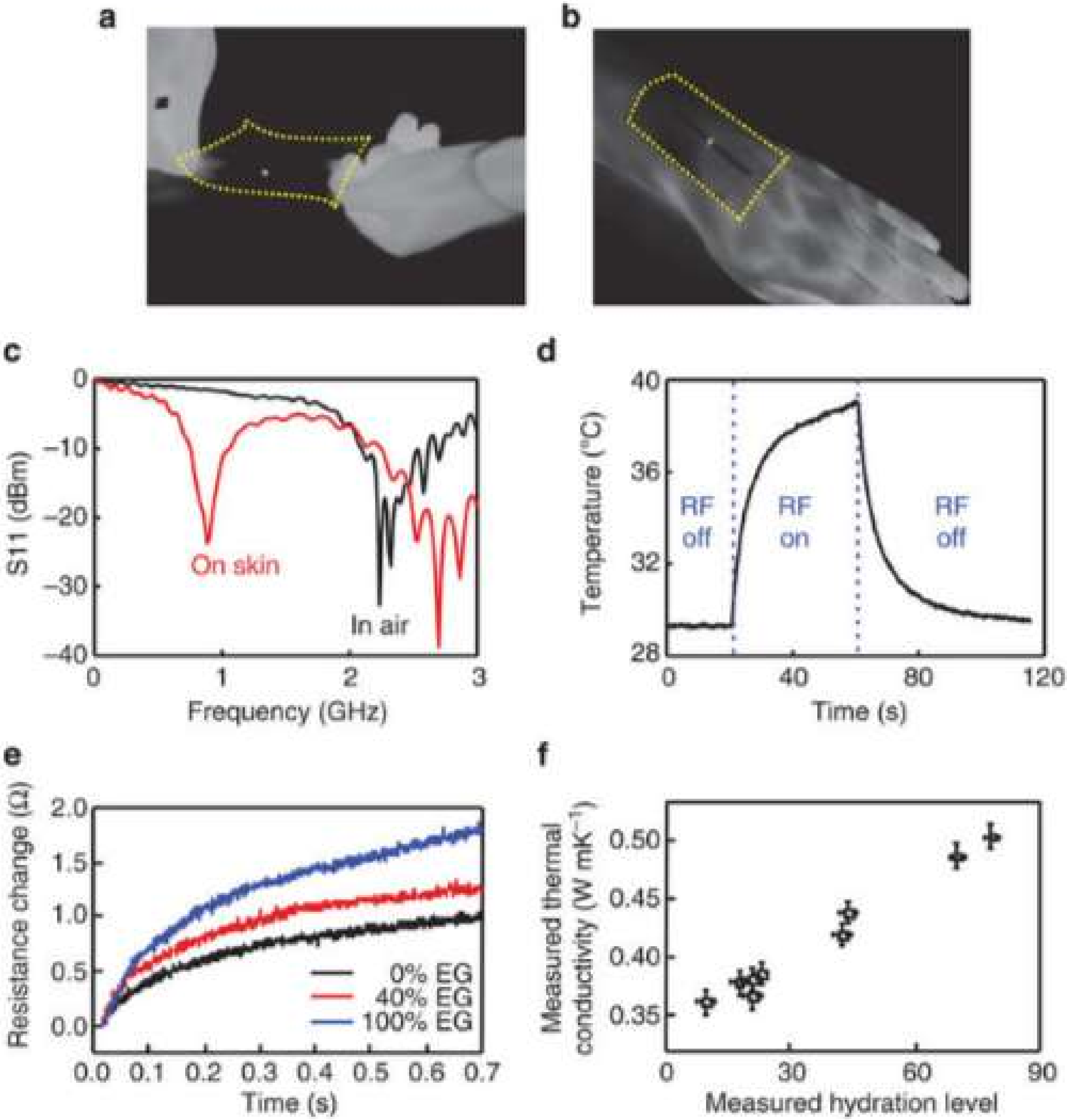
(**a**) Device integration with UL-Sil coating (*E*=3 kPa), Optical images of a stretchable electronic test structure (thickness ~2 μm) at increasing levels of uniaxial stretching. Magnified views of unbroken electronics (blue dotted box) and torn fabric (red dotted box) observed at an applied strain of 220%. (**b**) Normalized electrical resistance (left *y* axis) and

Figure 6: Functional demonstration of cerebral oximetry.



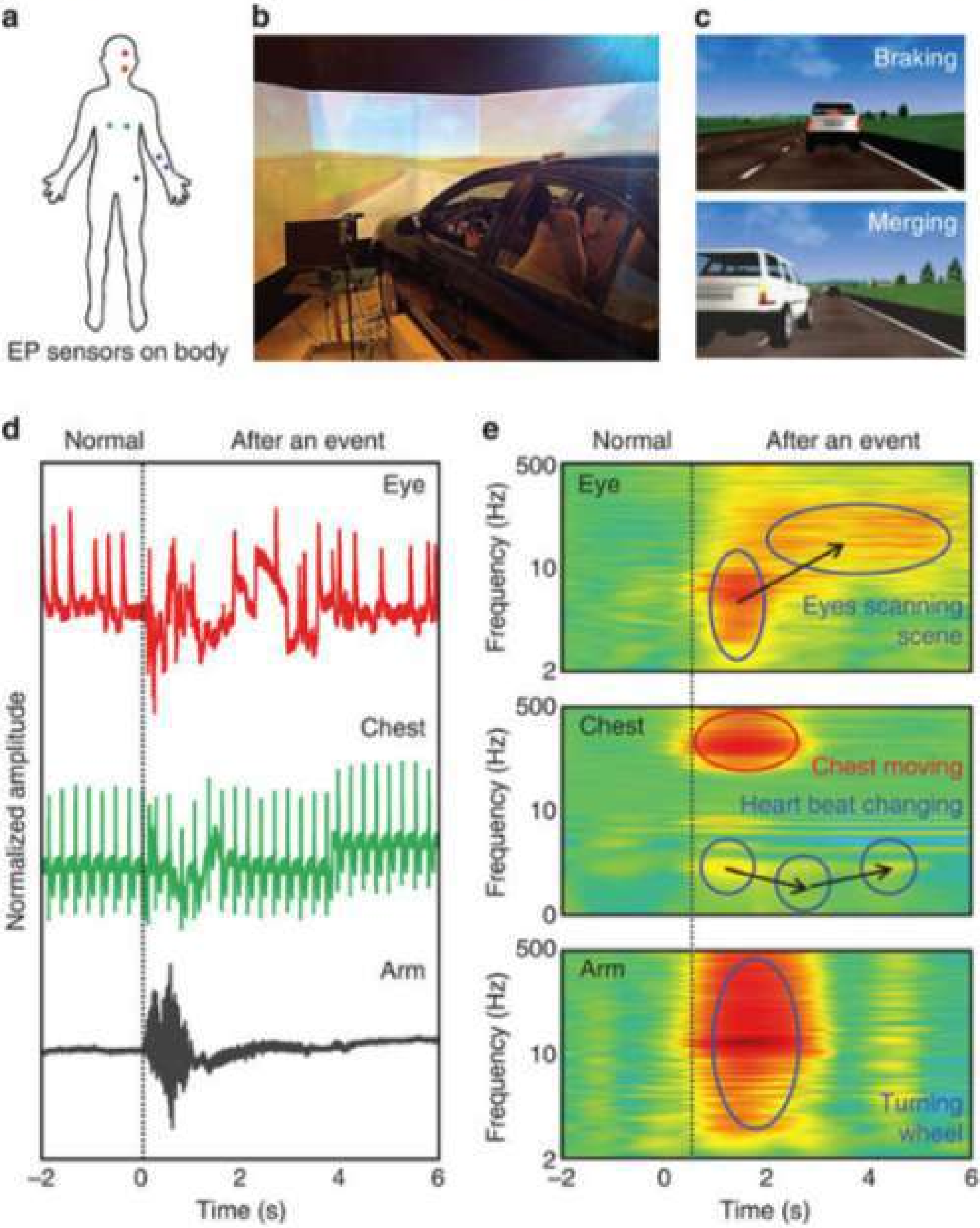
(**a**) Image of a device laminated on the skin of the forehead, with an operating μ-ILED (wavelength 650 nm) under room light illumination and in the dark. Scale bar, 1 cm. Light intensity integrated over the region indicated by the yellow dotted box of the right frame of (**a**), plotted as a function of time (**b**). (**c**) Scattered light intensity during mental math and rest, mean centred, smoothed with a moving window and averaged over time for each condition. Error bars denote +/−1 s.d. of the signal over time in each condition. Reduced intensity during mental activity is consistent with increased light absorption induced by additional blood flow in the cerebral cortex.

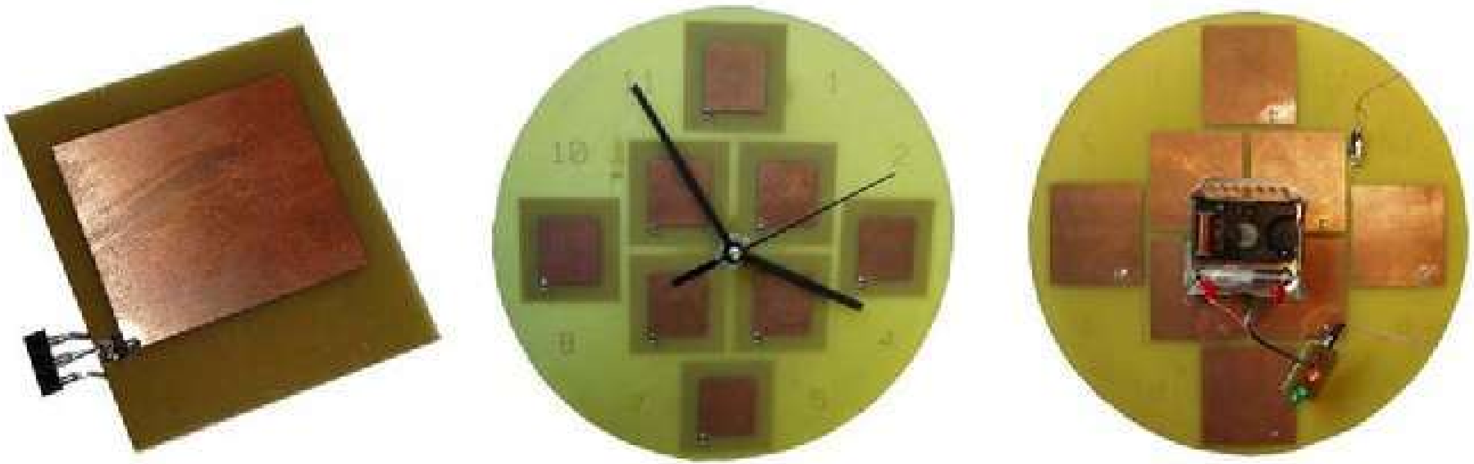
Figure 7: Wireless evaluation of skin thermal properties.



IR images of a wireless heating device, collected during exposure to RF energy, in a free-standing state (**a**) and mounted on the wrist area (**b**). (**c**) S_{11} coefficient measured from the wireless heating element, evaluated in air and on human skin. (**d**) Transient control of temperature on the skin using the wireless heating element, and measured using an IR

Figure 8: EP monitoring of a human subject in a driving simulator.





(a) (b) (c)

Fig. 16. Wirelessly RF powered wall clock. (a) Rectenna element. (b) Front view of the clock with eight rectenna elements. (c) Back view of the clock showing the separate rectenna element's ground planes.

Share

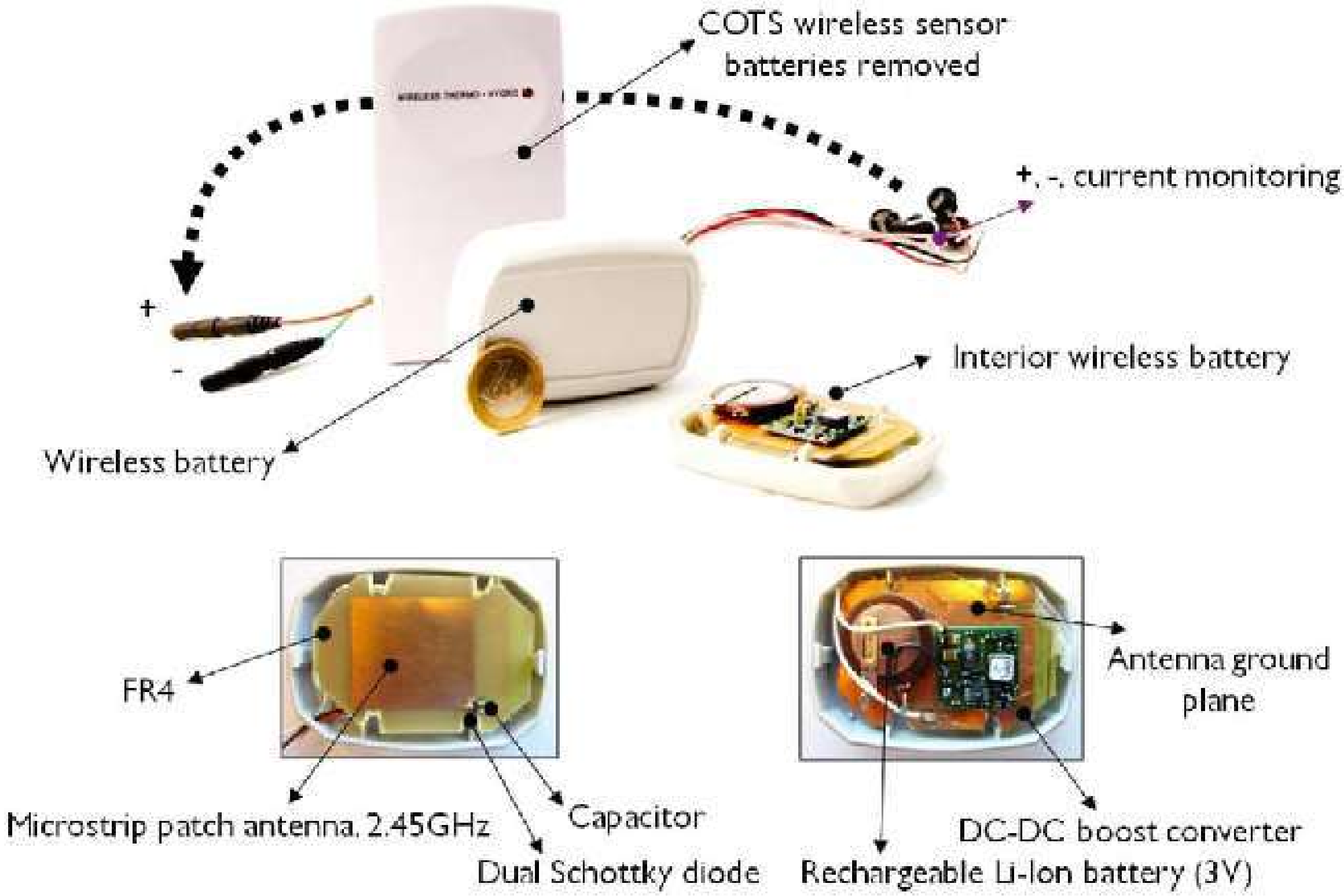
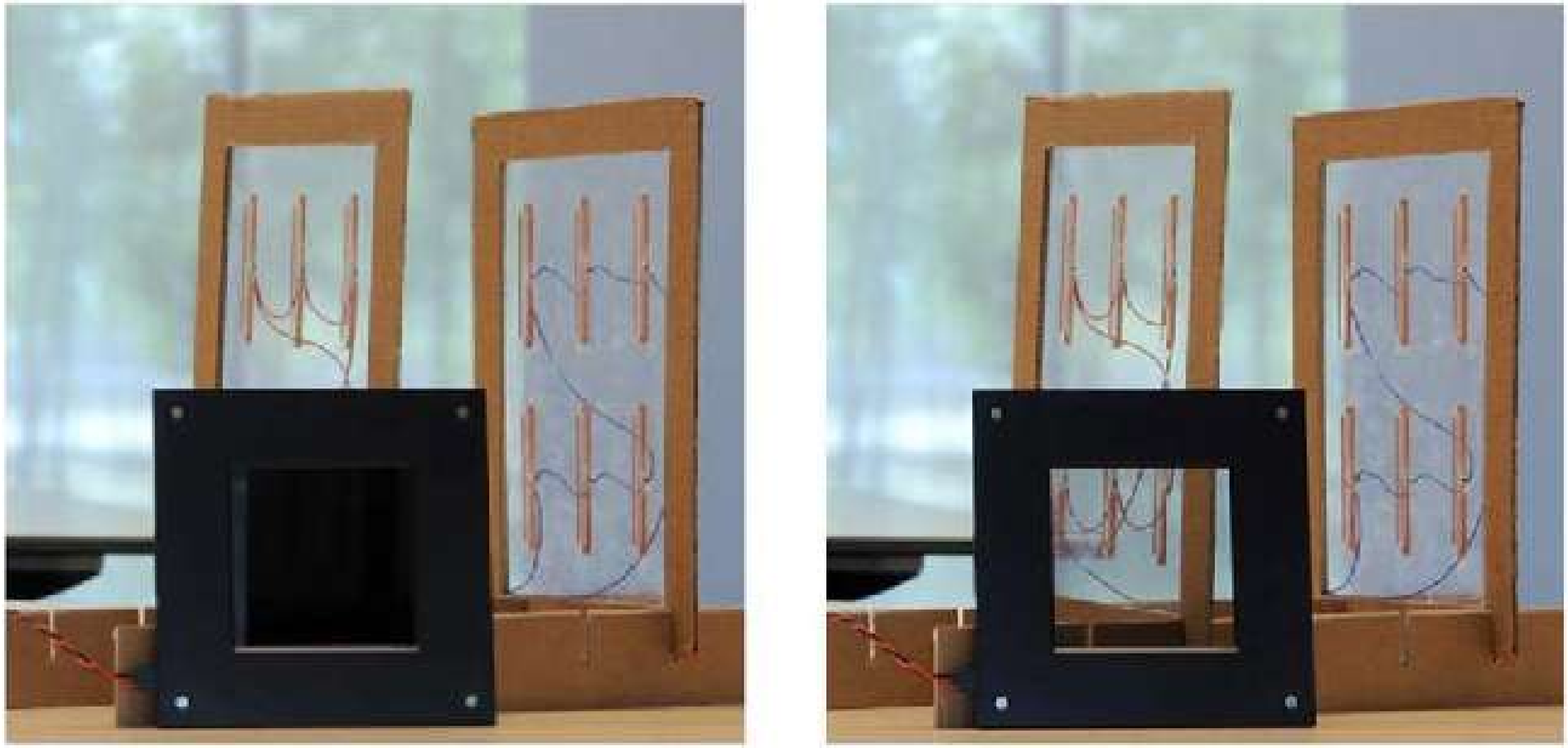


Fig. 20. Packaged 2.45-GHz remote RF battery charger and COTS 433-MHz temperature and humidity sensor. 433-MHz base station not shown.

Share



(a) (b)

Fig. 17. E-skin. (a) No voltage supplied: E-skin panel is opaque. (b) Voltage supplied: E-skin panel is optically transparent.

Share

Fig. 21. Wireless energy transport measurement setup. By optimizing the receiver location, a battery may be charged up to 18 m from the source.

Share

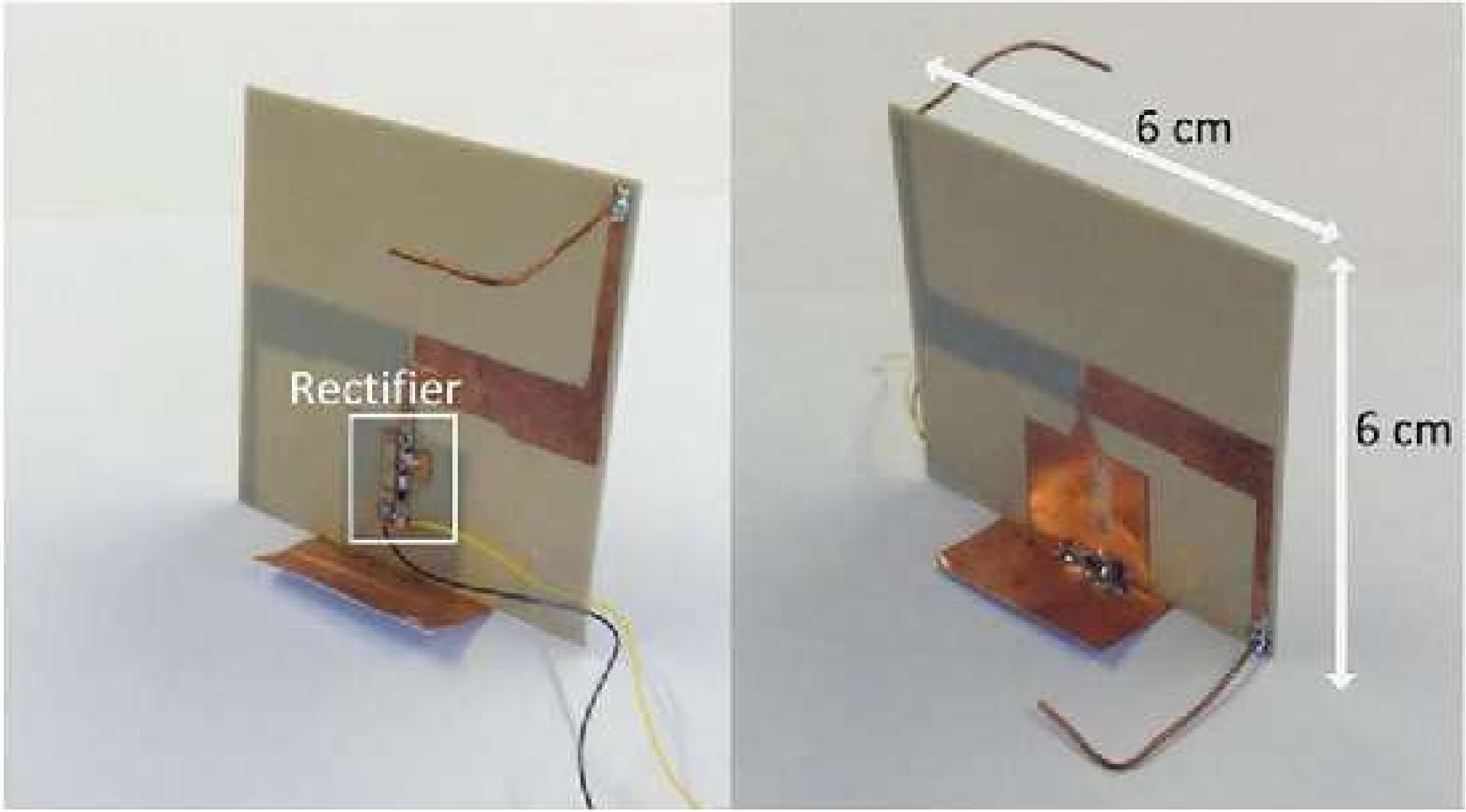
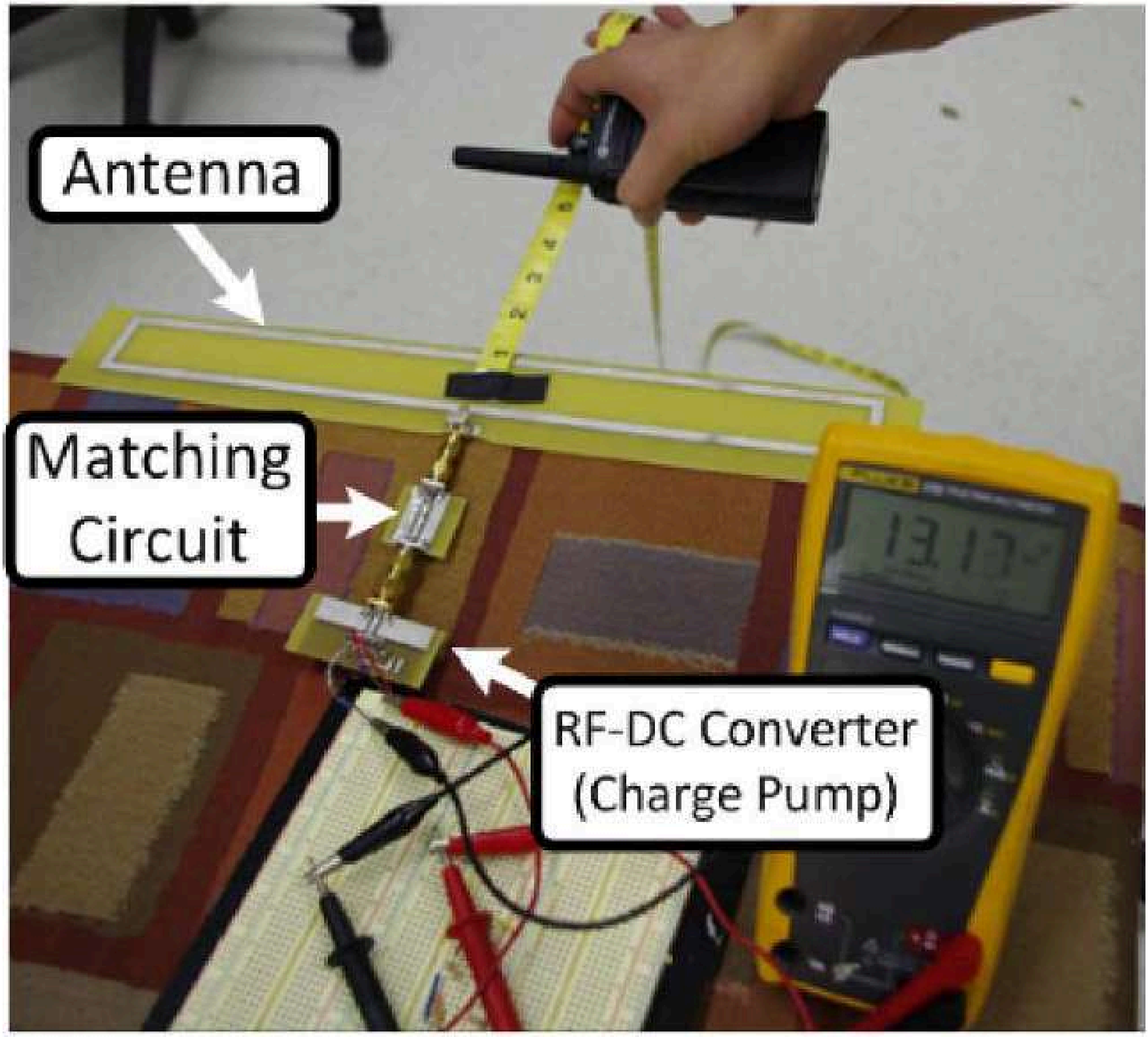
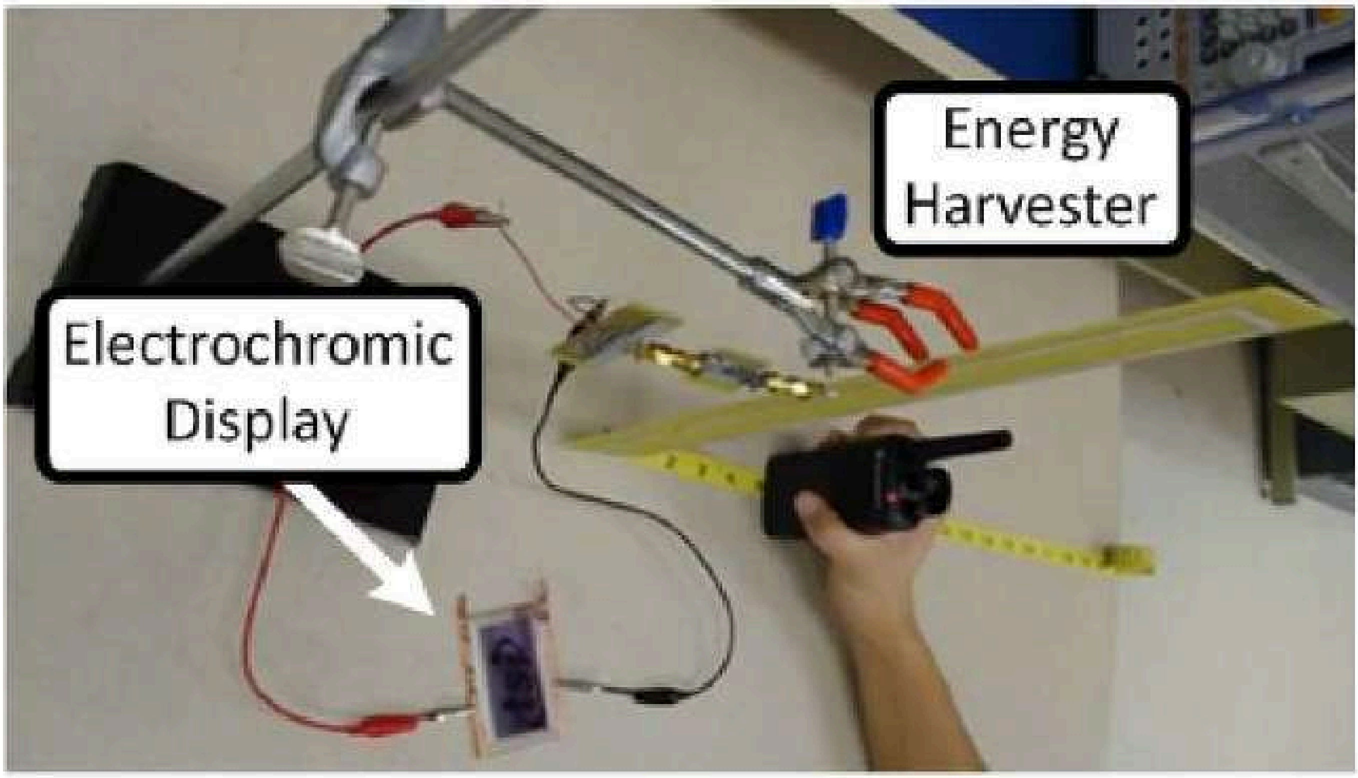


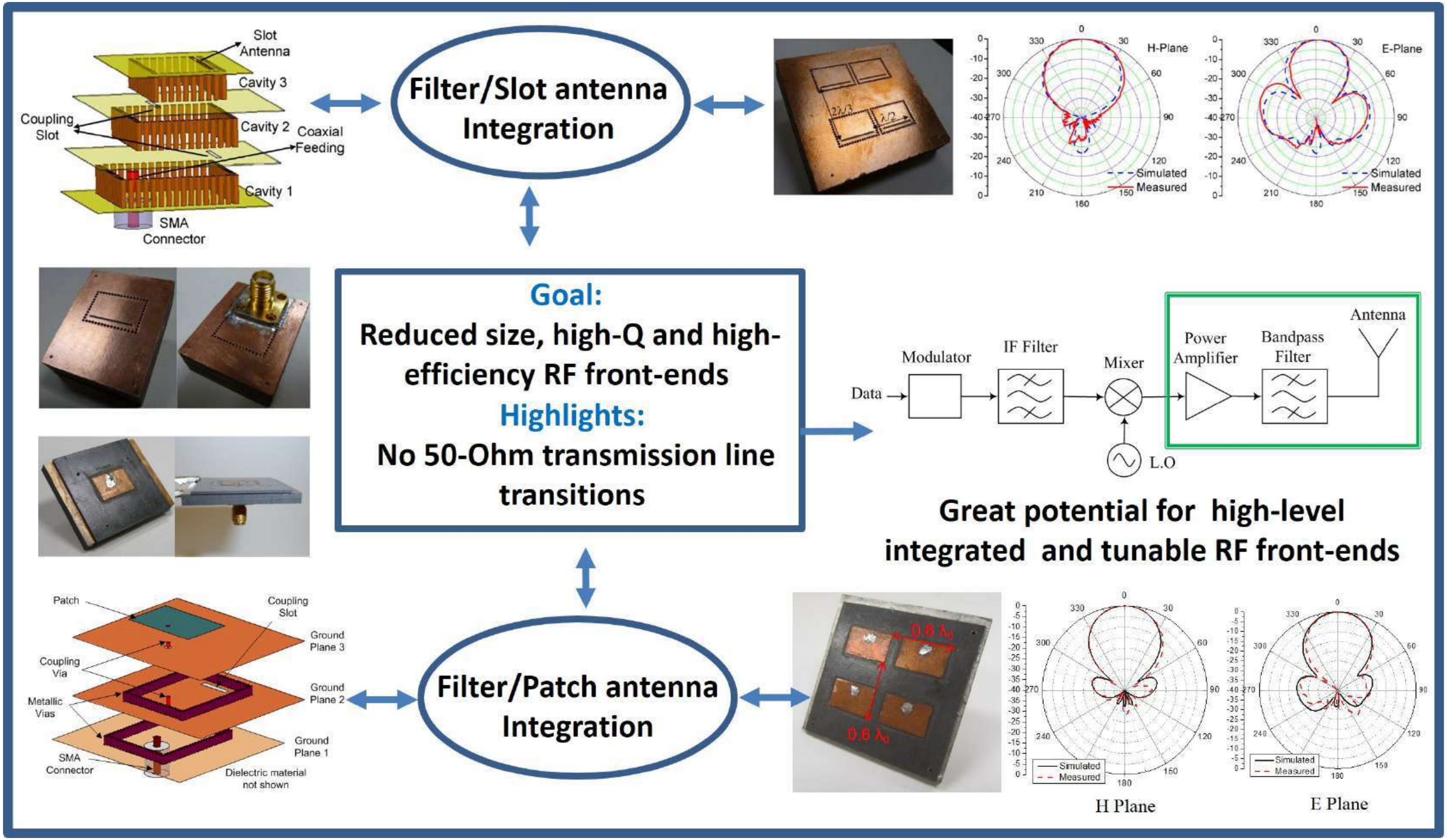
Fig. 16. Fabricated dual-band rectenna prototype [17].


Antenna
Matching
Circuit
RF-DC Converter
(Charge Pump)

(a)

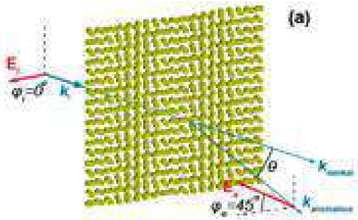

Energy
Harvester
Electrochromic
Display

(b)

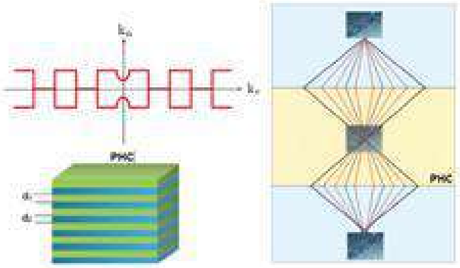

Slot Antenna
Cavity 3
Coupling Slot
Cavity 2
Coaxial Feeding
Cavity 1
SMA Connector
Filter/Slot antenna Integration
H-Plane
E-Plane
Simulated
Measured
Goal:
Reduced size, high-Q and high-efficiency RF front-ends
Highlights:
No 50-Ohm transmission line transitions
Data
Modulator
IF Filter
Mixer
L.O
Power Amplifier
Bandpass Filter
Antenna
Great potential for high-level integrated and tunable RF front-ends
Patch
Coupling Slot
Ground Plane 3
Coupling Via
Ground Plane 2
Metallic Vias
Ground Plane 1
SMA Connector
Dielectric material not shown
Filter/Patch antenna Integration
H Plane
E Plane

Recent Collaboration In Computational Nanophotonics at Purdue and Beyond

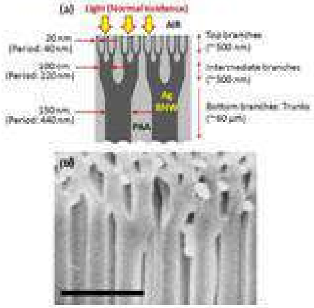
Chiral Metasurfaces
for Optical Activity
(the Shalaev group)



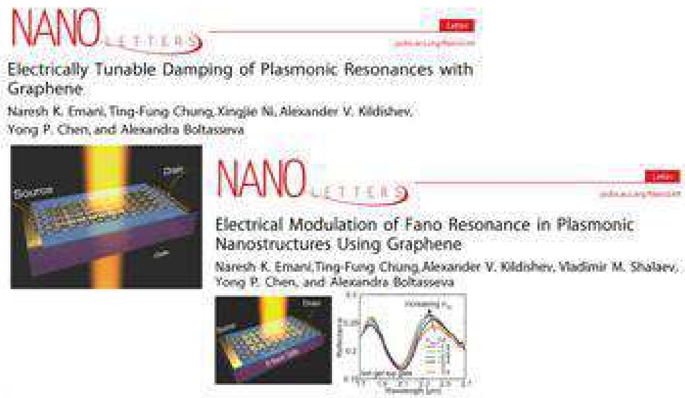
Nano-imaging and Nanoscope
Narimanov (Purdue)
Pendry (Imperal College)
Zhang (UC Berkeley)
Liu, UCSD



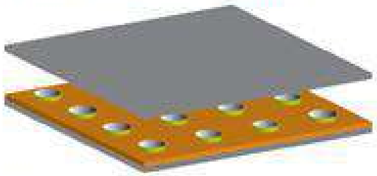
Optics of Branched Silver
Nanowires
(the Janes group)



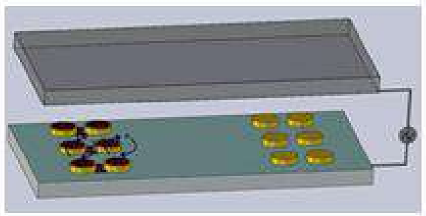
Dynamic Plasmonics with Graphene
(the Yong Chen group, the Boltasseva group)



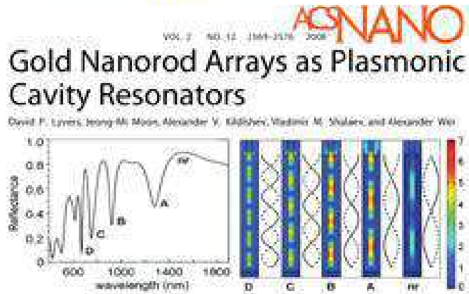
Compact Cavities and
Waveguides using
Reflecting Metasurfaces
(the Shalaev group)



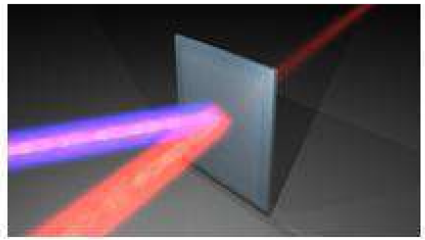
Hybrid Electro-Plasmonic
Tweezers
(the Wereley and Boltasseva
groups)



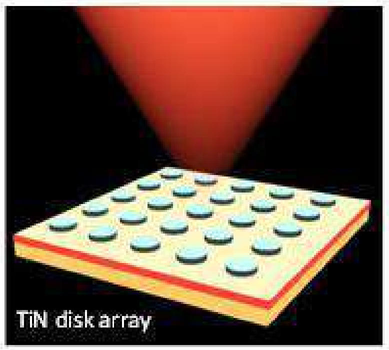
Au Nanorod Plasmonics
(the Wei group)



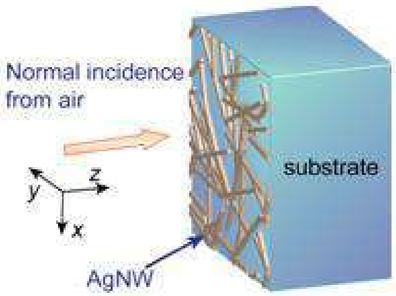
Dynamic Metamaterials and Devices
(the Boltasseva group)



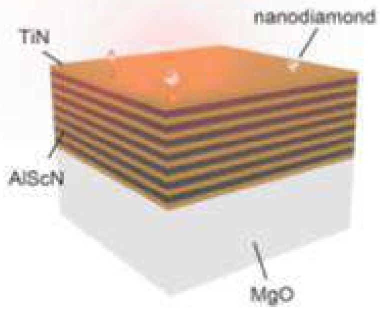
High temperature
thermal emitter for
thermo-photovoltaics
(the Shalaev, Shakouri,
Sands, and Bermel
groups)



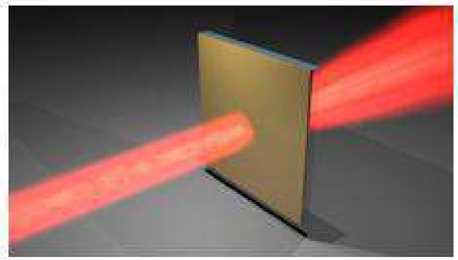
Ag nanowires-graphene
transparent conducting
electrodes (the Janes group)



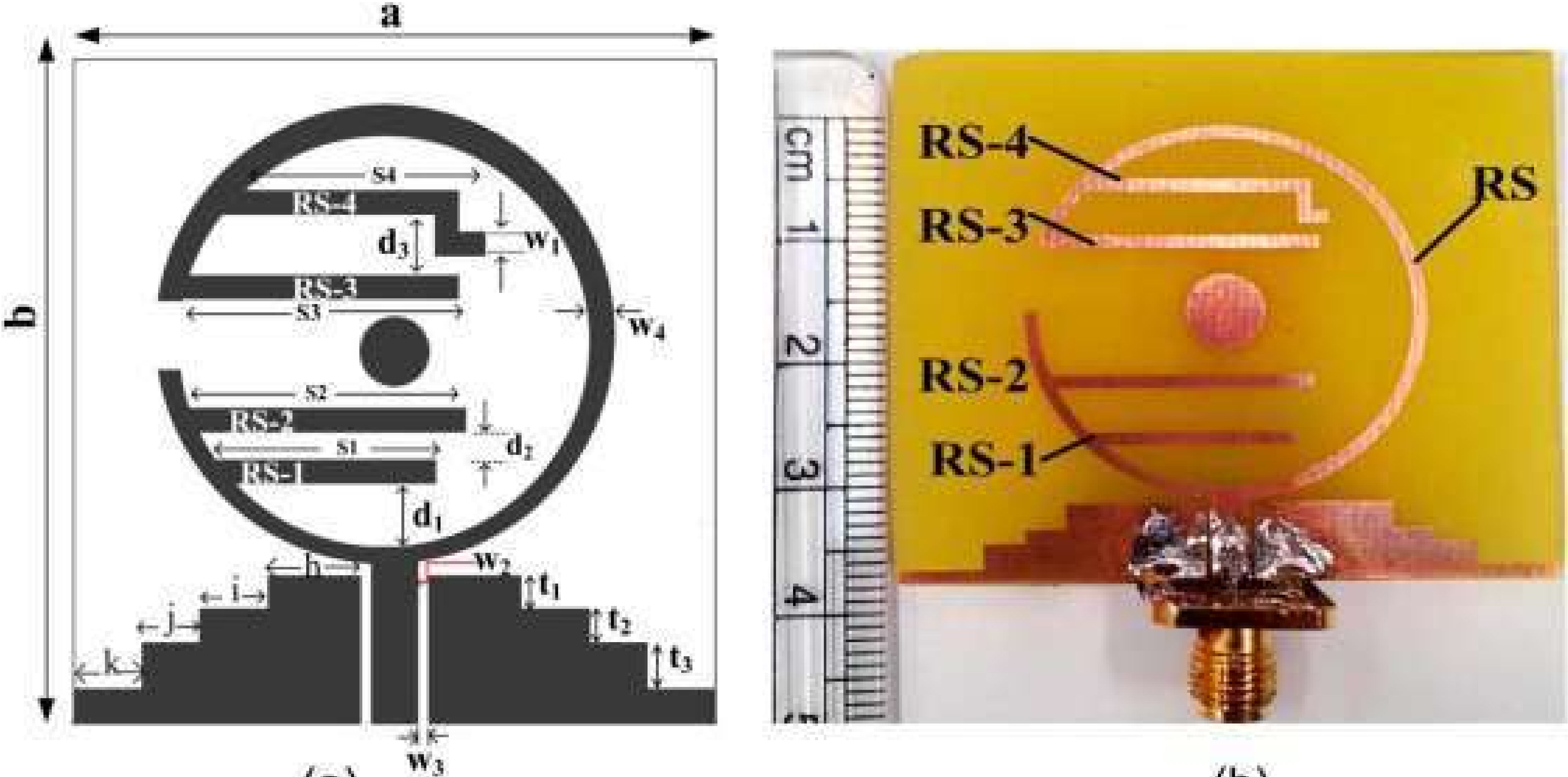
Enhanced single-photon
sources based on NV centers
and metamaterials
(the Shalaev group)



Nonlinear Optical Properties of
Alternative Plasmonic Materials
Bonner, Gavrilenko (NSU) with
the Boltasseva and Shalaev groups

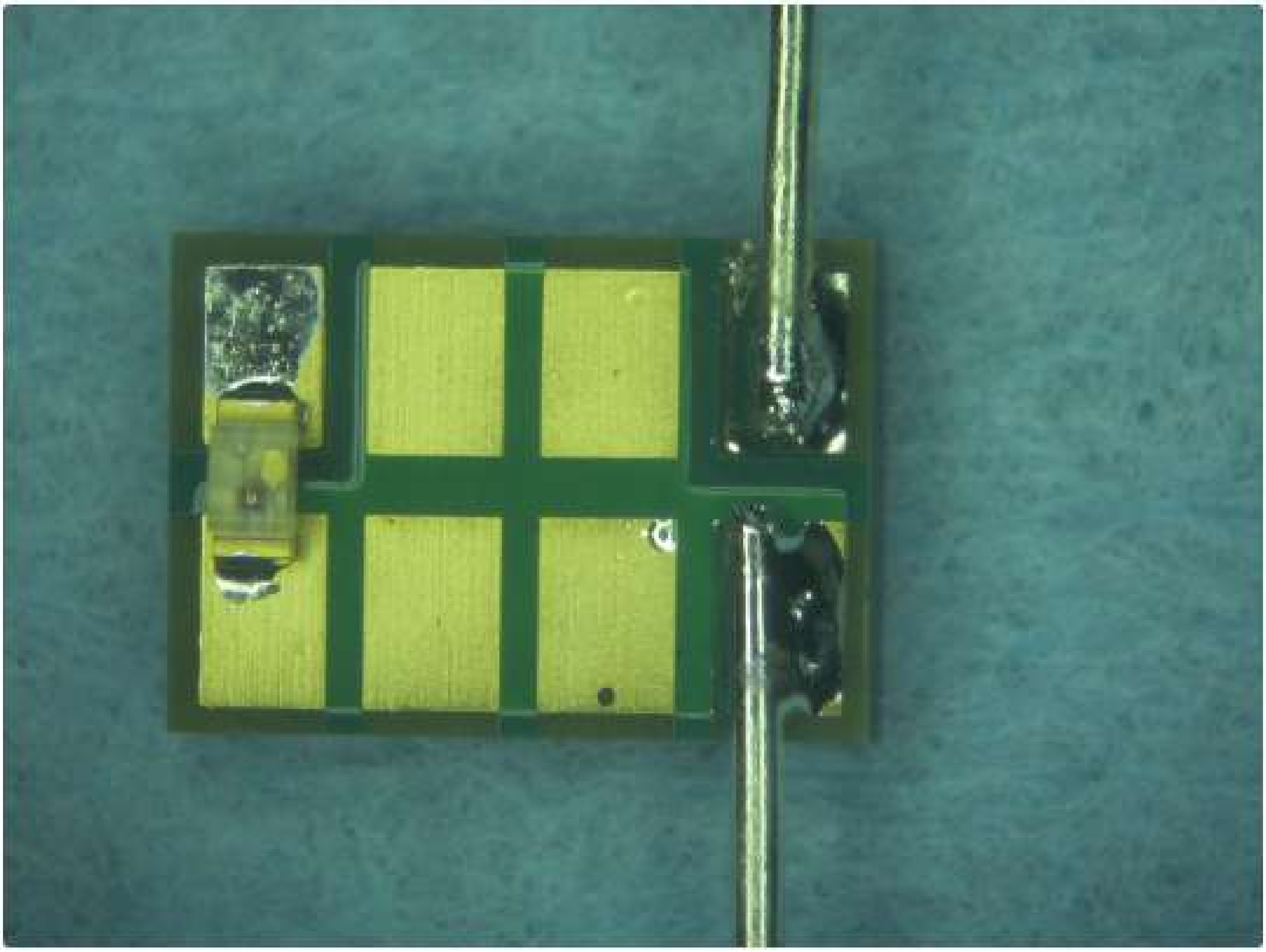



Tego Power Harvest Technology
Passive LED
PE0143
127.0.0.1
6:02
Stop Reading
Tag Events
EPC ID
Ant
Ct
Read


a
b
S4
RS-4
d_3
w_1
RS-3
S3
w_4
S2
RS-2
d_2
S1
RS-1
d_1
h
w_2
i
t_1
j
t_2
k
t_3
w_3
cm
1
2
3
4
RS-4
RS-3
RS
RS-2
RS-1

(a) (b)

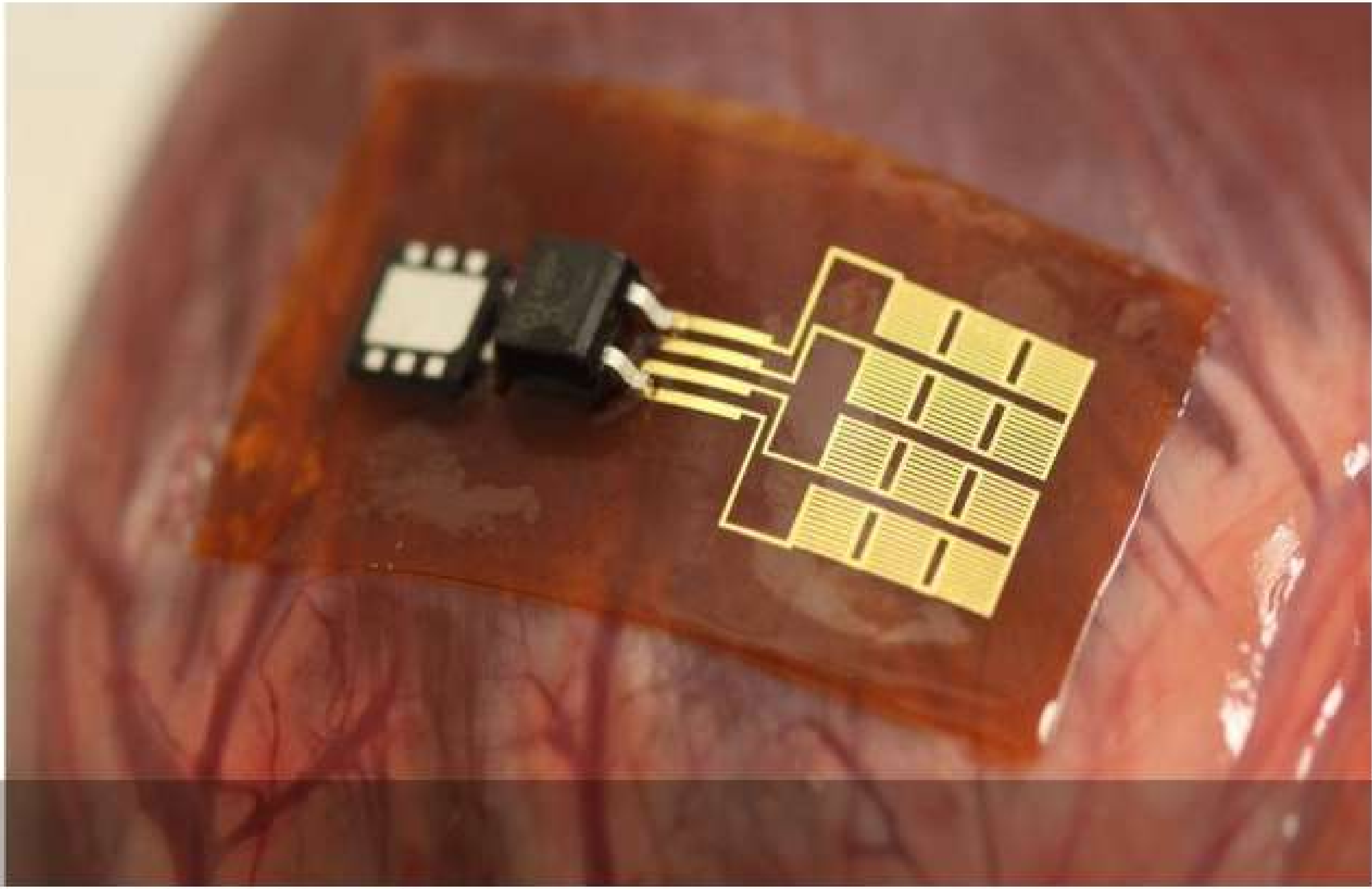
Step 1: Assembly Instructions



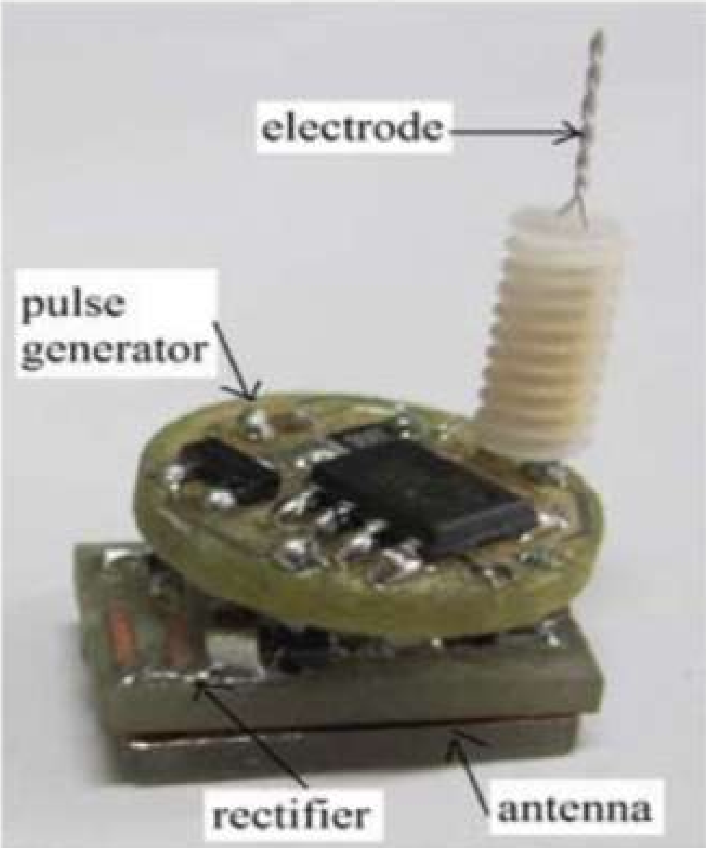
Cut the resistor wires off next to the resistor. These are just the right size at 1 1/8" long for a 2.5GHz dipole. Throw away the resistor and keep the wires.

Put solder paste on the module at pins 1 & 8 and at pins 4 and 5.Place the wires on pins 4 and 5 and solder carefully using tweezers to hold the wires (it will burn you otherwise). Solder at the lowest soldering temperature possible to avoid damaging the module. If the iron is too hot then you may damage the internal connections inside the module. Use a minimum of time for soldering (<10secs). The wires work as a dipole antenna to collect the 2.5GHz energy into the RF (Radio Frequency) Input of the module.

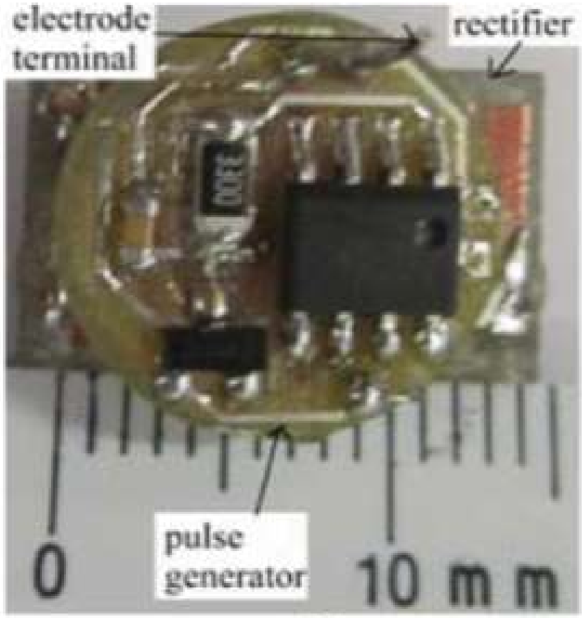
Place the LED with the anode (positive side) onto pin 1 and the cathode (negative side) on pin 8 and solder carefully. For those not familiar with LEDs, the triangle symbol of the diode should point to the ground pin of the module (pin 8). Your final microwave harvester should look like figure 2



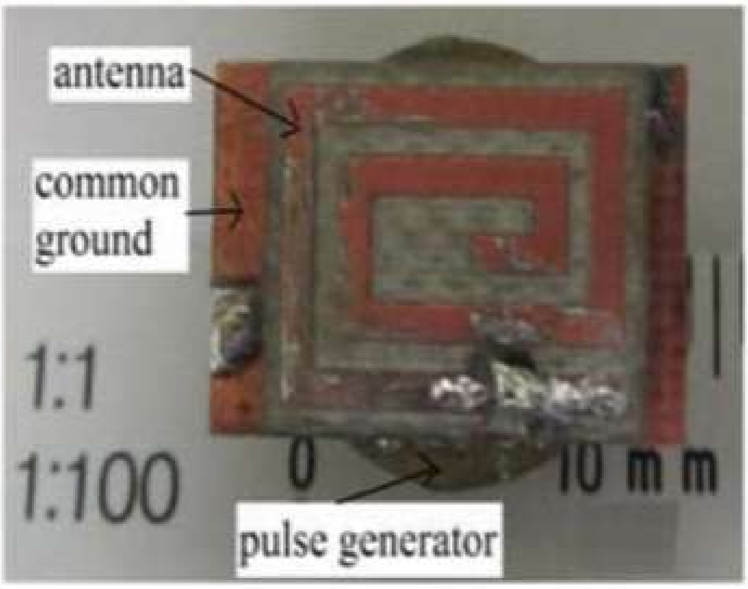
The implant mounted on the heart of a cow


electrode
pulse
generator
rectifier
antenna

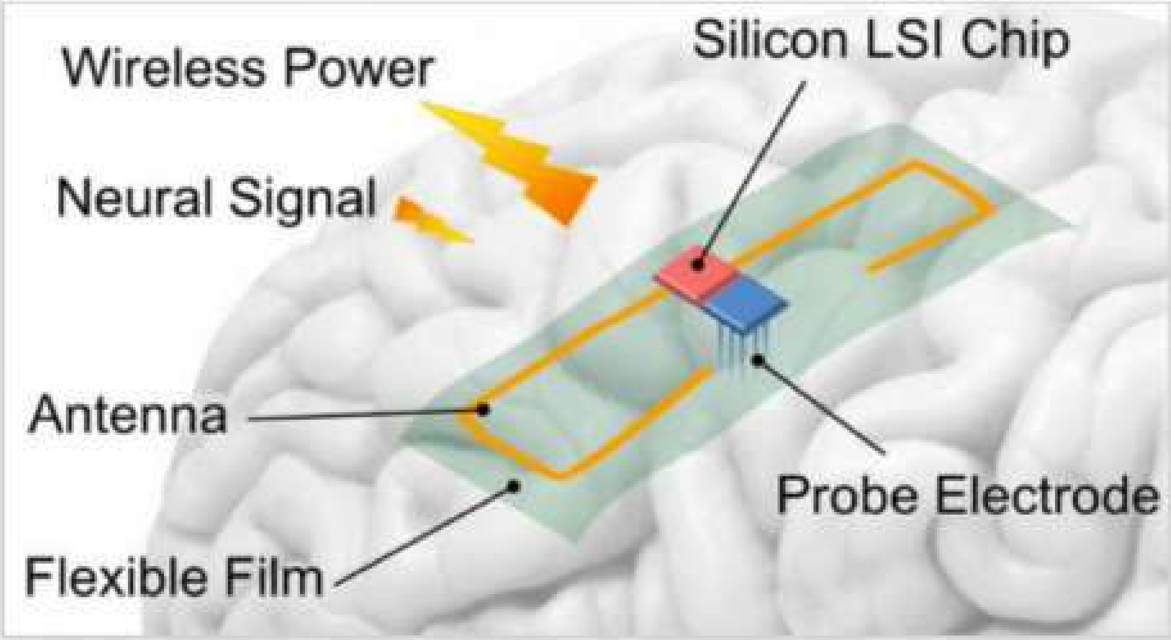
(a)


electrode
terminal
rectifier
pulse
generator
0
10 m m

(b)


antenna
common
ground
1:1
1:100
0
10 m m
pulse generator

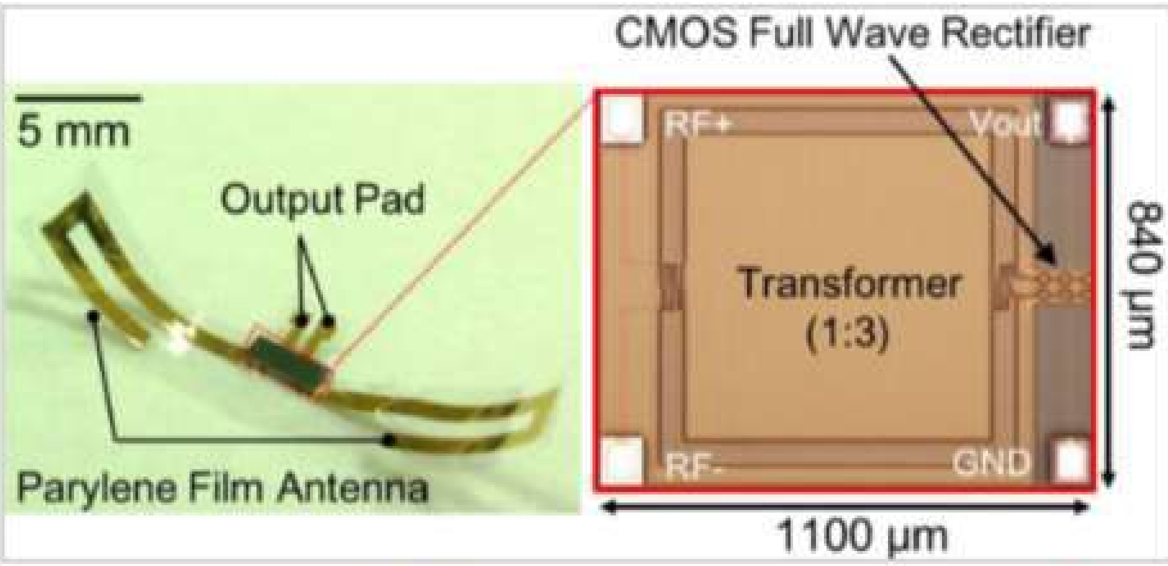
(c)



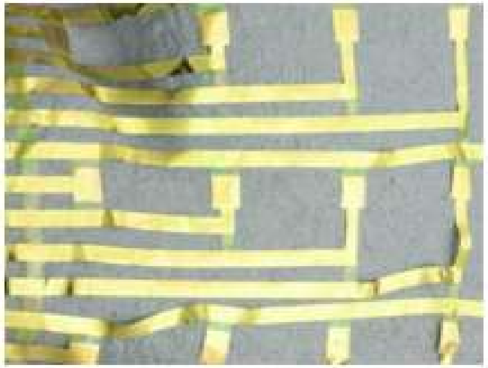
Schematic of proposed architecture of an implantable wireless-powered neural interface system that can provide power to implanted devices. Adding a transmitter chip could allow for neural signals to be transmitted via the antenna for external processing. (credit: Toyohashi University Of Technology)

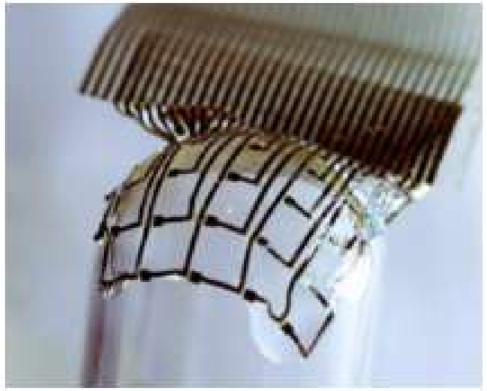
A research team at Toyohashi University of Technology in Japan has fabricated an implanted wireless power transmission (WPT) device to deliver power to an implanted neural interface system, such as a brain-computer interfa (BCI) device.

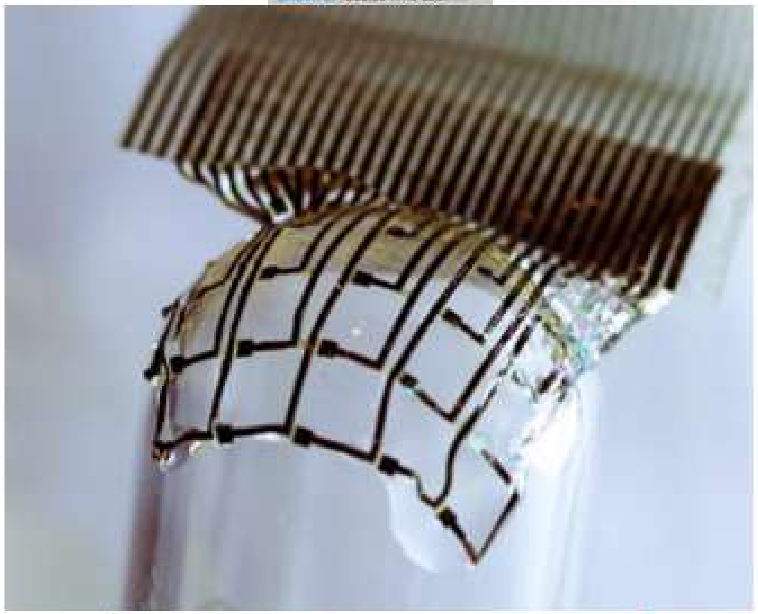
Described in an open-access paper in *Sensors* journal, the system avoids having to connect an implanted device to a external power source via wires through a hole in the skull, which can cause infections through the opening and risk c infection and leakage of the cerebrospinal fluid during long-term measurement. The system also allows for free-movir subjects, allowing for more natural behavior in experiments.

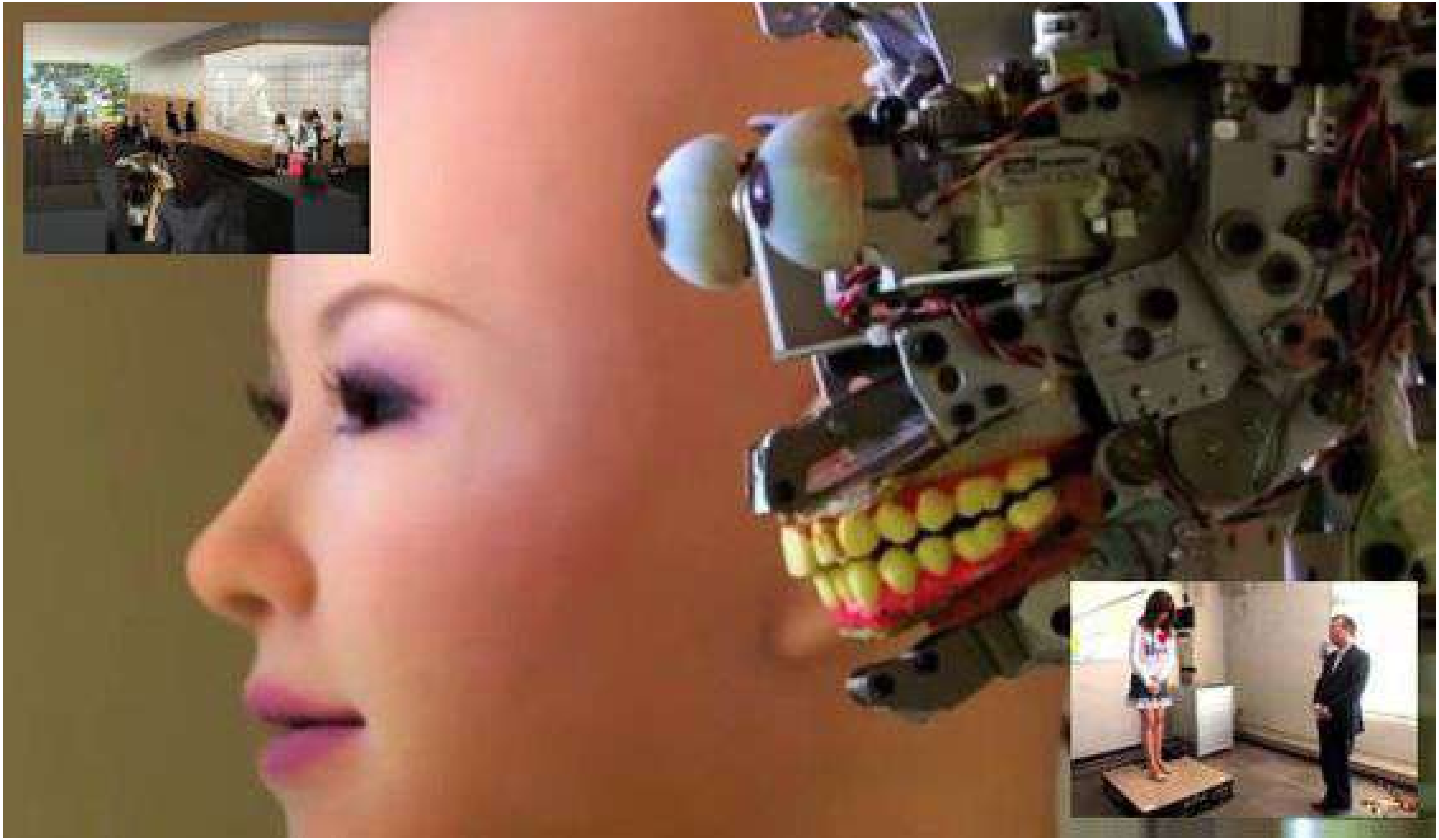


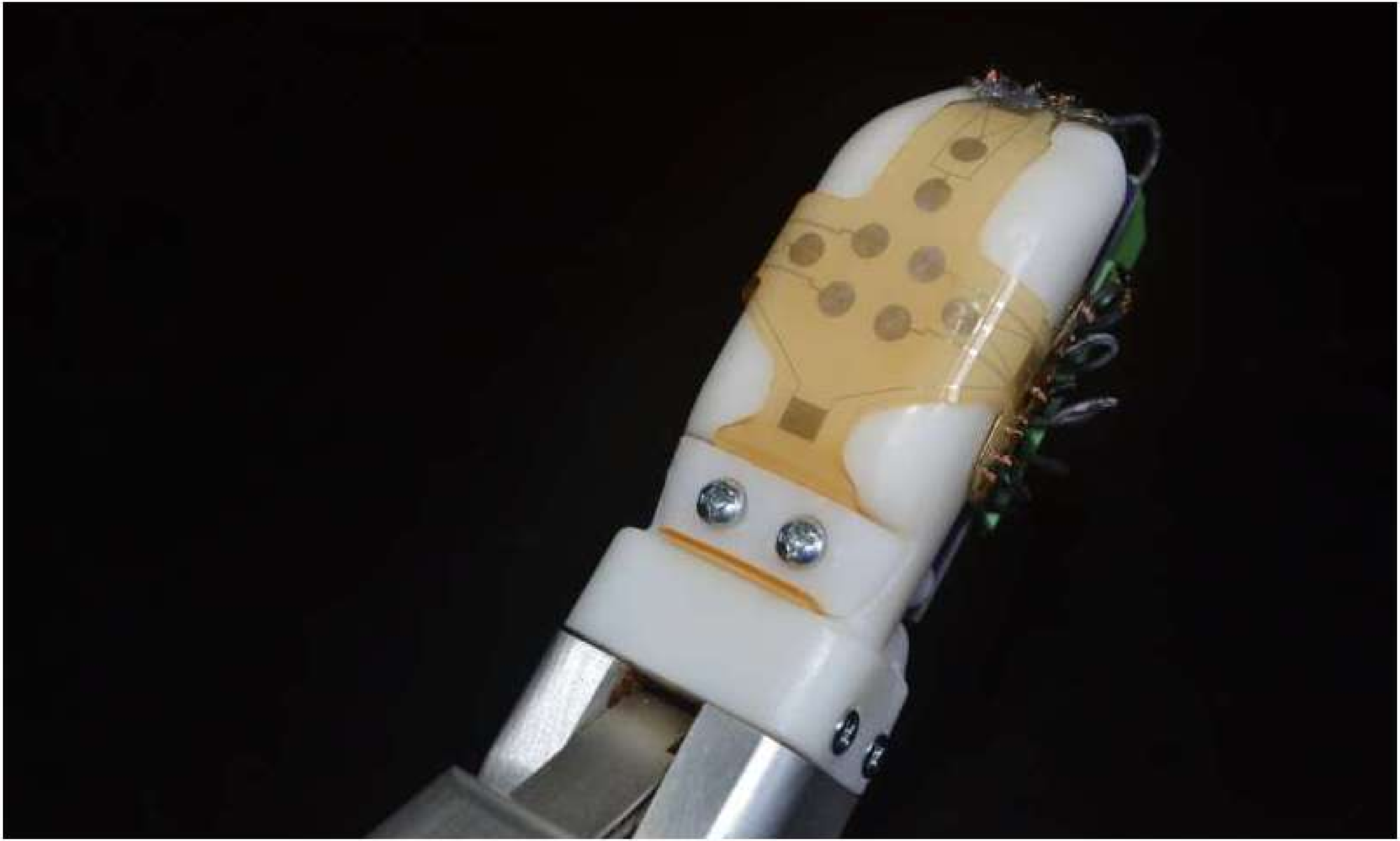
Photographs of fabricated flexible antenna and bonded CMOS rectifier chip with RF transformer (credit: Kenji Okabe et al./Sensors)



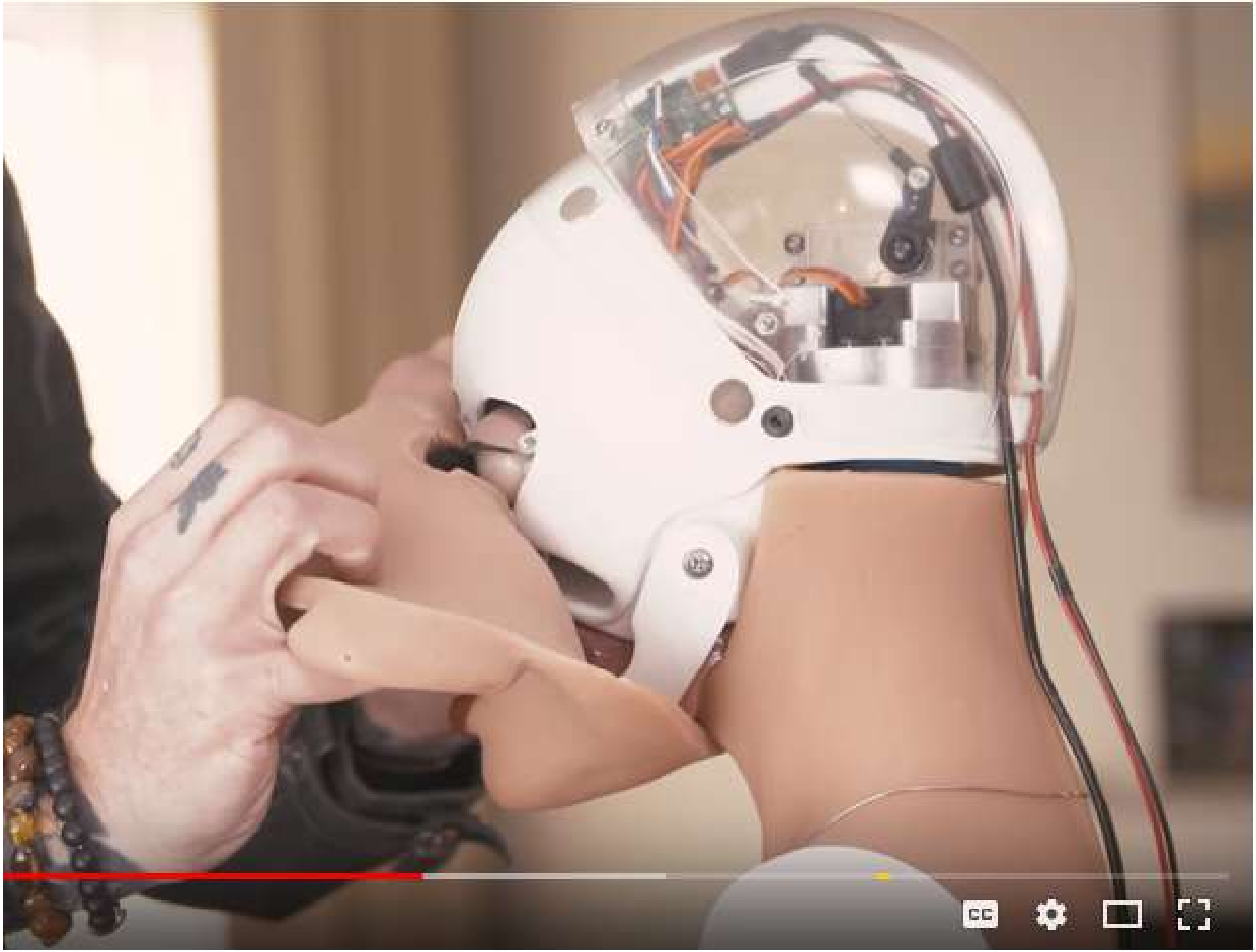






The bio-inspired sensor skin developed by University of Washington and UCLA engineers can be wrapped around a finger or any other part of a robot or prosthetic device to help convey a sense of touch. Credit: UCLA

Fully functioning sex robots are coming to the UK and their creator is promising "an experience like no other."

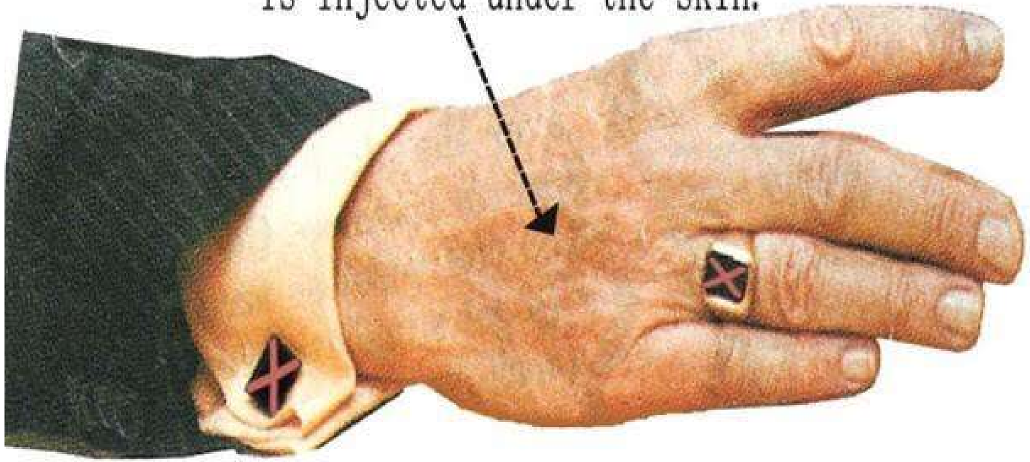


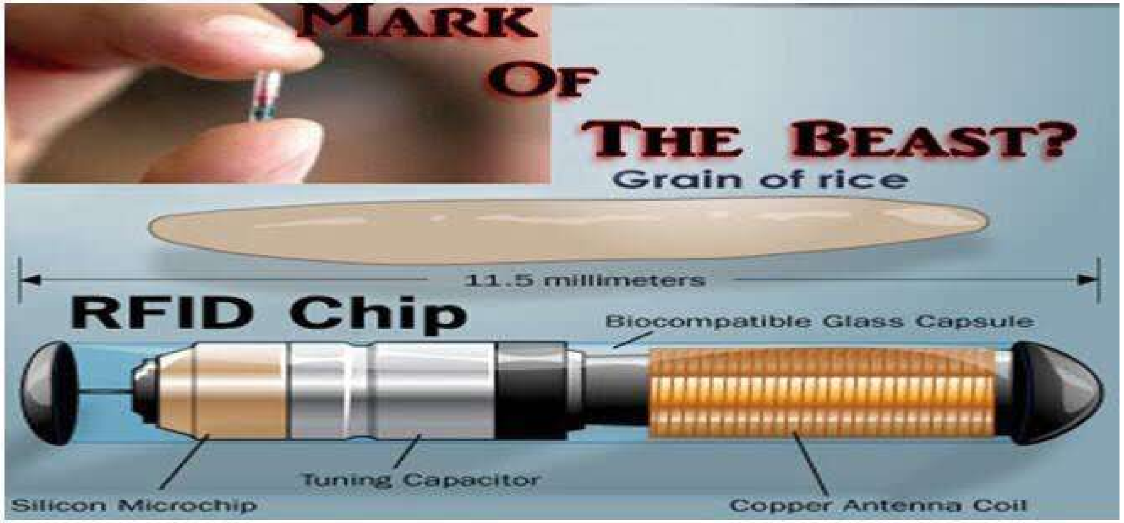
MARK OF THE BEAST 666 TECHNOLOGY IS HERE

9 780975 996508

6 6 6

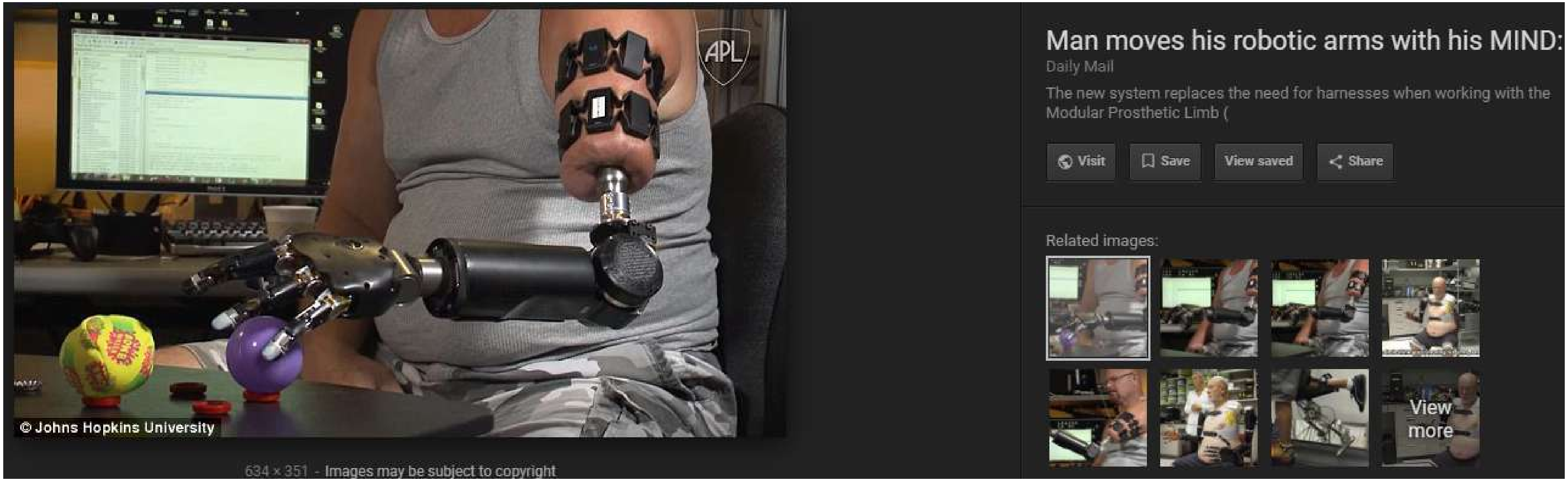
The miniaturized radio frequency bar code strip
is injected under the skin.





He causes all, both small and great, rich and poor, free and slave, to receive a mark on their right hand or on their foreheads, 17 and that no one may buy or sell except one who has the mark or the name of the beast, or the number of his name.

Revelation 13:16, 17


APL
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Man moves his robotic arms with his MIND:
Daily Mail
The new system replaces the need for harnesses when working with the Modular Prosthetic Limb (
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Related images:
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There's a new gadget called the "Microwave Regenerative Converter" from Nihon Dengyo Kosaku Co Ltd that

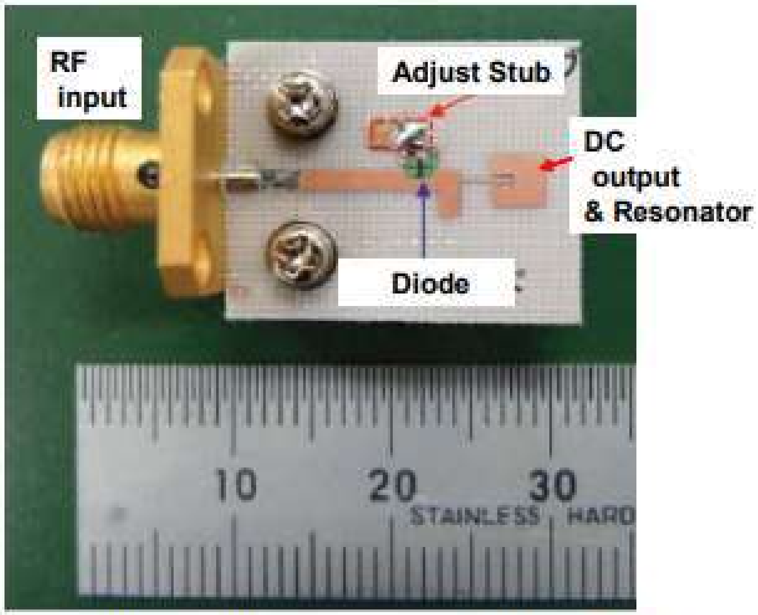


Fig.7: Revised low power 24GHz rectenna

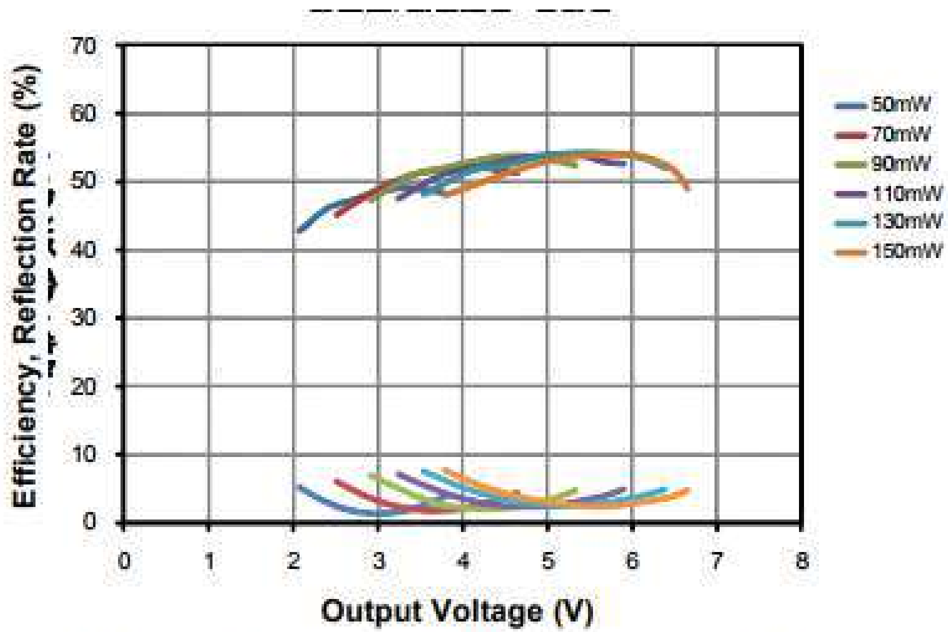
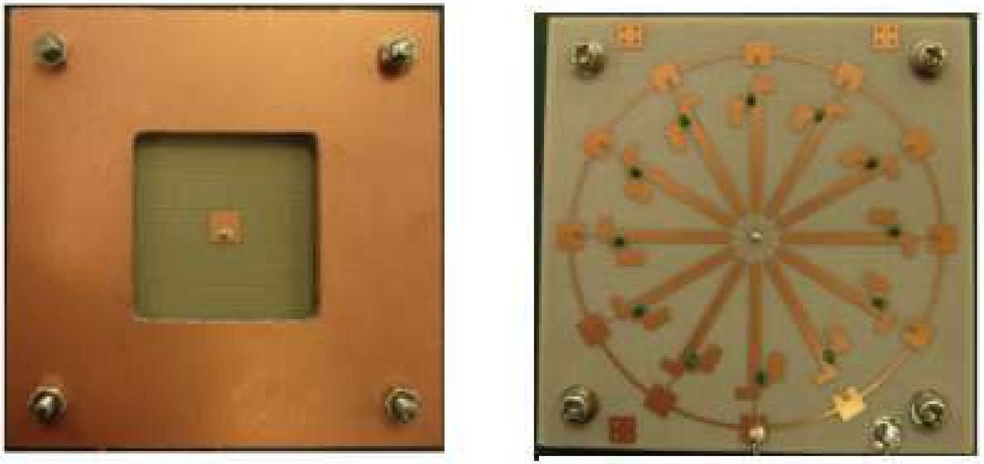


Fig.8: RF-DC conversion efficiency of revised rectenna



Antenna (Front)

12-way Power Divider
+ 12 Rectifying Circuits (Back)

Fig.9: High power 24GHz rectenna

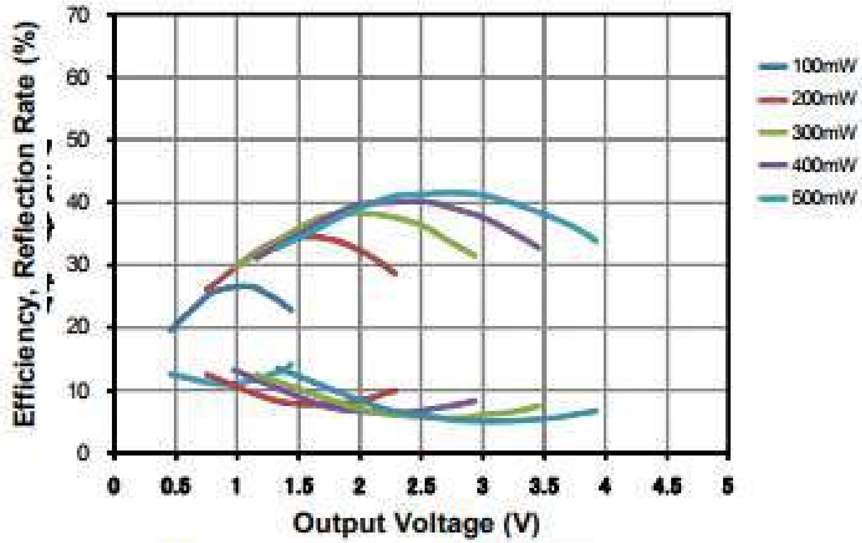


Fig.10: RF-DC conversion efficiency
of high power rectenna

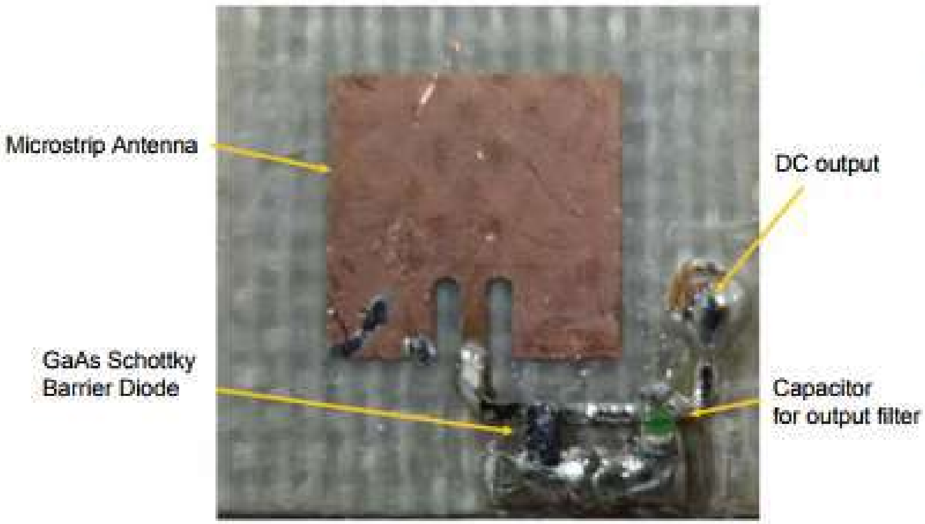


Fig.3: ordinary power rectenna at 24GHz

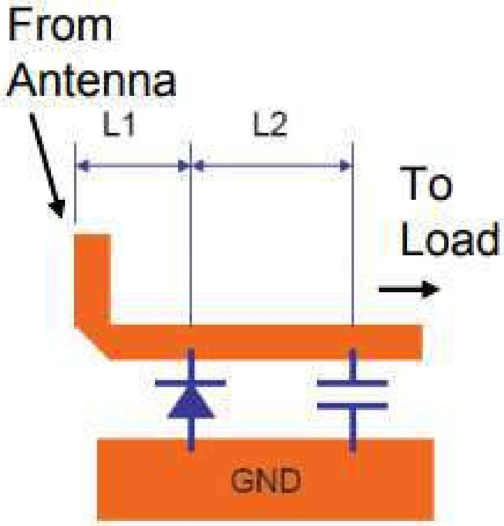


Fig.4 Rectifying Circuit

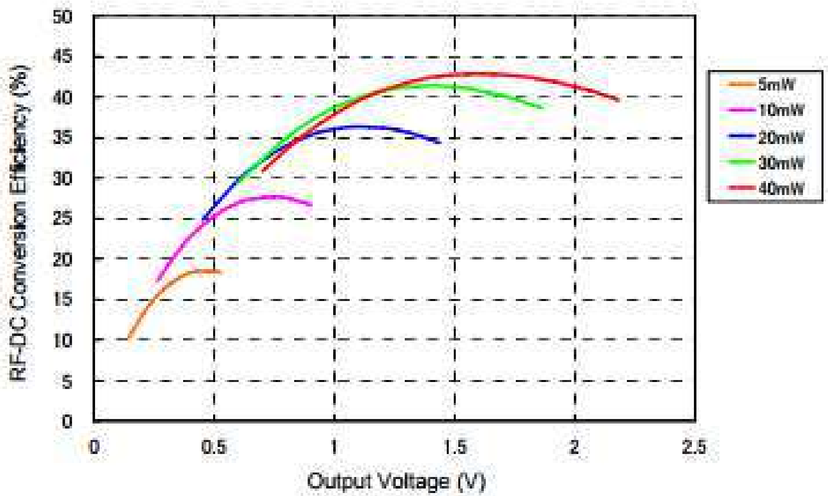


Fig.5: RF-DC conversion efficiency of ordinary power 24GHz rectenna

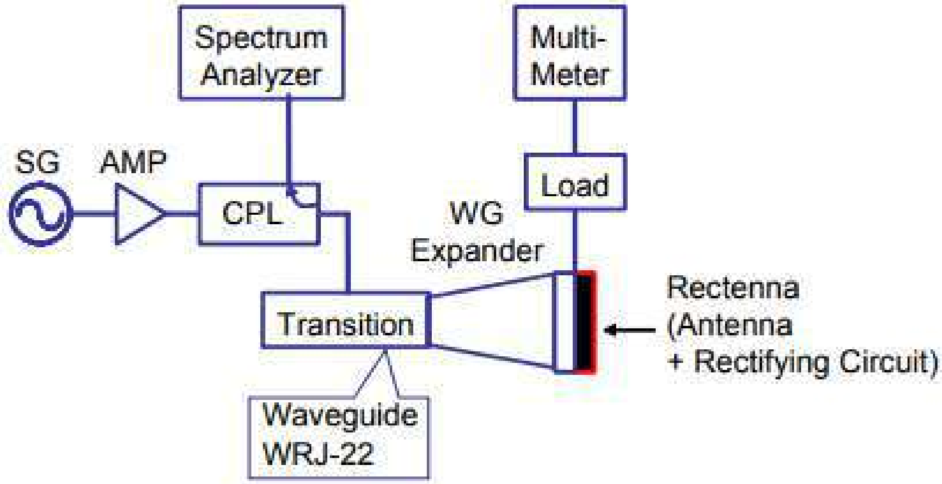
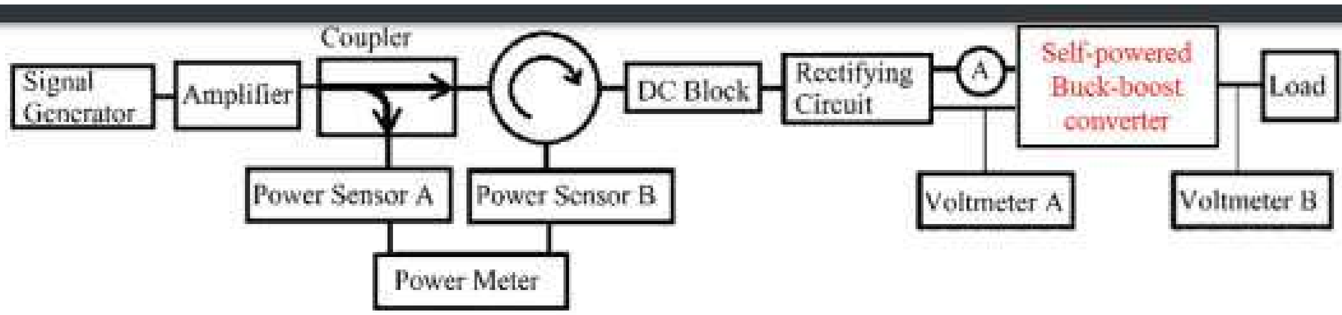
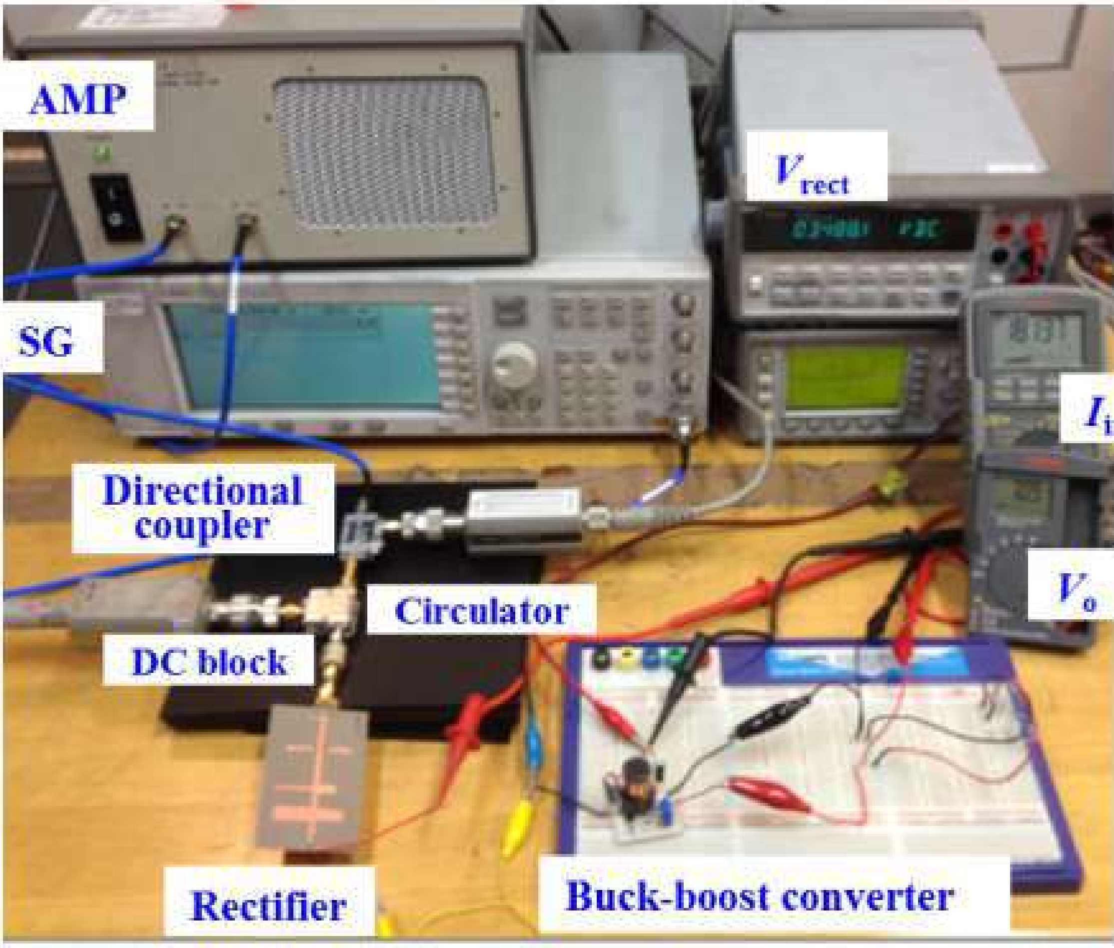


Fig.6 Measurement Setup



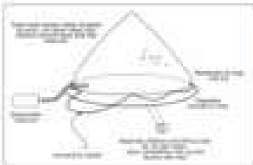
(a)



(b)

Figure 4.12: Experiment setup for measuring the efficiency of the self-powered RF-DC-DC circuit. (a) Experiment setup. (b) Experiment photograph.

Aquamate Solar Still



Manufactured to ISO 9002
NATO Stock no. 4610-66-144-2646
Aquamate product manufactured by Echomax

- Tear open pack for emergencies
- Easily inflated by mouth
- Lanyard fixing
- Pure water stored in separate pouch
- High visibility orange plastic
- Proven reliability
- Made to ISO 9002 with NATO stock number

Aquamate Inflatable Solar Stills are light, compact, and very easy to use. They utilize solar radiation to distill and collect pure drinking water from sea or impure water.

The still will produce 500 to 2000 ccs (1 to 4 pints) of water per day and has been used by military and civilian services throughout the world for the past 40 years.

Packs neatly away to 26 x 23 x 7cm. weighs just 1075 grams. At a fraction of the cost of a mechanical or electrical unit this is an ideal addition to the safety grab bag for any ocean going yachtsman.

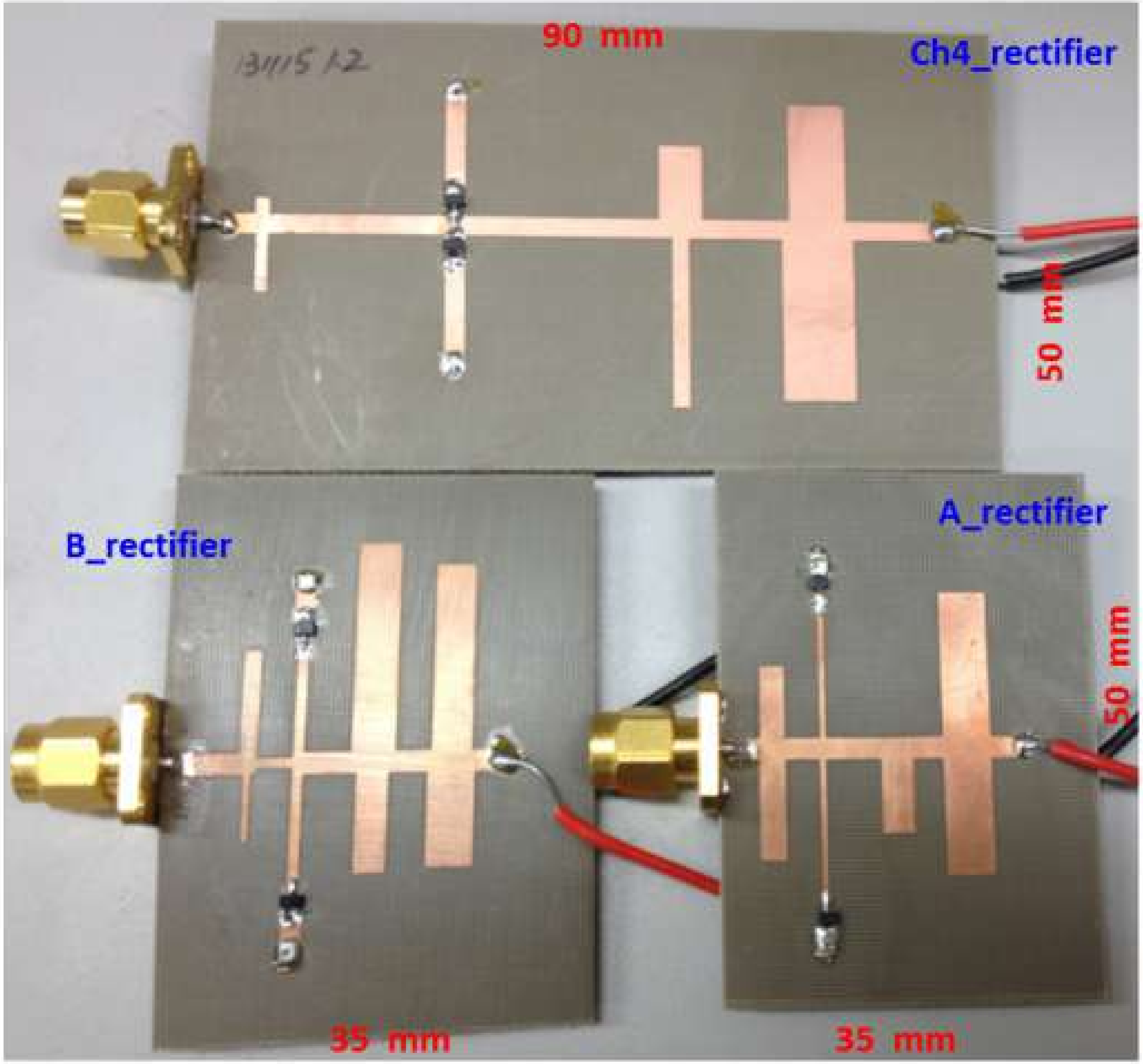


Figure 5.7: Photograph of designed rectifiers: A, B and Ch4_rectifier.

Hz

Hz = oscillation per second

Hz	Brainwave Activity	Frequency Description
1.600 – 217		**WLAN//WI-FI/wireless Internet/network and microwave ovens** transmit at the ultra high frequency 2,45 GHz which disturbs the brain's own clock frequency. WLAN pulsation varies. The frequencies of the microwave oven change the molecules and contaminate the inner and outer environment. Increasing infertility and cell mutations are the consequences. Bluetooth technology, e.g. the wireless headset transmits with a pulsation of 1600 Hz in the frequency band 2,45 GHz (= 2450 MHz) **Mobile phones = 217 electroshocks per second into the nervous system** = the wireless society short-circuits us and we suffer from disconneXion syndrome.
217 – 100	"Ultra" Beta	3G mobile phones transmit by significantly more powerful intensity and the pulsation varies. This unnatural intruder causes electrostress which "might" lead to brain stress due to the rapid pulsating electroshocks per second. We become electric and are being disconnected from the Now. The EU REFLEX study from 2003 with 12 research teams from 7 nations proved that our DNA is damaged and cell mutations occur. The results confirm the Freiburg Appeal from 2002 with more than 1.300 worried doctors, the Bamberger Appeal from 2004, and the Bamberger doctor's letter from 2006. **Cordless DECT phones = 100 electroshocks per second into the nervous system** Cordless DECT technology in private homes or in companies transmit at a frequency pulsating at 100 Hz - non-stop 24/7/365.
100 – 50	"Hyper" Beta	When connected to the mains and switched on it transmits, also when it is on stand by. The intensity of cordless phones connected to traditional wired phone systems are much higher than the intensity of cell phones. The base unit equals a mobile phone antenna - just this one is often placed on bed tables or close to where people live, eat, and sleep. It disturbs our brain's centre for sleep, life energy, and recovery in the Alpha state - we burn out. **The base of the brain** vibrates at 100 Hz - but not pulsated. That is our centre for creativity adn important for spiritual development - getting to know one self. Disturbances create a chain reaction throughout the entire endocrine system and there- by cause hormonal disturbances - infertility?
50 – 33	"High" Beta	**The electric current in the mains oscillate at 50/60 Hz** Even the AC (alternating current) in television sets, computers and the switches in ordinary homes influence our cells in an unnatural way. The term electrostress has been known as a medical disease in several countries since at least 1969. **We are being disconnected from the wisdom of the Now by so-called knowledge** Stress, fear, anxiety, depression, and burn out constantly increase when we are bombarded with knowledge and information through all channels. We are being held in a state of "High" Beta. We become more aggressive, impatient, and short-minded. We become imprisoned in our mind - the MATRIX left brain mentality = limitation and resistance.
33		**At 33 Hz and above nervousness, panic, and anxiety starts**
33 – 13	Beta	**Consciousness constantly alert, increase of stress, "fight or flight mechanism"** Thinking and concentration. Alertness, analytical problem solving, tense, stress, agitation, discord, and mental unbalance. As the frequency increases we disconnect more and more from what is in the Now. The joy of Life decreases. Our joy centre in the brain vibrates at 17,5 Hz. TETRA mobile phones transmit with a pulsating frequency of 17,65 Hz which seriously disturbs the Calcium-ion flow in and out of the cells of the brain.Police and rescue services all over Europe are destined to use TETRA systems.
13 – 7	Alpha & omega	**Responsibility and action = always in the Now = Flow. Accept is the first step** Living in the Now is the key to understanding and new consciousness. A state of calmness. Light awareness and alertness. Increased learning ability and sensitiveness. A state of Unity between body and Spirit. It is a relaxed, harmonious, energized awaken state like a light meditation. We are aware and present in the Now in Alpha - den real world. The Limbic Centre in the brain vibrates with 12,5 Hz - it is the centre for sleep. Life energy, healing, and recovery. The limbic centre is closely related to our feelings. **The Pineal Gland** is the superior gland in the brain. It vibrates at 10 Hz being the frequency for our nerve and time centre. The Pineal Gland produces the transmitter Melatonin which controls and regulates the other hormone producing glands and the
7 – 3	Theta	immune system. Melatonin is particularly being produced at night where we are asleep. Darkness and silence are both very important factors. Melatonin has a protecting effect against cancer. The Pineal Gland is very sensitive towards electromagnetic influences. Both light and sounds are electromagnetic signals at different frequencies. Microwaves affect all cells and especially the Pineal Gland. Imbalance in the Pineal Gland causes increased mental activity which "might" lead to burn out syndrome. **Meditative state. Deep relaxation.** Increased creativity and vivid imagination. Access to what is normally unconscious potential. Connected-ness in general is acknowledged in a wider context. Being able to connect-the-dots of the "big picture".
3	Delta	**Regeneration and harmonious balance.** The frequency band 3-12,5 Hz is the vitality "field". We "recharge", recover, and maintain homeostasis - the dynamic balance that keeps us alive. Our immune system strengthen, and our sleep is invigorating. In this field we get energy, Life force, and the power needed for a modern Life style. **Very deep relaxation.** Deep sleep. Trance. Deep hypnosis.

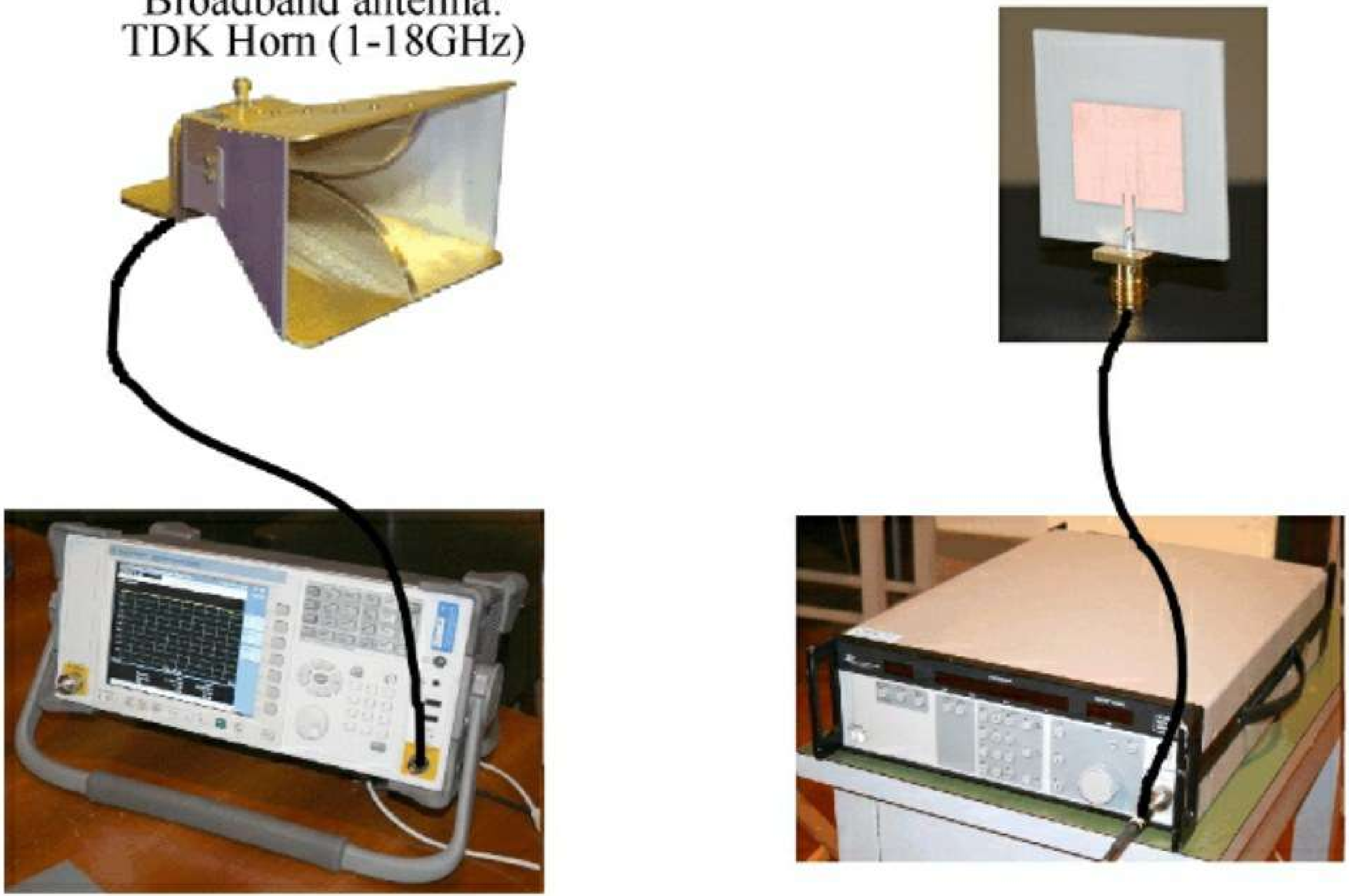
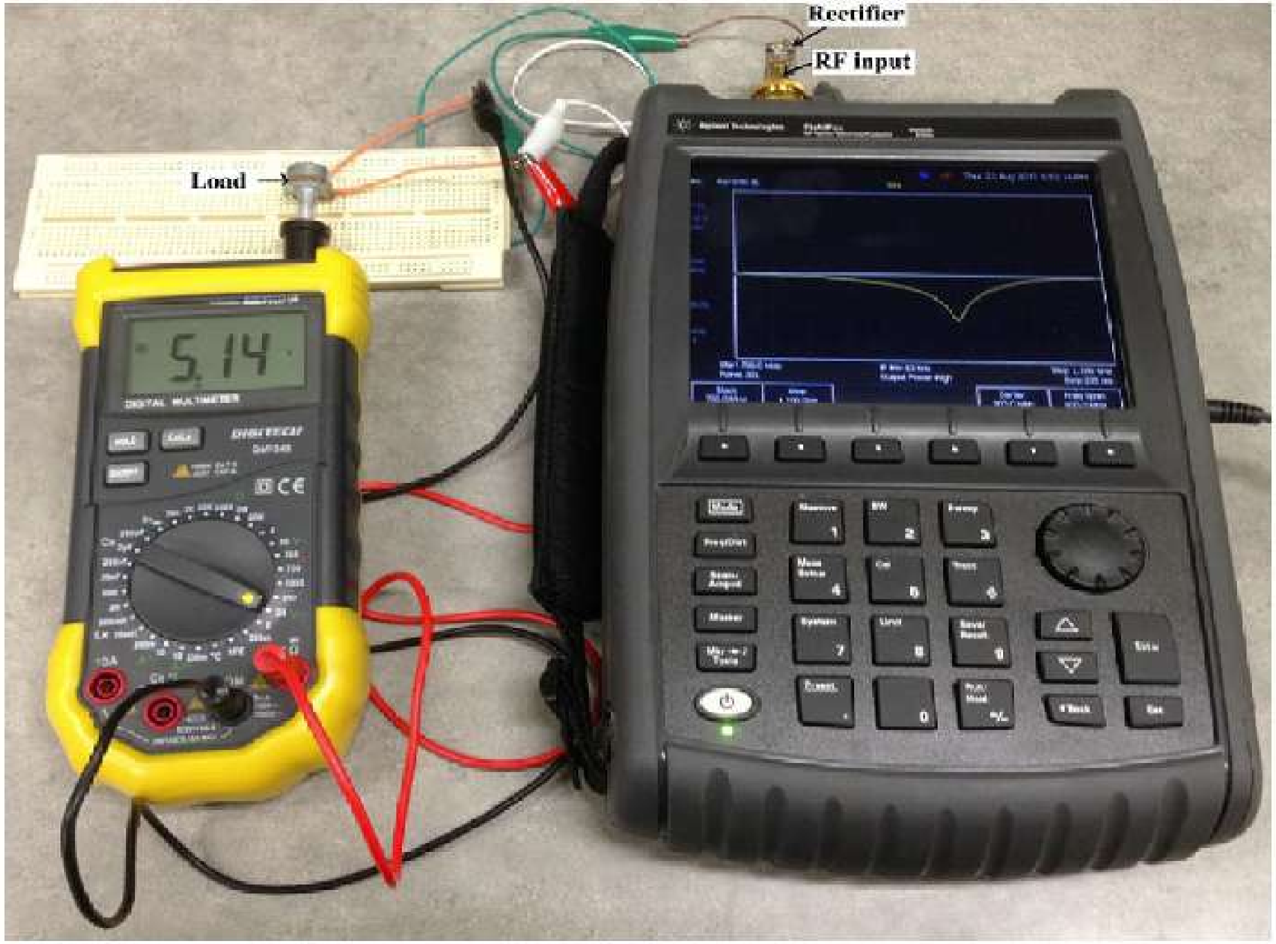

Antenna under test
Broadband antenna:
TDK Horn (1-18GHz)
Spectrum analyzer
Agilent N1996A HP (100kHz-6GHz)
Signal generator SYSTRON DONNER 1710B-S1087
(10MHz - 8GHz)

Fig. 6 Experimental setup to measure the performance of the rectifier in free space



Published in

RF rectifiers for EM power harvesting in a Deep Brain Stimulating device

Article Jan 2015 · Australasian physical & ...

Md. Kamal Hosain · Hosain @bullet · Abbas Z. Kouzani · [...] · Michael Berk

Citations

... The use of resistance compression networks (RCN) have been proposed to address this scenario [63]. In a related sense, improved RF-DC conversion efficiency of rectifier circuits is witnessed when appropriate time varying signals with high peak-toaverage power ratio (PAPR) are employed [64]. Further research on the use of RCNs and PAPR signals to optimize the performance of multiband RF energy harvesting systems is needed, and is potentially promising to significantly improve the performance of RF rectennas in real world applications. ...

Radio Frequency Energy Harvesting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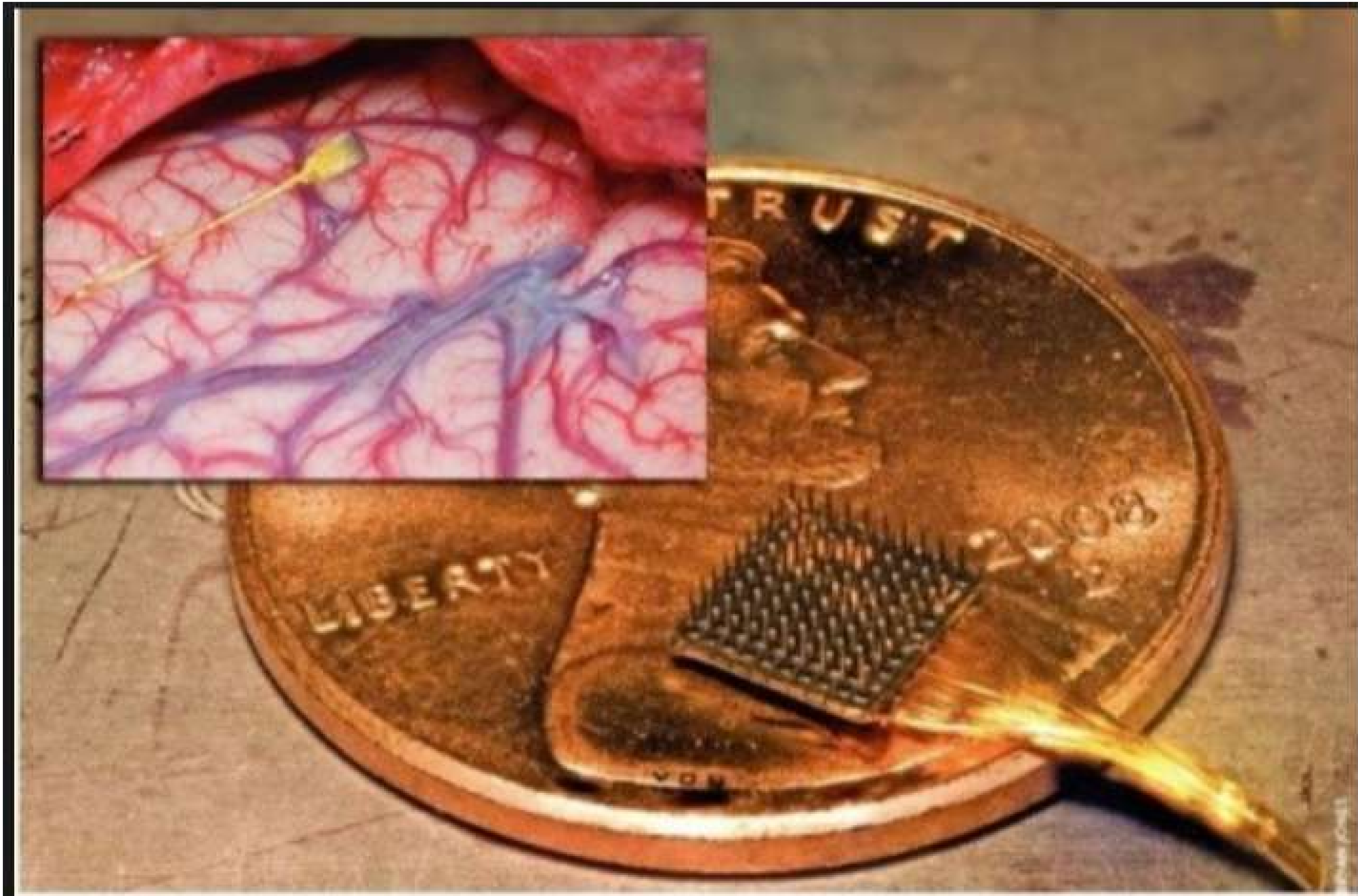
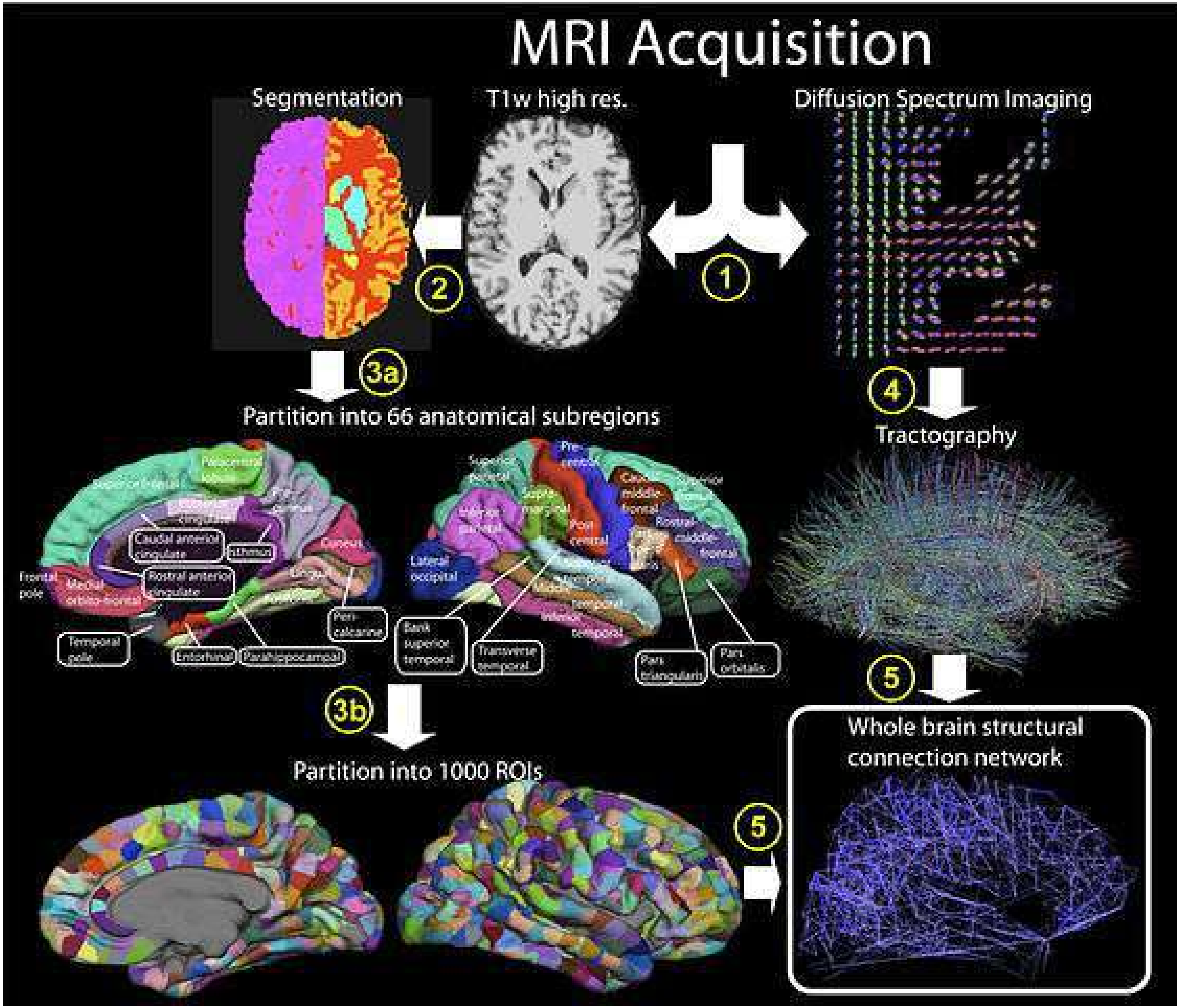
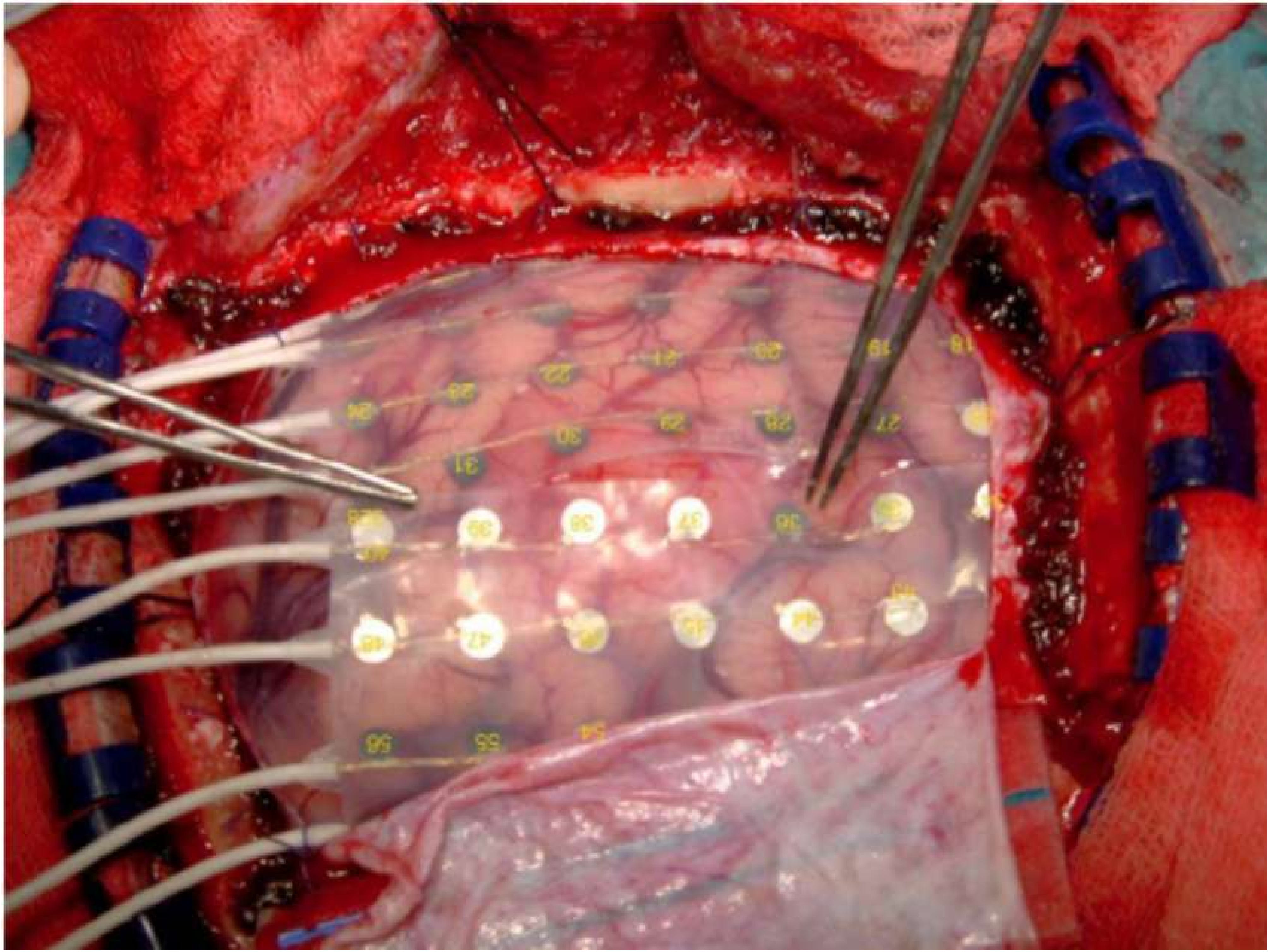
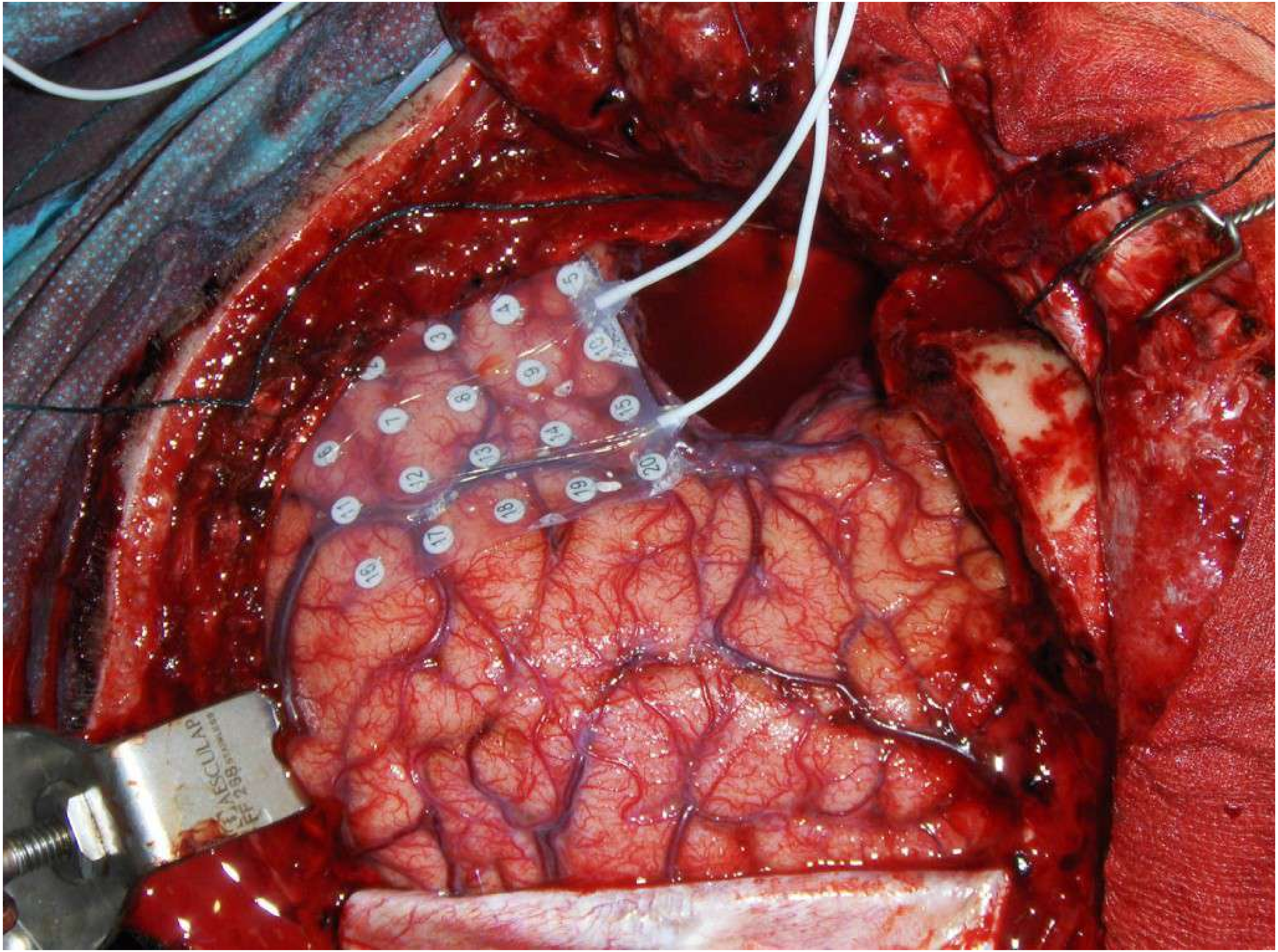


Thought control: The Utah Electrode Array can be implanted on a human brain. For a podcast and more photos, go to CityWeekly.net.


MRI Acquisition
Segmentation
T1w high res.
Diffusion Spectrum Imaging
1
2
3a
Partition into 66 anatomical subregions
4
Tractography
Caudal anterior cingulate
Isthmus
Rostral anterior cingulate
Frontal pole
Medial orbito-frontal
Temporal pole
Entorhinal
Parahippocampal
Cuneus
Peri-calcarine
Lateral occipital
Bank superior temporal
Transverse temporal
Pars triangularis
Pars orbitalis
5
3b
Partition into 1000 ROIs
Whole brain structural connection network
5





2
3
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12
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16
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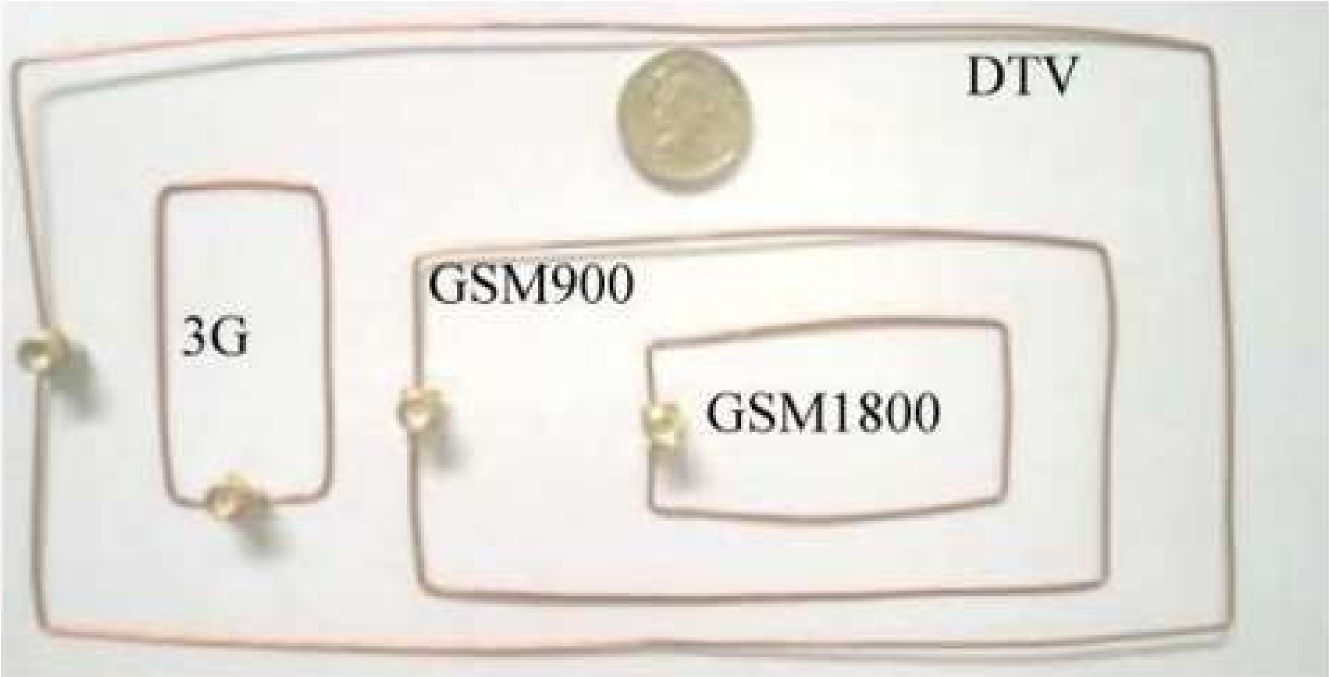
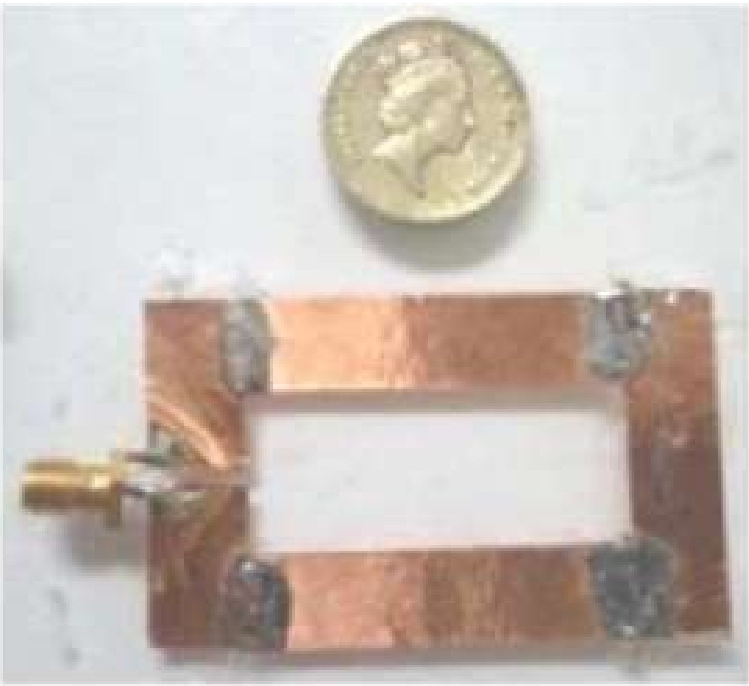
18
19
20
AESCULAP

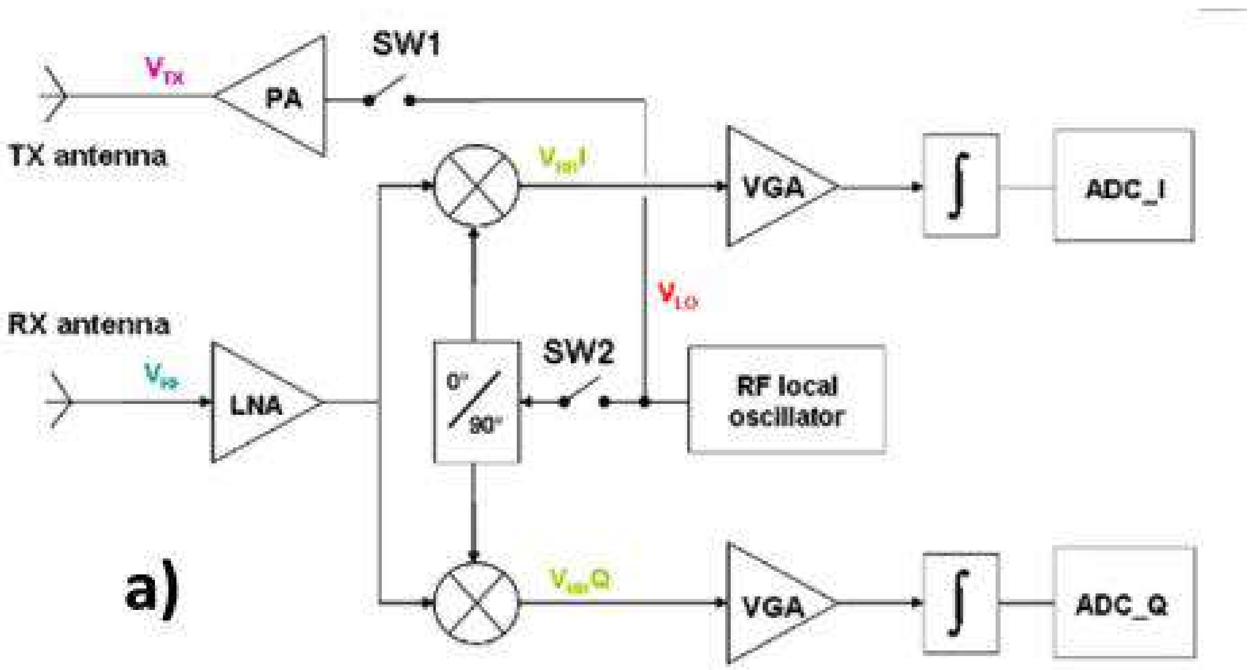


(a)

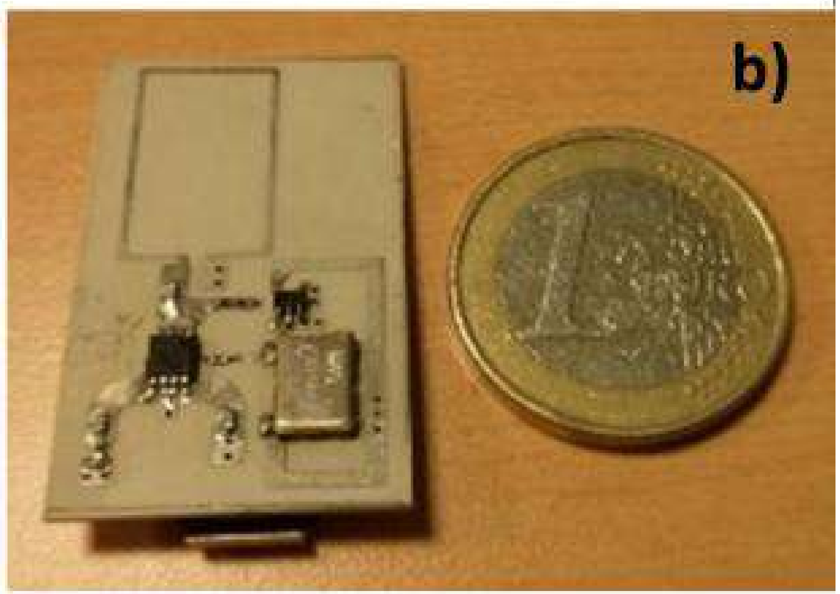


(b)

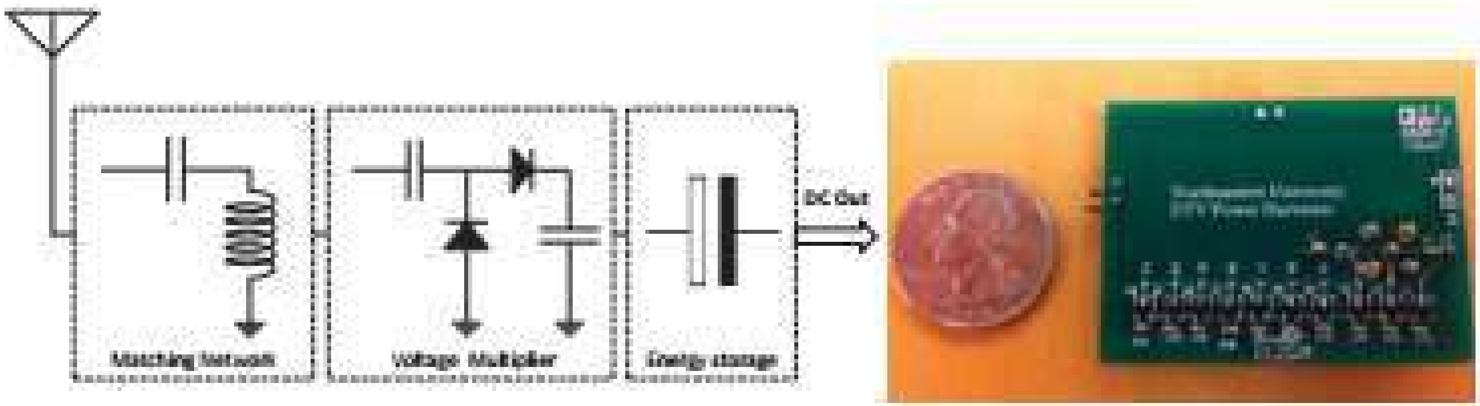
Fig. 3. 50-Ω folded-dipole antennas shown next to a British £1 coin. (a) DTV, GSM900 (BTx), GSM 1800 (BTx) and 3G (BTx) copper wire antennas. (b) 3G



SW1
PA
TX antenna
RX antenna
LNA
0°
90°
SW2
RF local oscillator
VGA
VGA
ADC_I
ADC_Q
a)



b)



(a) (b)

Fig. 1. Ambient RF energy harvesting (a) and RF energy harvesting module (DTV band) (b)

Design – Physical System

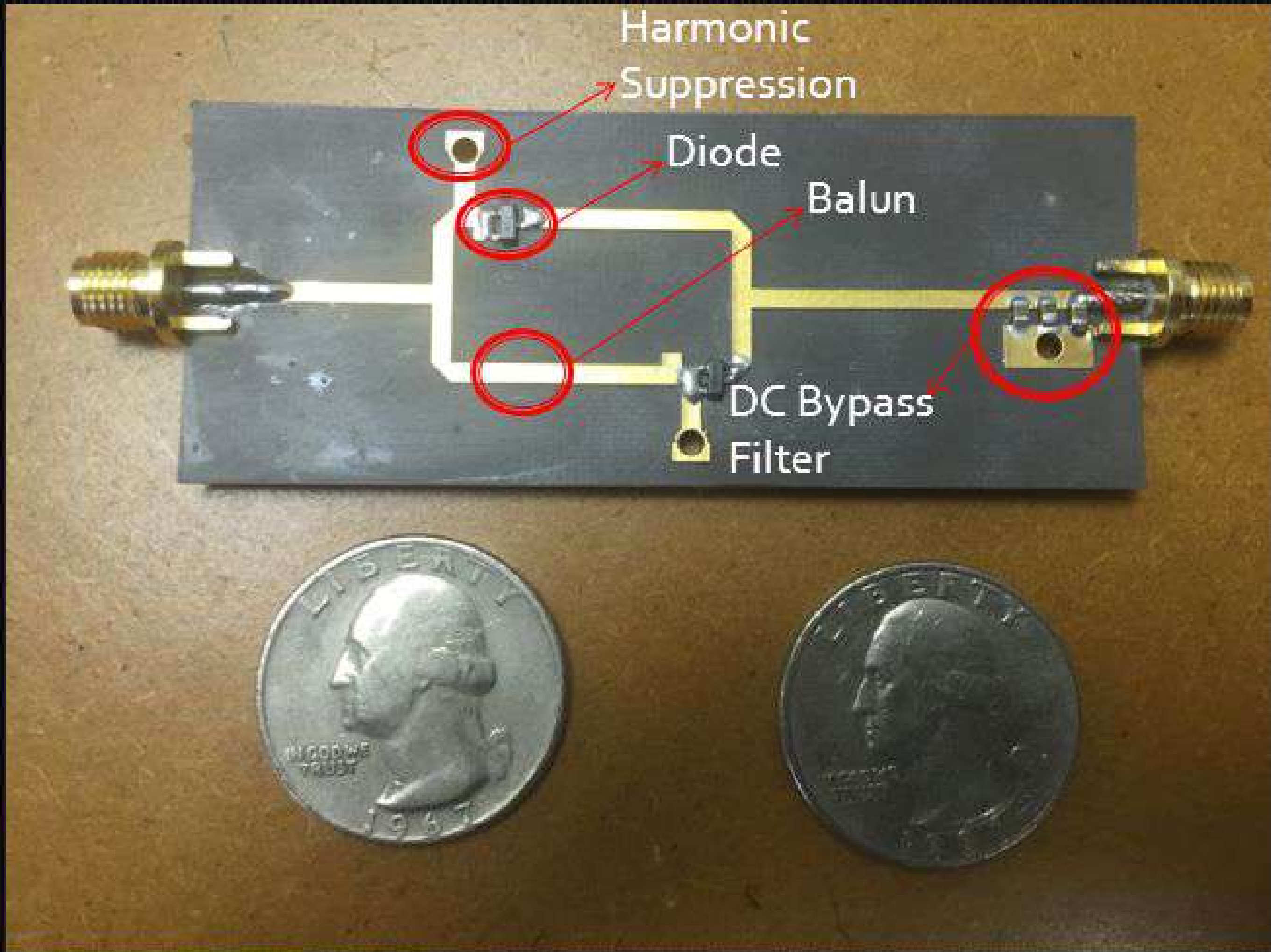


Fig 5. RF to DC converter

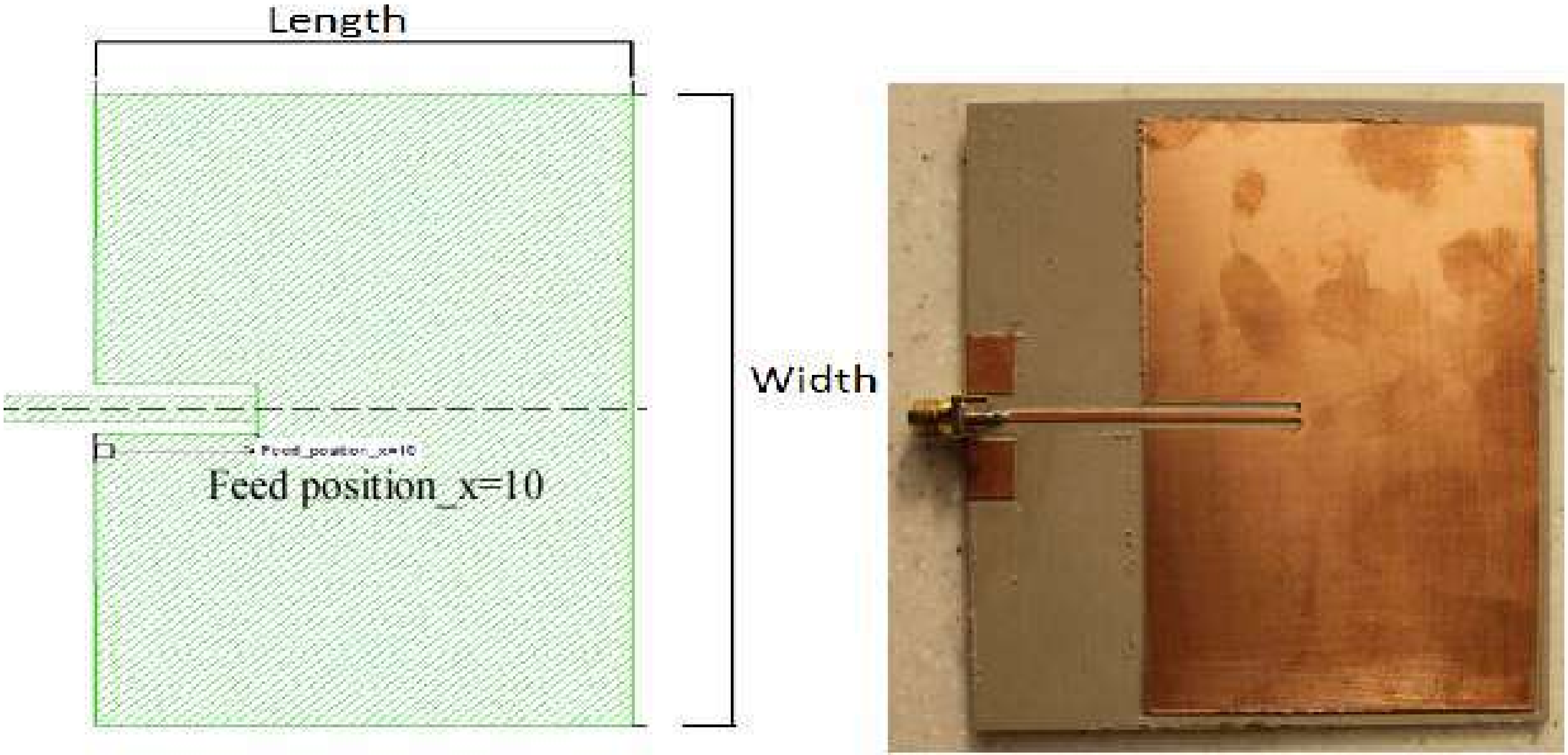
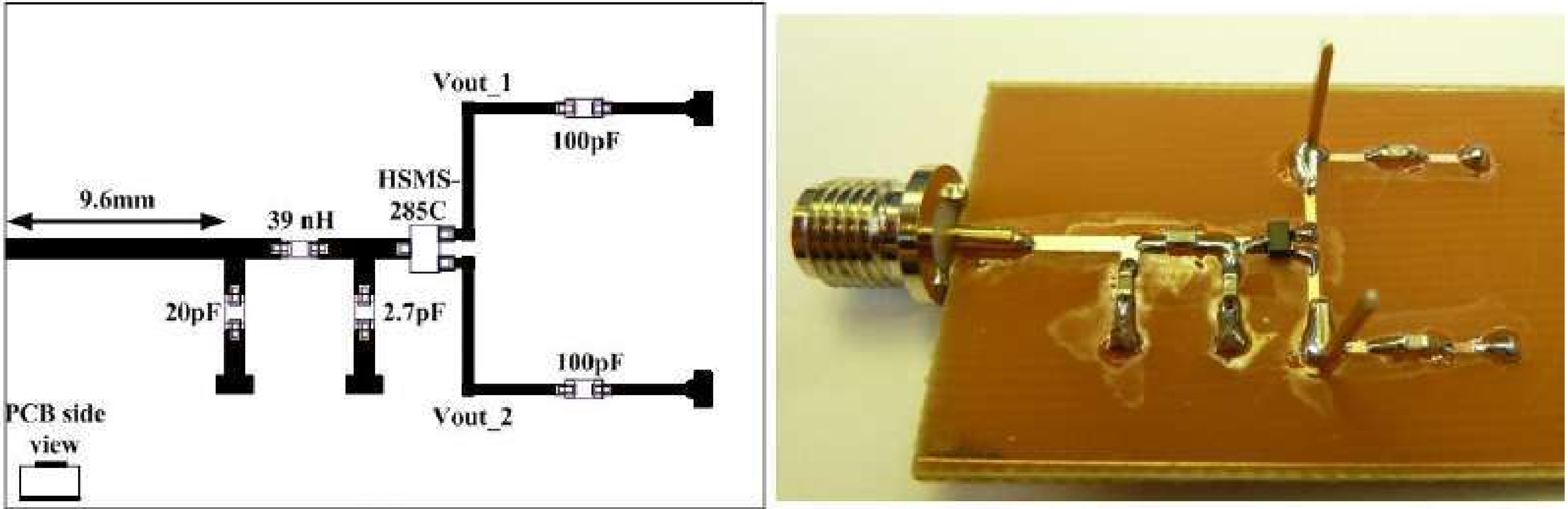
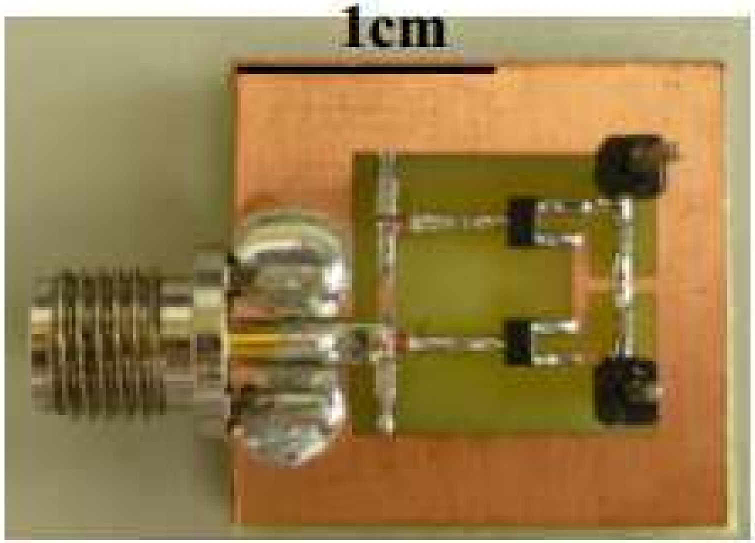


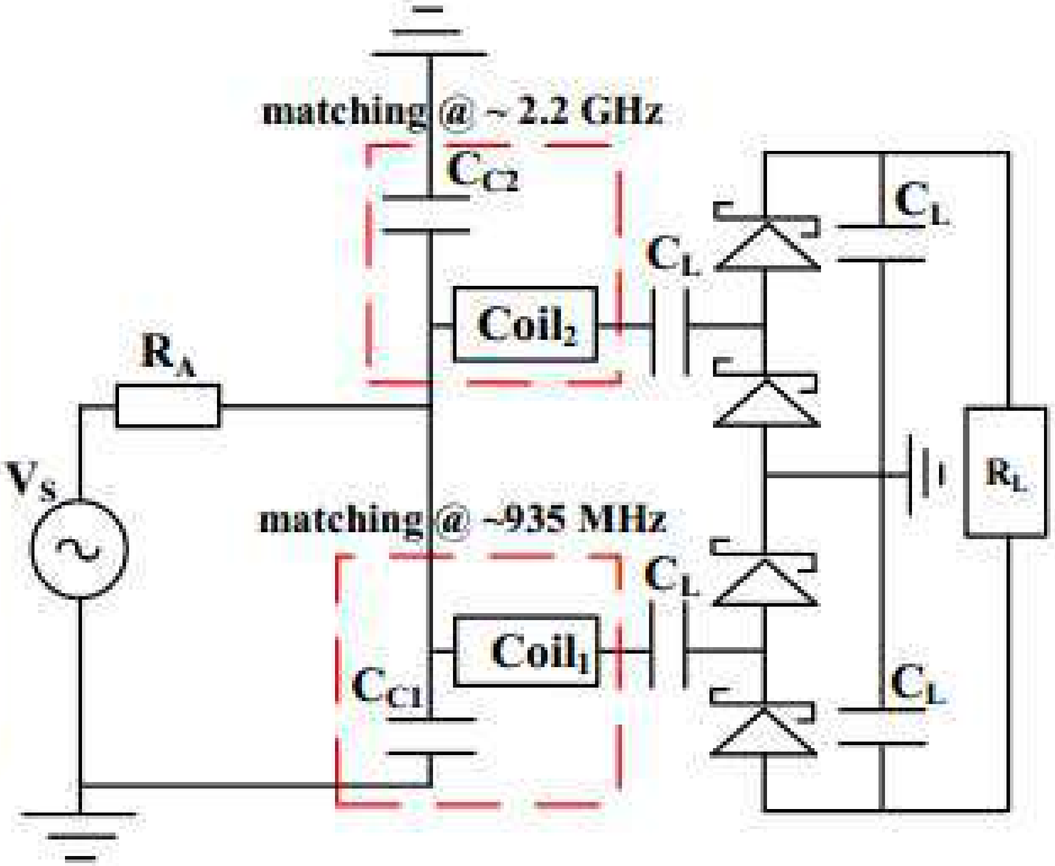
Fig. 3. RF Energy receiving antenna layout and manufactured prototype

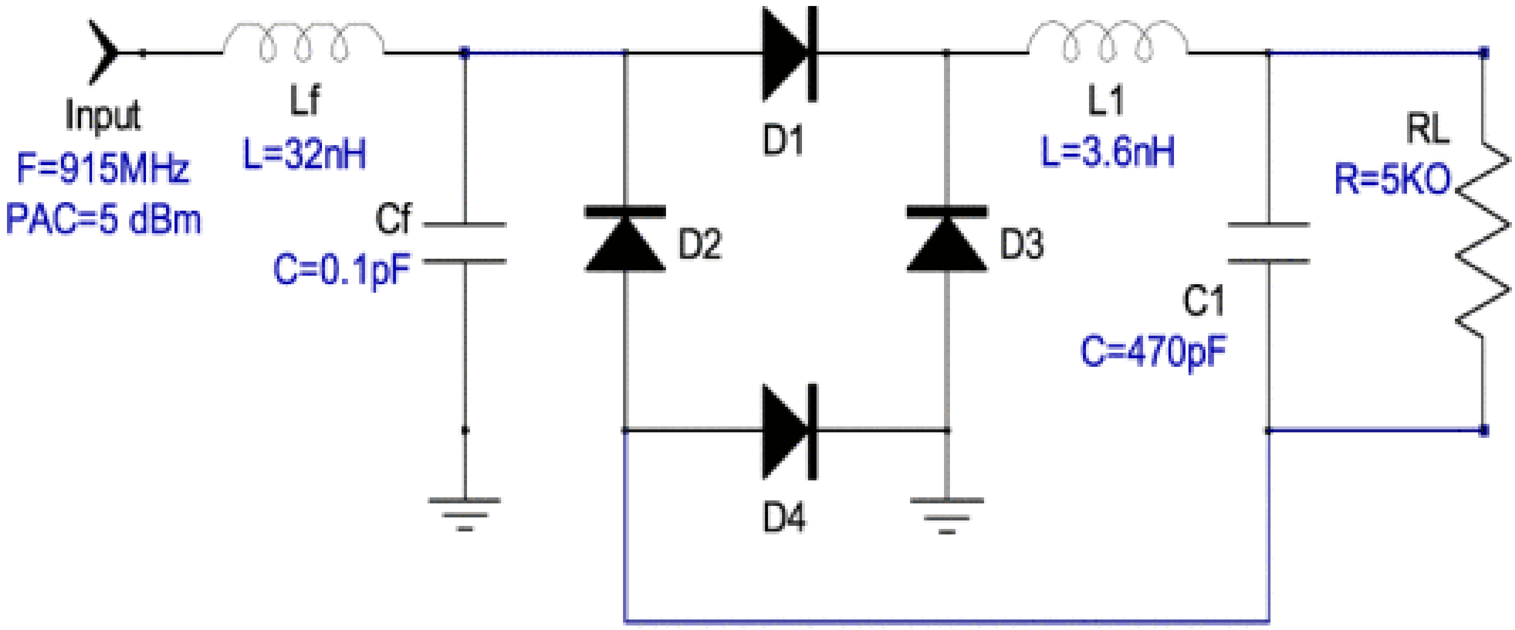
Fig. 3. RF Energy receiving antenna layout and manufactured prototype


Vout_1
100pF
HSMS-
285C
9.6mm
39 nH
20pF
2.7pF
100pF
Vout_2
PCB side
view

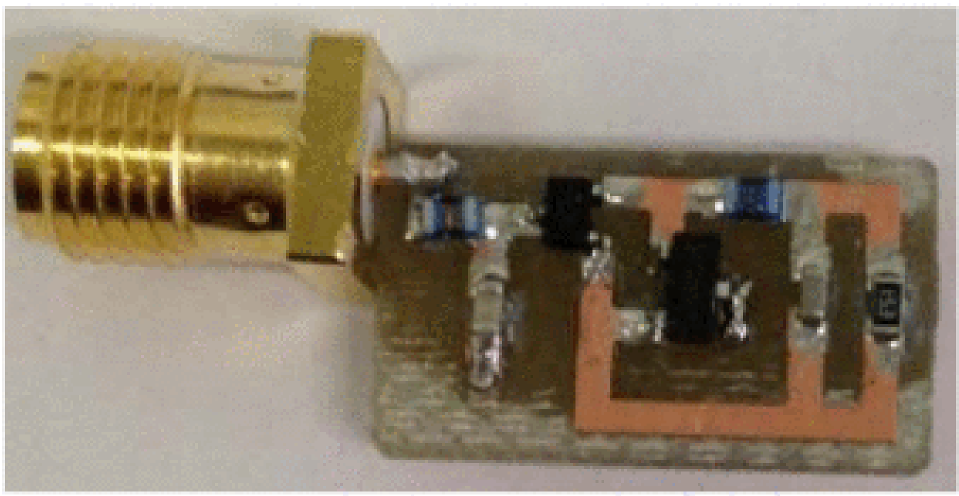
(a) (b)


1cm


matching @ ~ 2.2 GHz
C_{C2}
C_L
C_L
$Coil_2$
R_A
V_S
R_L
matching @ ~935 MHz
C_L
$Coil_1$
C_{C1}
C_L


Input
F=915MHz
PAC=5 dBm
Lf
L=32nH
Cf
C=0.1pF
D1
D2
D3
D4
L1
L=3.6nH
C1
C=470pF
RL
R=5KO

(a)



(b)

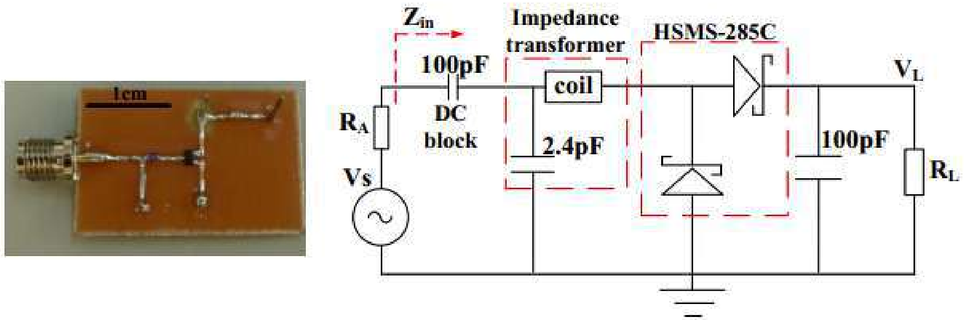


Figure 4. PCB of the realized RF harvester at 930MHz using a HSMS-285C diode voltage doubler. The HSMS-285C has the following spice parameters I_S = 3μA, C_j = 0.18pF and R_S= 25. *Coil* = 38.5nH at 900MHz with a Q_u of 69. The chip capacitors have Q_u of about 1000 at 900MHz.

clc

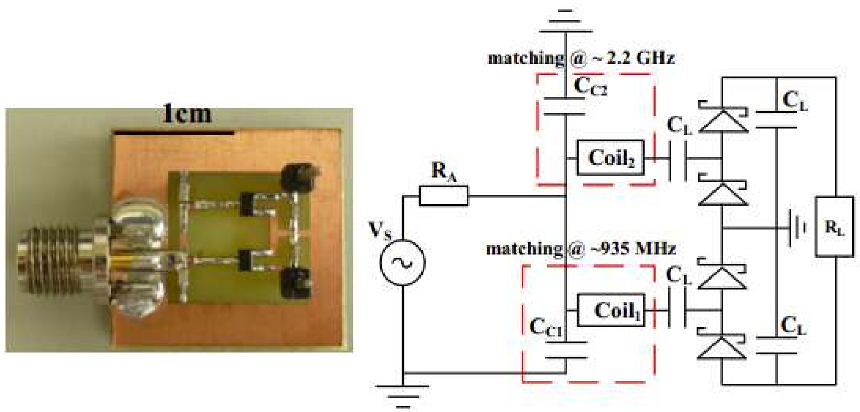
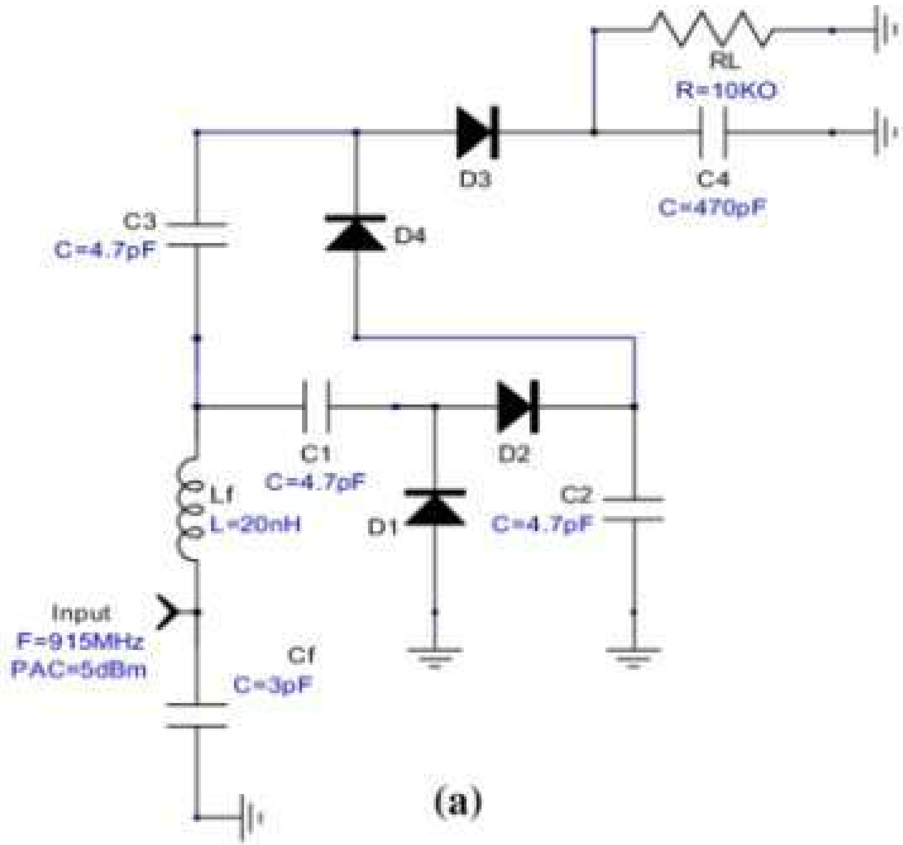
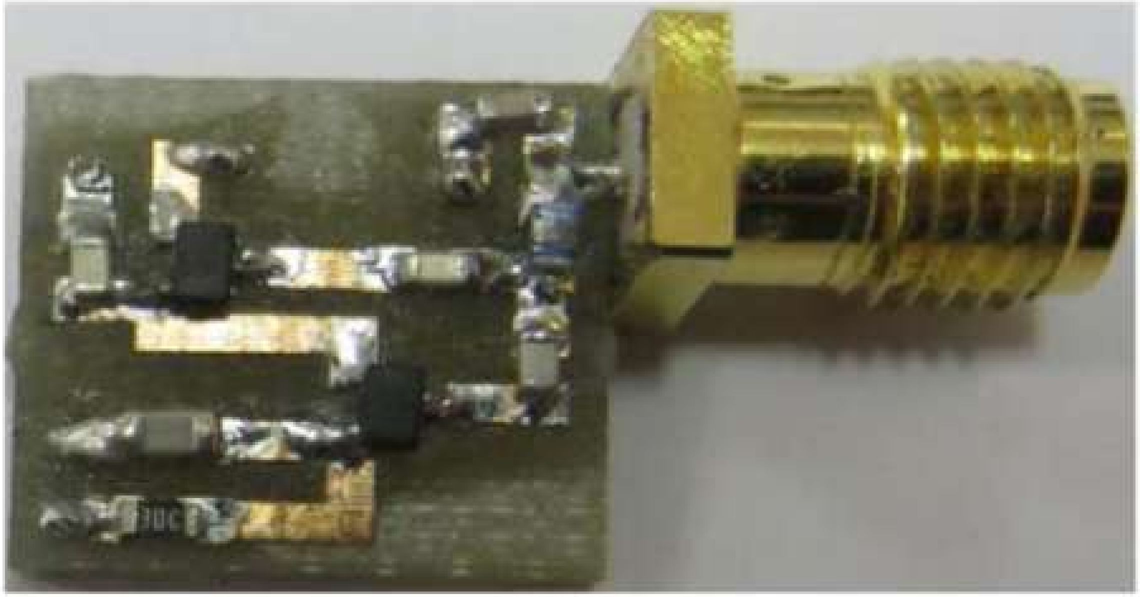


Figure 6. Picture and circuit layout of the dual-band RF harvester. The harvester is matched at 935MHz and 2.2GHz. Schottky diodes are HSMS-285x series. C_{C1}=2.7pF, $Coil_1$ =39nH; $Coil_1$ Q_U @ 900MHz =88, C_{C2}=0.8pF, $Coil_2$ =2.14nH; $Coil_2$ Q_U @ 1.7GHz =35, C_L=100pF.

Fig. 14 a Two-stages charge pump rectifier with a L-matching network. b Fabricated L-matched two-stages charge pump rectifier

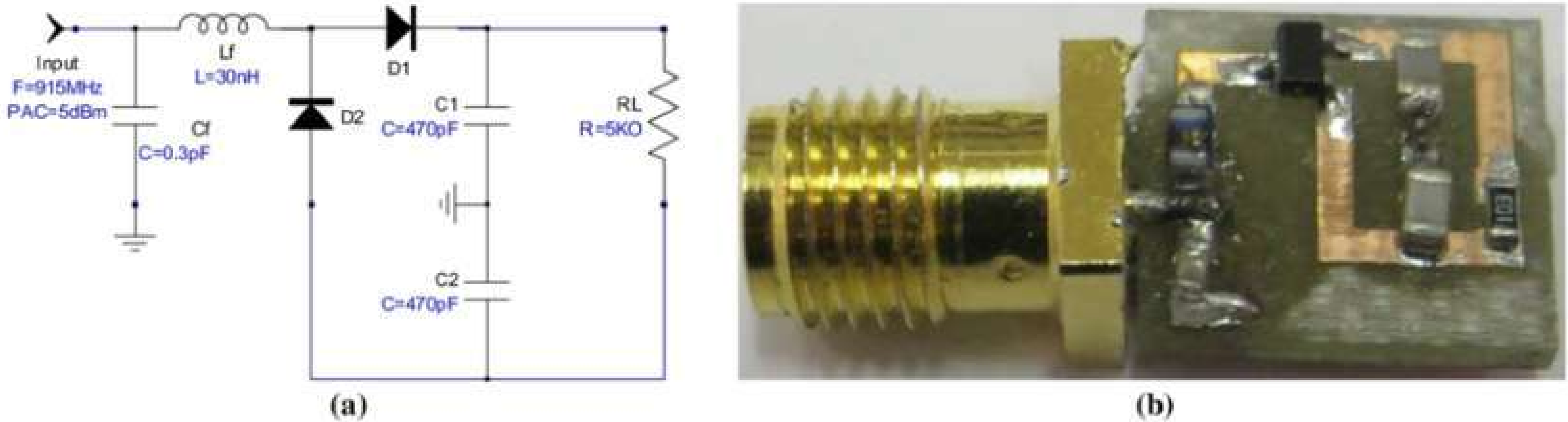


(a)



(b)

Fig. 4 a Delon voltage doubler rectifier with an L-section matching network. b Fabricated PCB of the L-section matched Delon voltage doubler rectifier



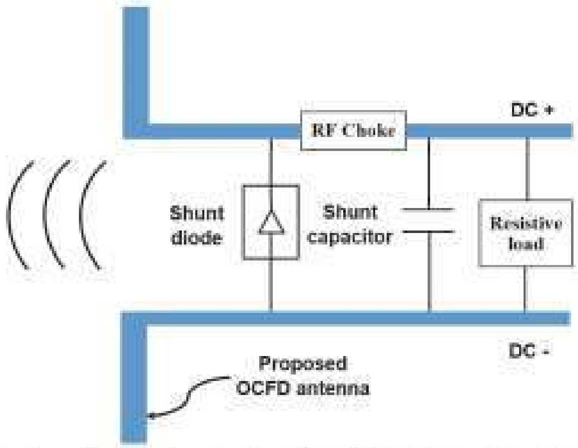


Fig. 9. Configuration of a single shunt diode (Class F) rectifier with a dipole antenna.

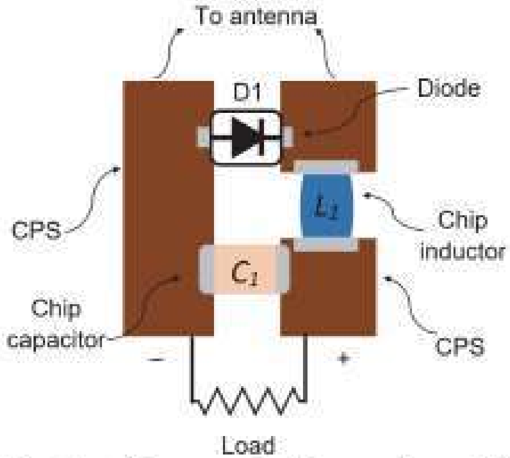


Fig. 10. Configuration of the proposed rectifier on coplanar striplines (CPS).

TABLE III
CIRCUIT COMPONENTS USED IN THE DESIGN

Component name	Nominal Value	Part number and supplier
D1	Schottky diode	SMS7630-079LF, Skyworks
L1	47 nH chip inductor	0603HP47N, Coilcraft
C1	100 nF chip capacitor	GRM188R71H104JA93D, Murata

antenna have a radius of 50 mm and a circumference angle of

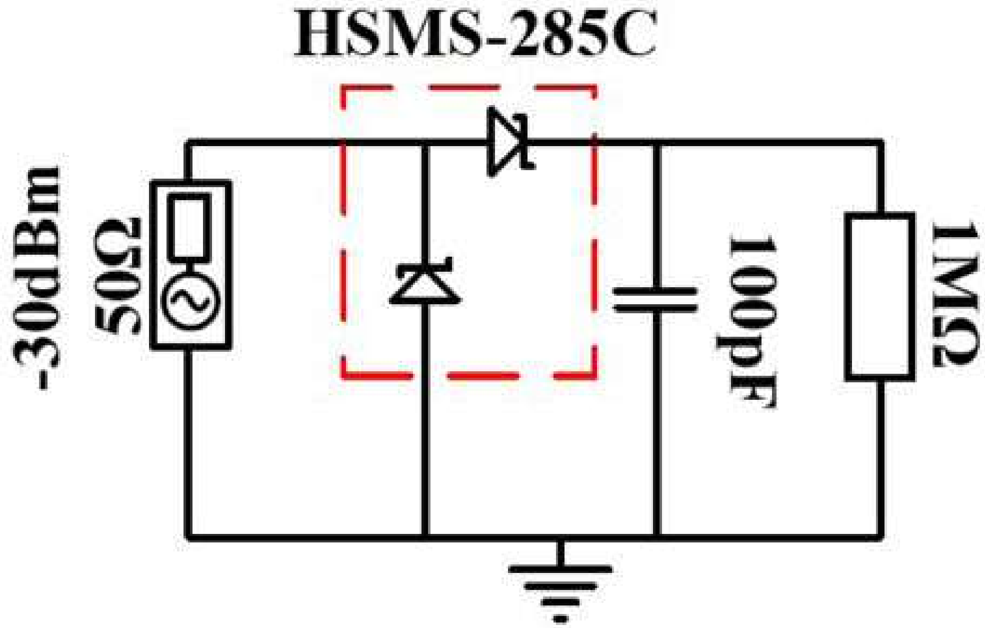
respectively. While the imaginary part of the proposed OCFD is around 0 Ω at resonant frequencies 0.6 GHz, 1.2 GHz and 2.4 GHz, which are f_0, $2f_0$, and $4f_0$ respectively. These results have demonstrated that the simulated results agree with the OCFD theory as discussed in Section III–A. Furthermore, the imaginary part of the impedance of the antenna over the resonant frequency band from 1.4 to 2 GHz turns from negative values (for the reference antenna) to positive values (for the proposed antenna). As shown in Fig. 7(b), the value of the imaginary part of the proposed antenna impedance varies between 0 and 300 Ω over the desired frequency band. This feature could help the proposed antenna to produce a better conjugate matching with the rectifier, since the imaginary part of the impedance of the rectifier normally varies between -700 and 0 Ω as we discussed earlier. The simulated 3D radiation patterns of the proposed antenna at the frequencies of interest are depicted in Fig. 8. The 2D polar plots of antenna patterns in *E-plane* and *H-plane* are shown as well. Here we have only showed the directivity (maximum gain) of the antenna (without taking the mismatch loss into account). From Fig. 8, it can be seen that the antenna has symmetrical patterns about YOZ plane with a maximum directivity of 1.8 dBi at 0.9 GHz, 3.5 dBi at 1.8 GHz and 3.3 dBi at 2.4 GHz. The antenna is more directive towards the long arm direction at 1.8 GHz and 2.4 GHz with the half-power beam-widths (HPBW) of around 174° and 185° respectively. The HPBW is about 96° at 0.9 GHz.

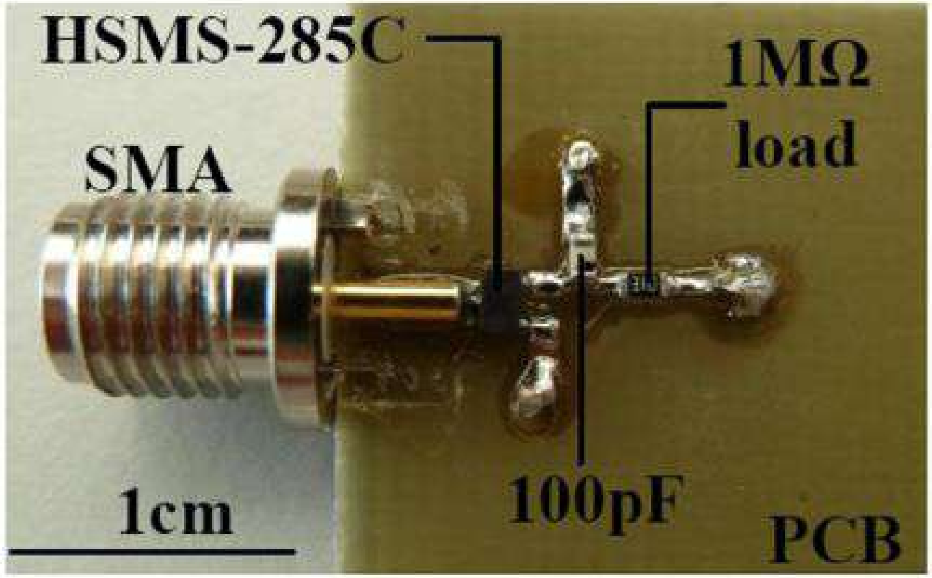
Therefore, the proposed broadband OCFD antenna has obtained high impedance over a wide frequency range. The proposed design is just an example to illustrate the proposed new method. The details of the dipole could be modified according to the frequency of interest.

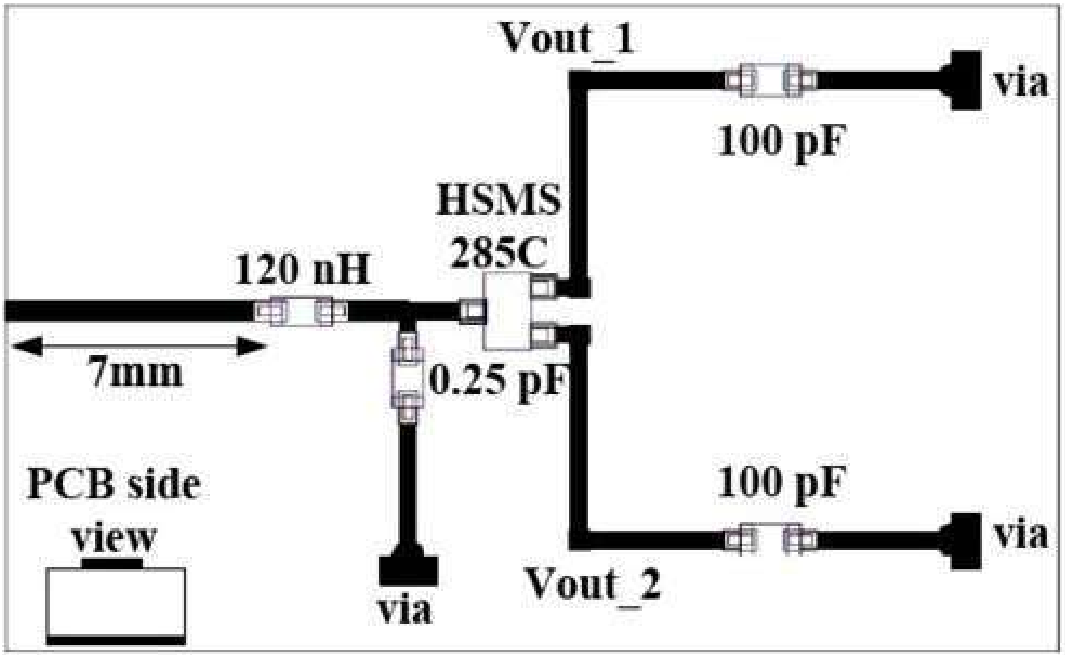
IV. RECTENNA INTEGRATION

A. Rectifier Configuration

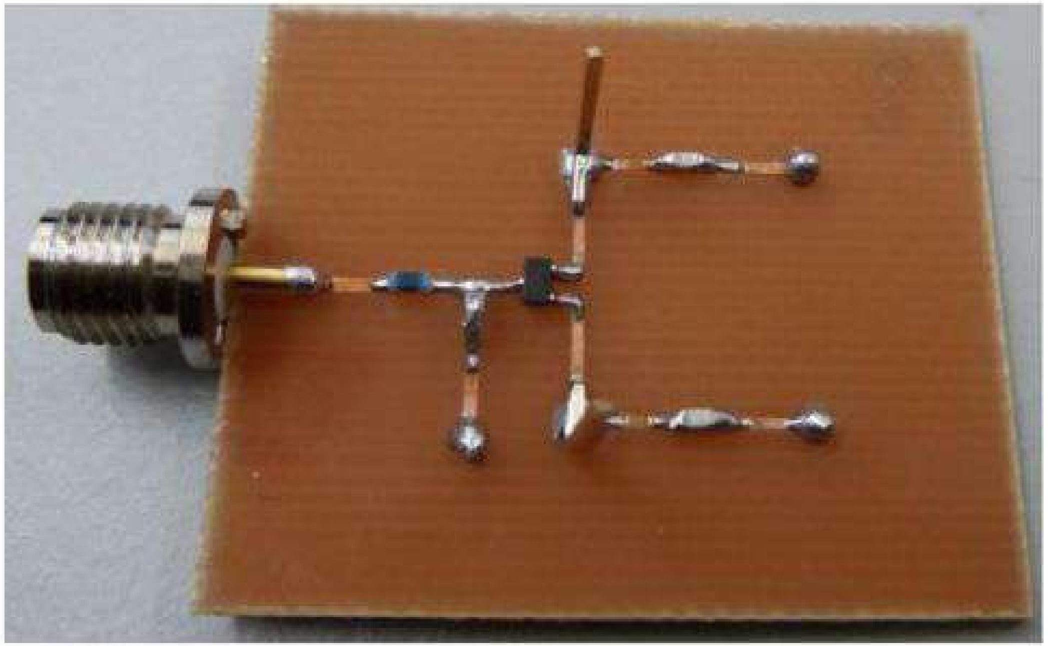
The proposed high impedance OCFD antenna may directly conjugate match with the input impedance of a rectifier over a wide frequency band. The rectifier should only consist of few circuit components for rectification, DC storage and output. A single shunt diode rectifier is selected due to its very simple structure and high conversion efficiency [33]. The configuration of the single shunt diode rectifier with a dipole


HSMS-285C
-30dBm
50Ω
100pF
1MΩ

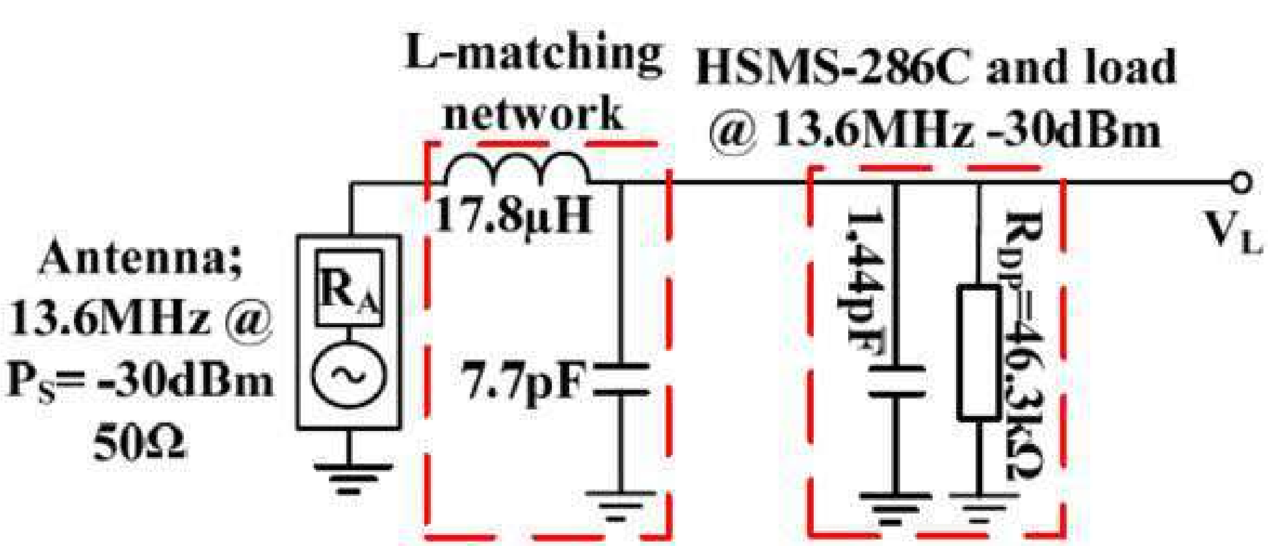

HSMS-285C
1MΩ
load
SMA
100pF
1cm
PCB


Vout_1
via
100 pF
HSMS
285C
120 nH
7mm
0.25 pF
PCB side
view
100 pF
via
via
Vout_2

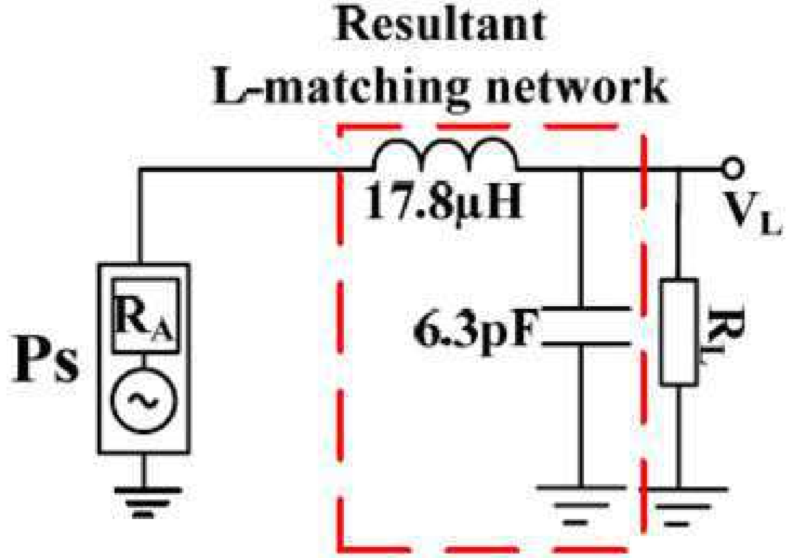
(c)



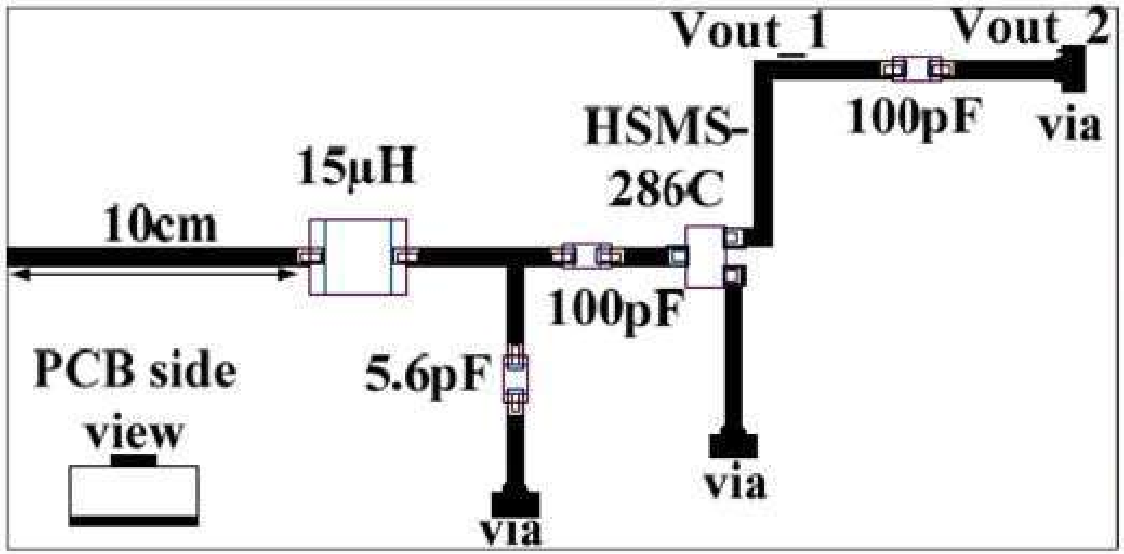
(d)


L-matching
network
HSMS-286C and load
@ 13.6MHz -30dBm
Antenna;
13.6MHz @
P_S= -30dBm
50Ω
R_A
17.8μH
7.7pF
1.44pF
R_{DP}=46.3kΩ
V_L

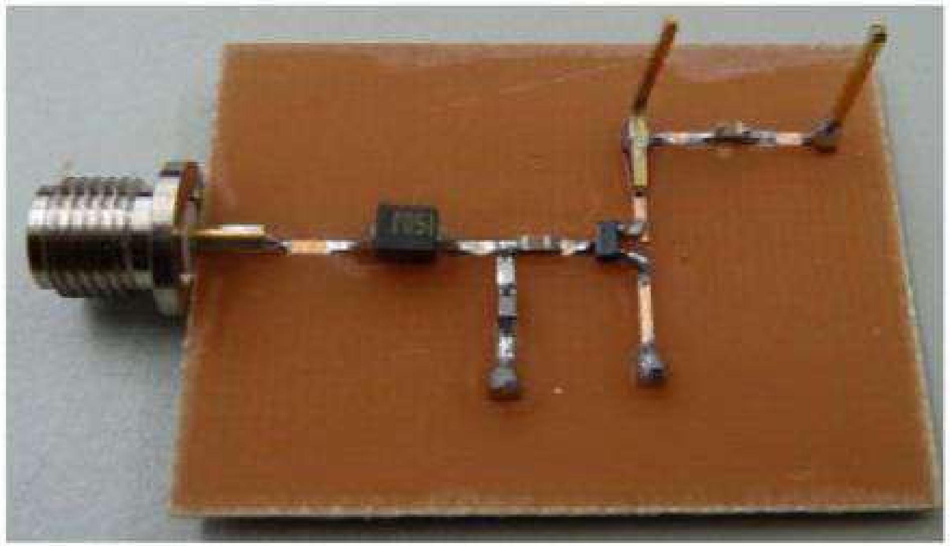
(a)


Resultant
L-matching network
Ps
R_A
17.8μH
6.3pF
R_L
V_L

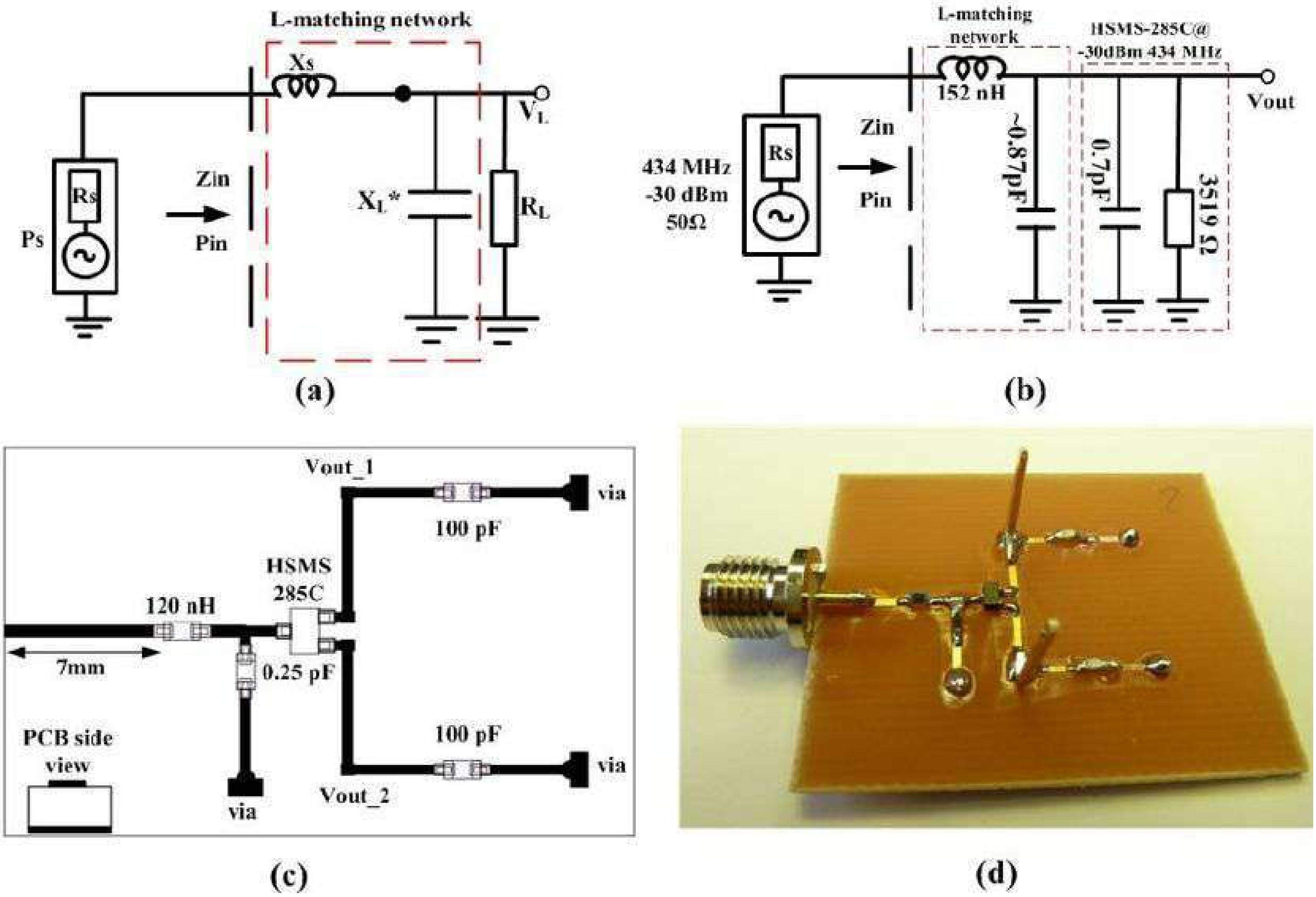
(b)


Vout_1
Vout_2
100pF
via
HSMS-
286C
15μH
10cm
100pF
5.6pF
PCB side
view
via
via

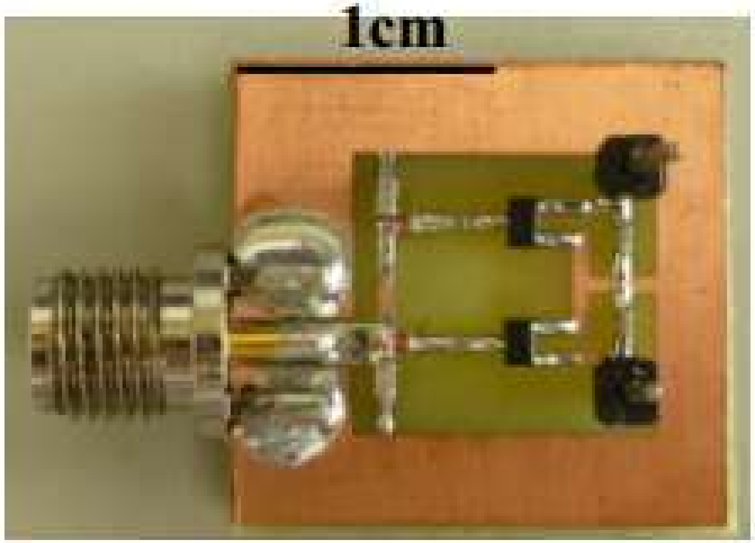
(c)

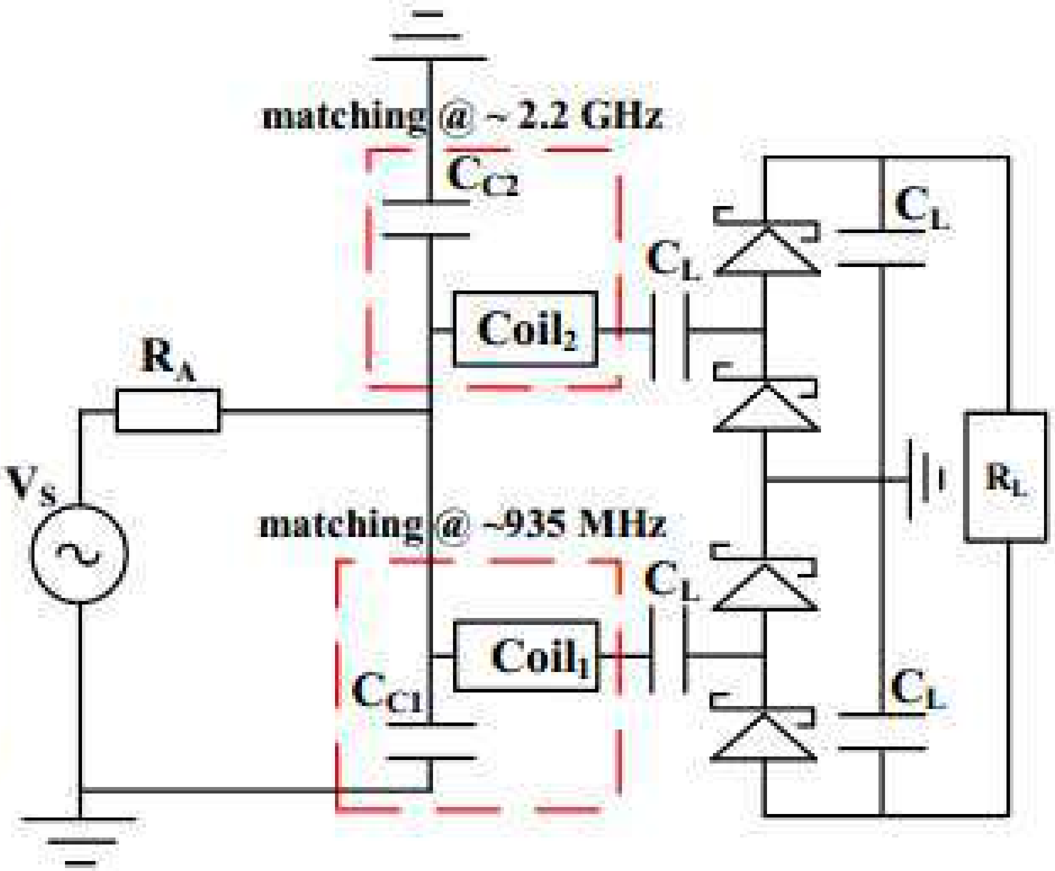


(d)

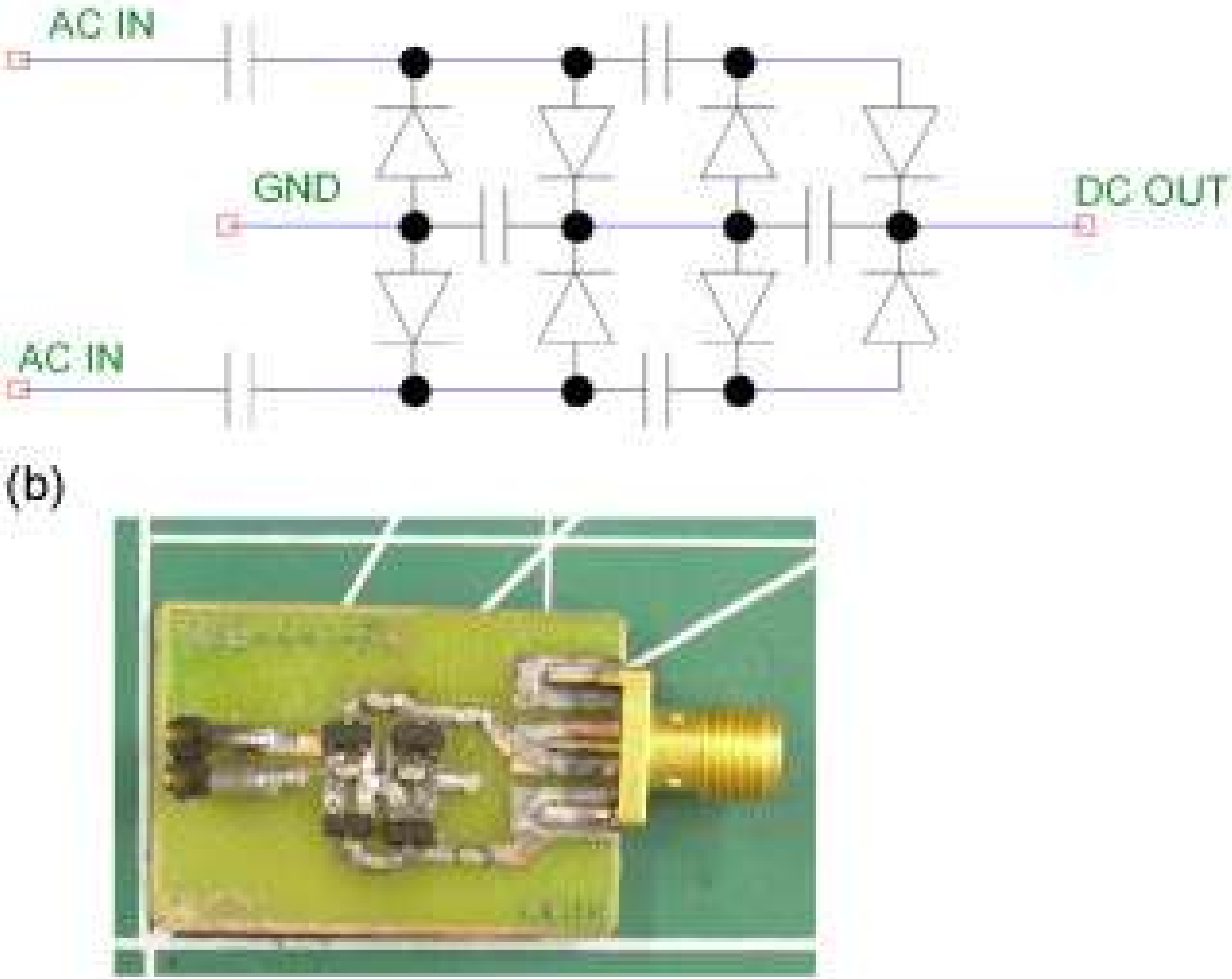


L-matching network
Xs
VL
Zin
Pin
Ps
Rs
XL*
RL
(a)
L-matching network
HSMS-285C@ -30dBm 434 MHz
152 nH
Vout
434 MHz
-30 dBm
50Ω
Rs
Zin
Pin
~0.87pF
0.7pF
3519 Ω
(b)
Vout_1
100 pF
via
HSMS 285C
120 nH
7mm
0.25 pF
PCB side view
via
Vout_2
100 pF
via
(c)
(d)

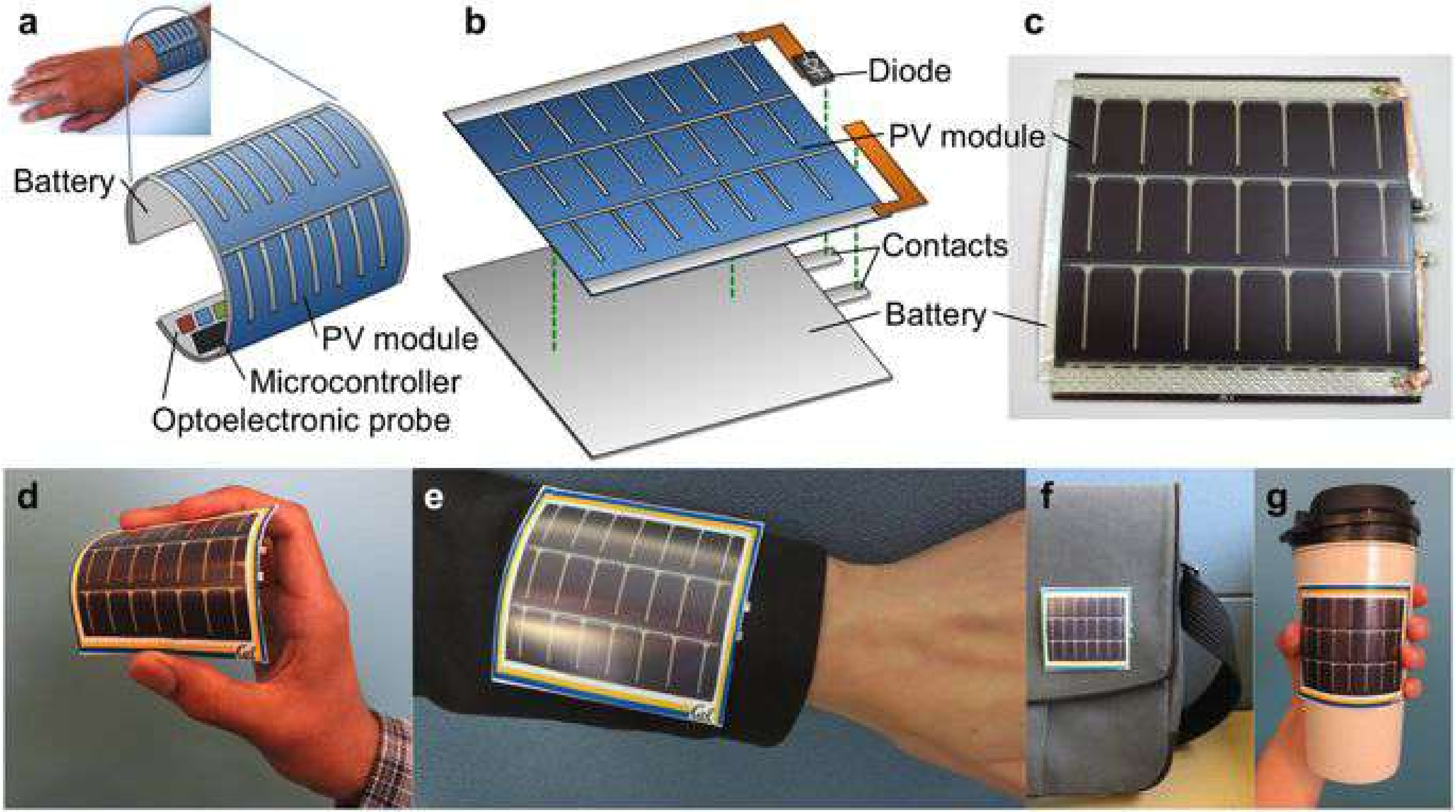

1cm


matching @ ~ 2.2 GHz
C_{C2}
C_L
C_L
$Coil_2$
R_A
V_S
R_L
matching @ ~935 MHz
C_L
$Coil_1$
C_{C1}
C_L

(a)

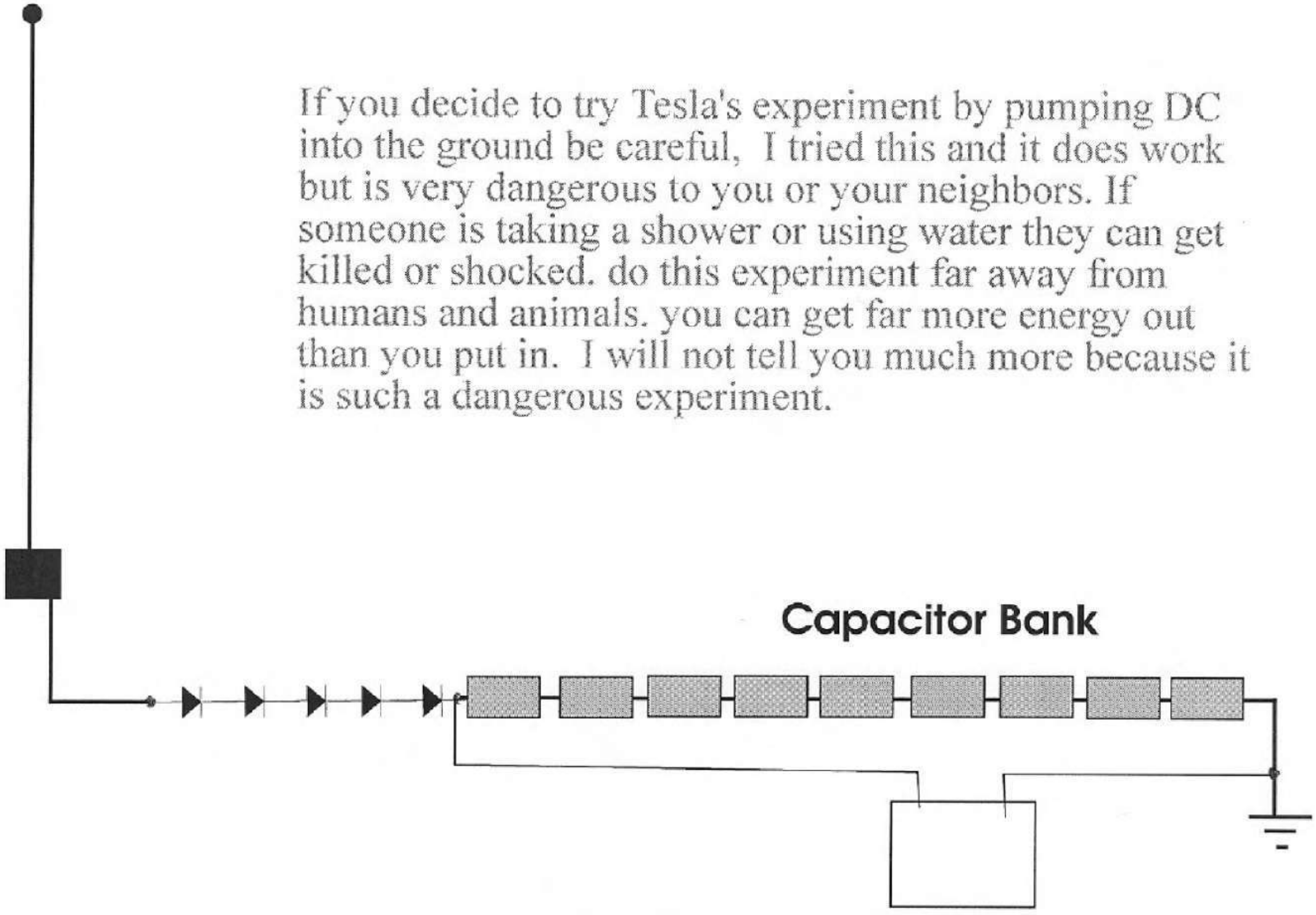


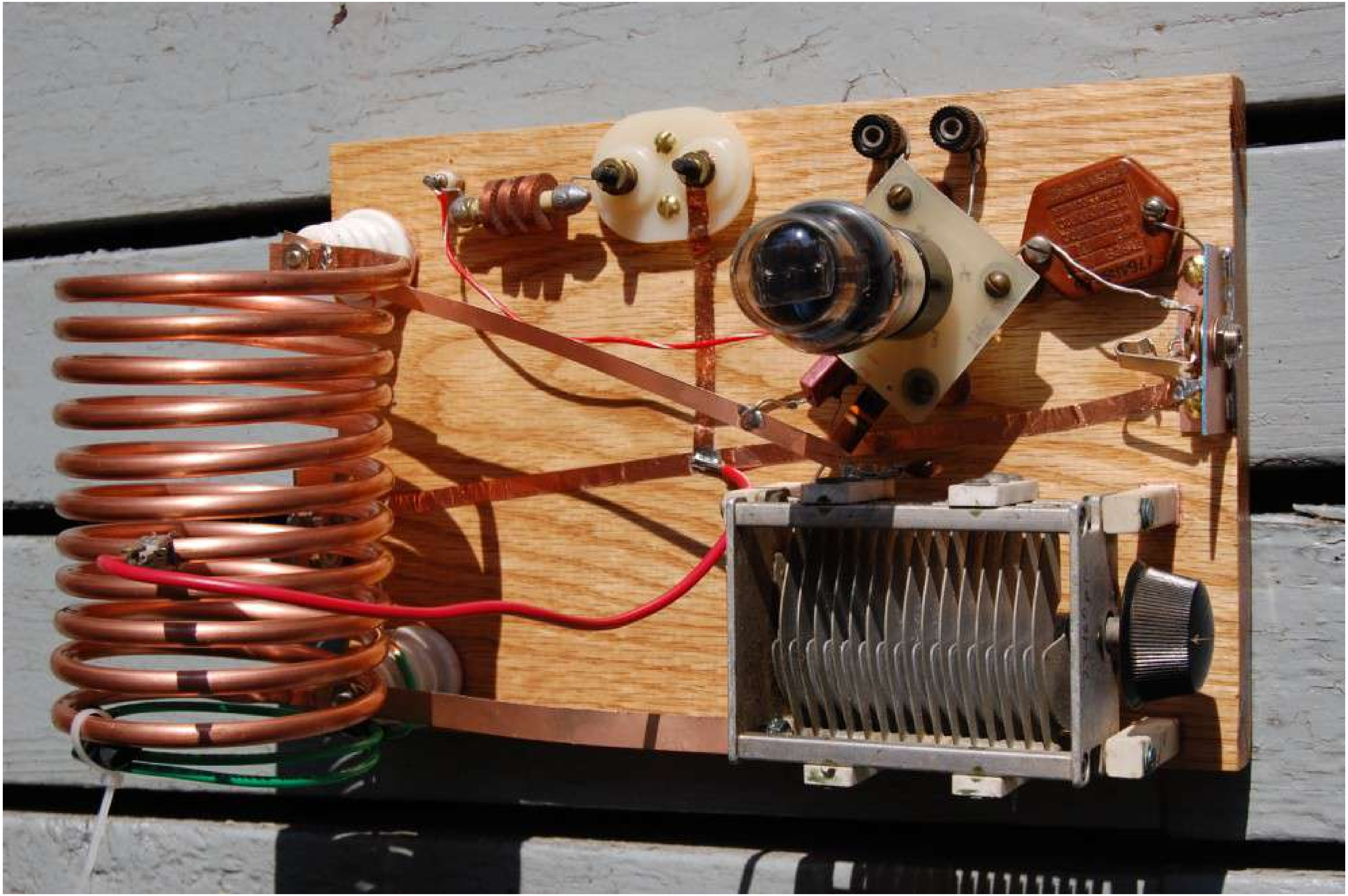
(b)

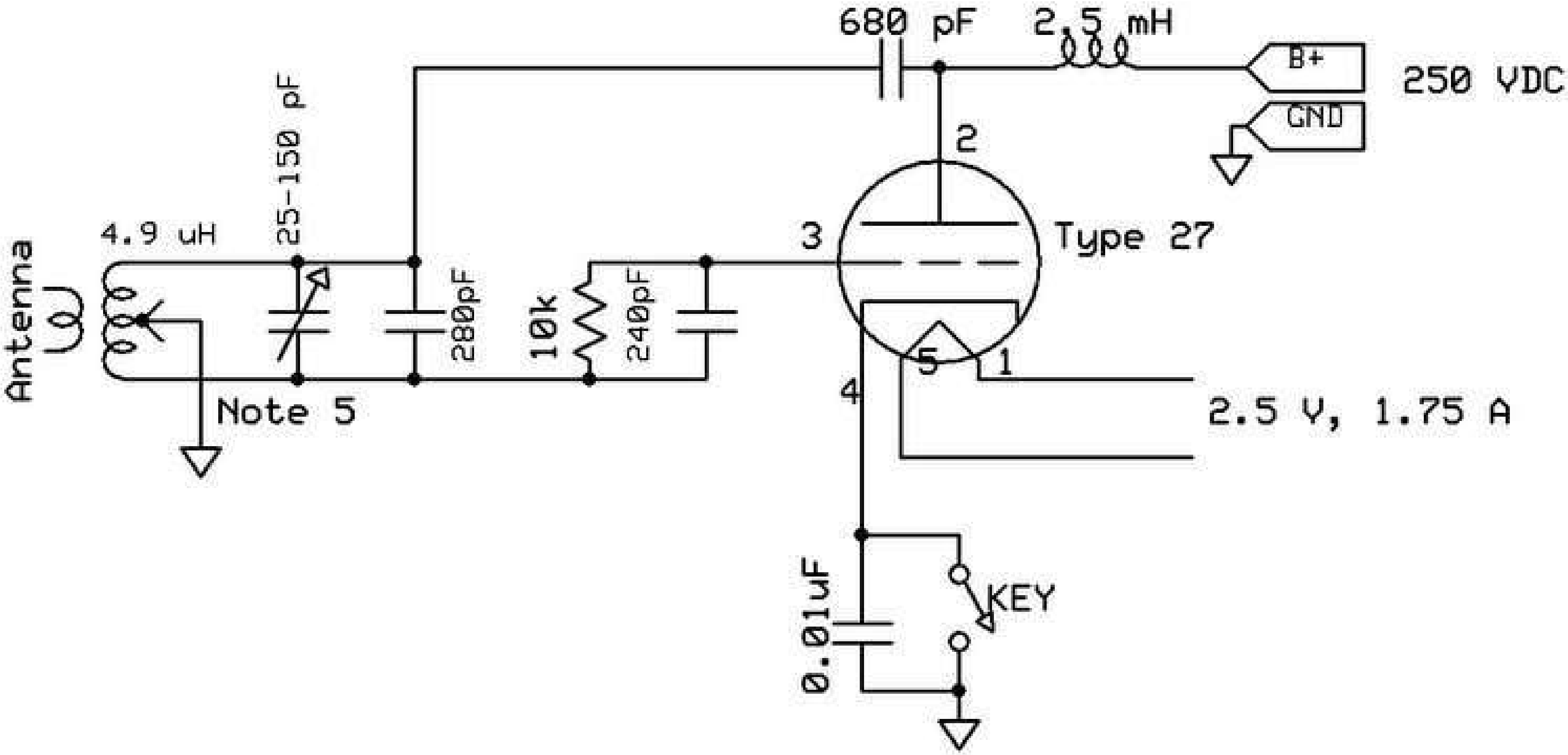

a
Battery
PV module
Microcontroller
Optoelectronic probe
b
Diode
PV module
Contacts
Battery
c
PV module
Battery
d
e
f
g

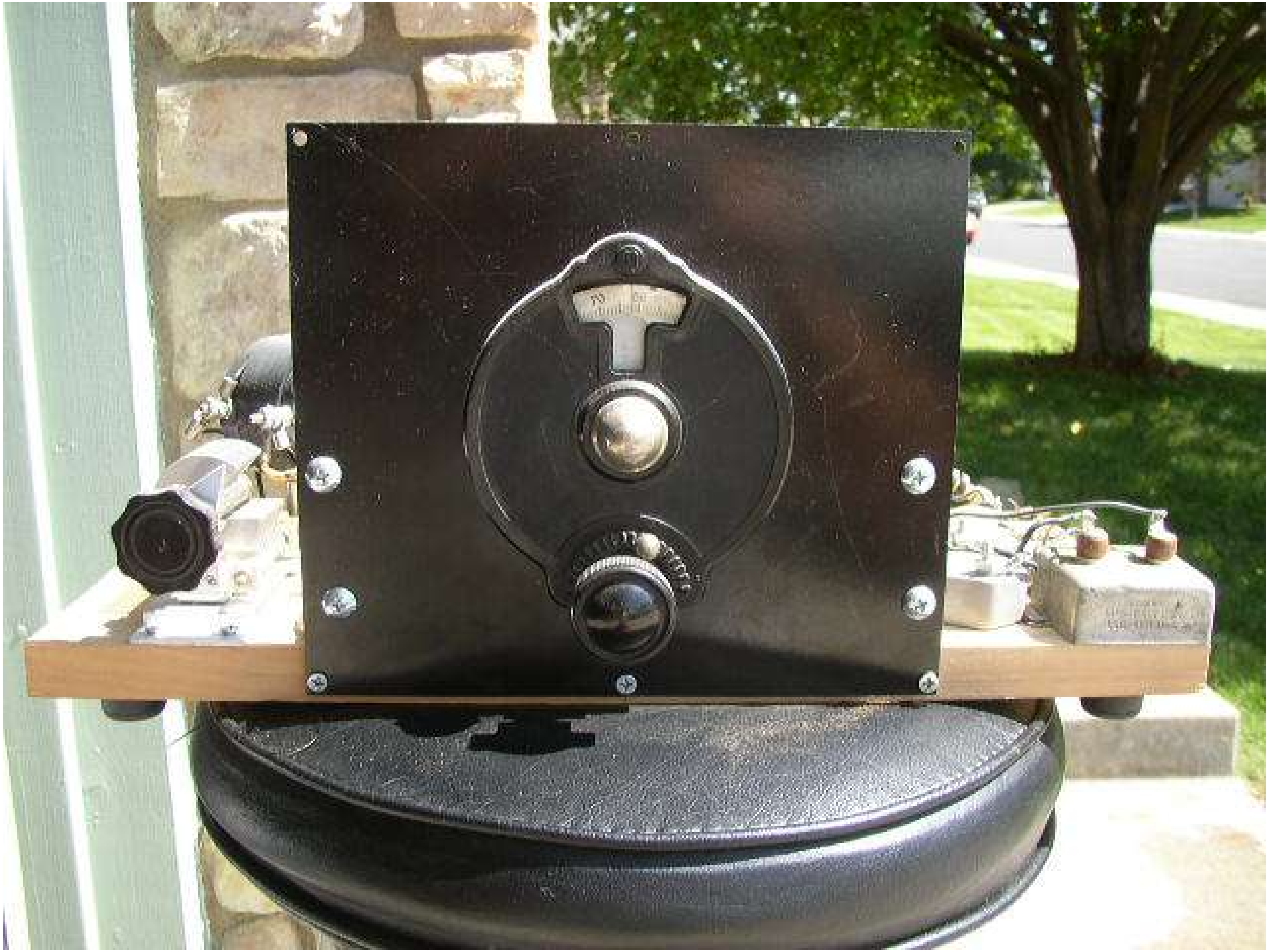
Capacitors we used are electrolytic rated at 400 volts x 47 uF put in series to equal 6,000 volts, the diodes we used were silicon 1000 volt 2 amp placed in series to equal 6,000 volts......... Ground was connected to laboratory wall out let ground.

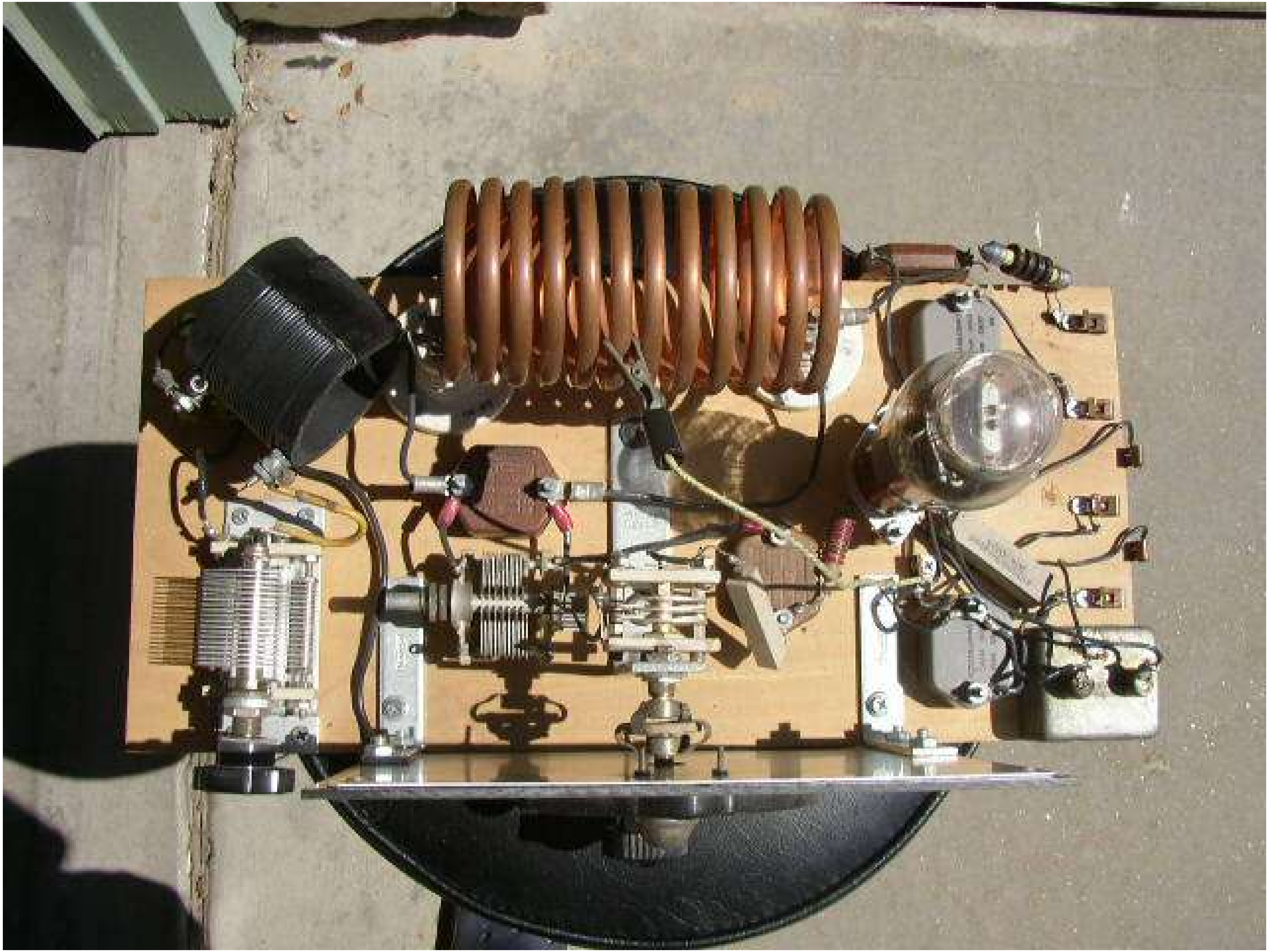
If you decide to try Tesla's experiment by pumping DC into the ground be careful, I tried this and it does work but is very dangerous to you or your neighbors. If someone is taking a shower or using water they can get killed or shocked. do this experiment far away from humans and animals. you can get far more energy out than you put in. I will not tell you much more because it is such a dangerous experiment.

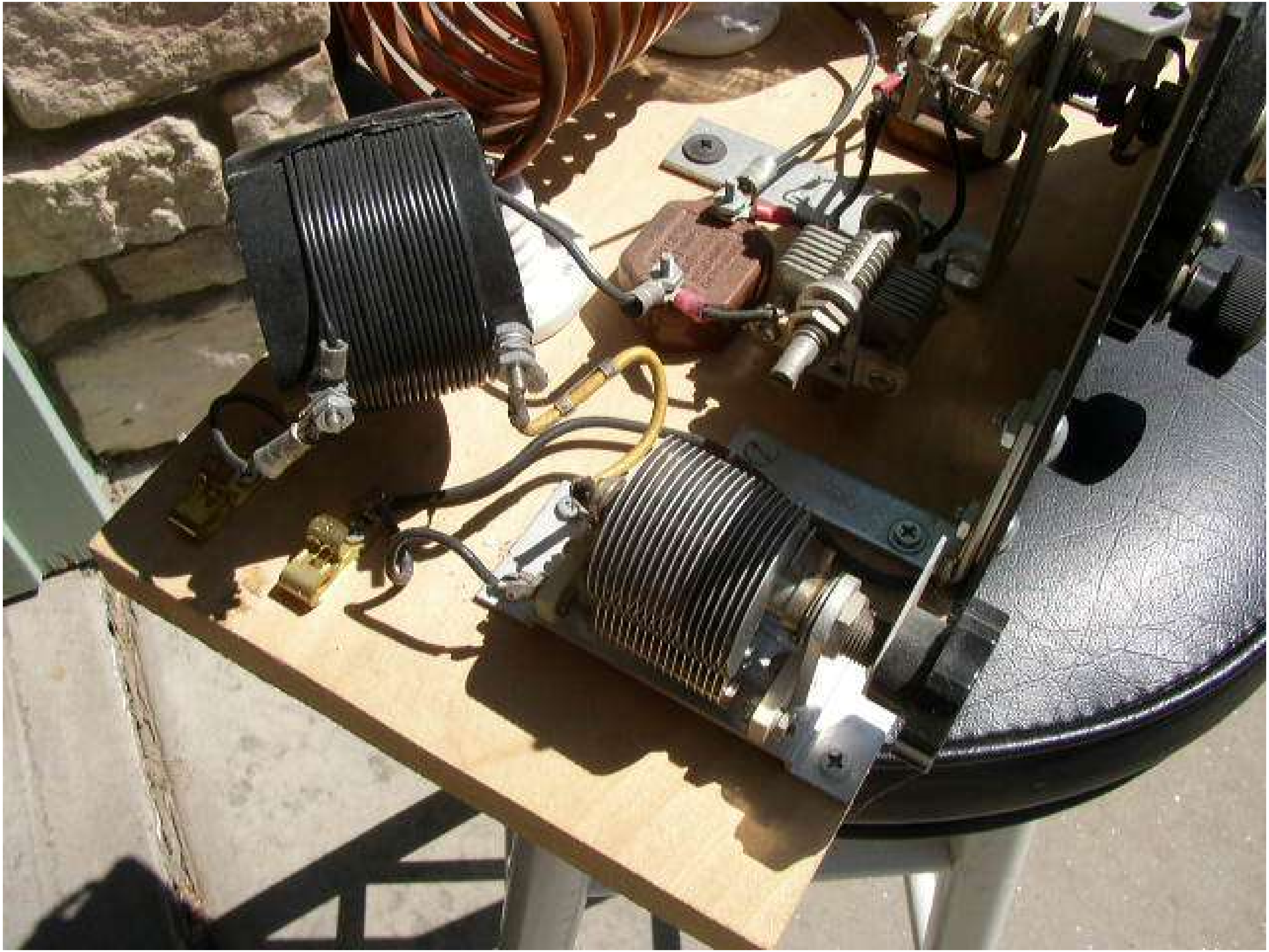





680 pF
2.5 mH
B+
250 VDC
GND
2
25-150 pF
Type 27
3
4.9 uH
Antenna
280pF
10k
240pF
5
1
4
Note 5
2.5 V, 1.75 A
0.01uF
KEY








0
10
20
30
40
50
60
70
80
90
100

Side View **Front View**

CONSTRUCTION 1

If you examine the following circuits you will find that each one is different. In most cases the difference lies in the coil design and/or the method by which the crystal and aerial is tapped into it. Each of these circuits has its own particular advantage to suit different conditions and the ideal circuit in some localities is not necessarily the best in others. It is not just a matter of a given circuit giving louder results than another, if it were there would be no point in showing more than one.

The main problem is to obtain adequate selectivity without reducing the volume level.

A receiver is said to be selective when it tunes sharply, a set with poor selectivity allows the stations to spread over the dial and when used near a transmitter will receive the local stations mixed together, which of course is useless.

Consider Fig. 16a, this is a very simple receiver, with no special attempt to provide any great amount of selectivity. In areas where signal

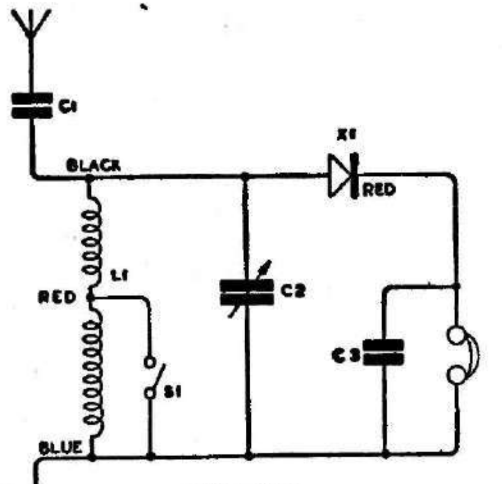
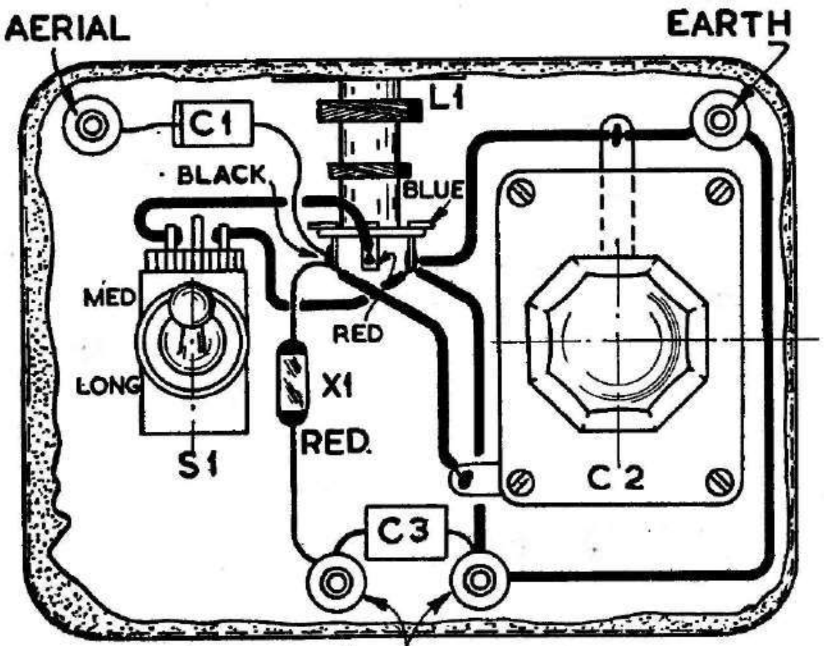


FIG. 16a



LID SHOWN BROKEN AWAY TO

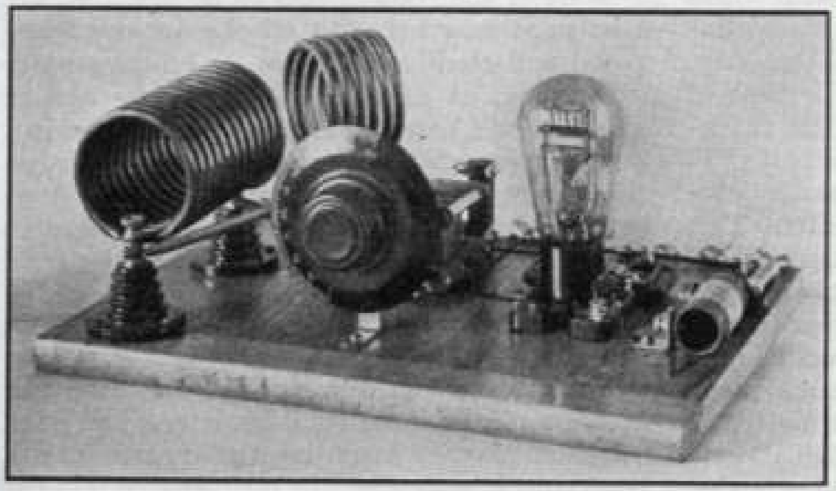


FIG. 703 — THE LOW-POWER SINGLE-TUBE TRANSMITTER

The plate tank circuit is at the left. The grid coil, leak and grid condenser are to the right of the Type 10 tube. The antenna coil is shown swung away from the plate coil to give loose antenna coupling.

Late last fall I saw an announcement regarding the upcoming '19
(AWA). Transmitters used during the event must only utilize 192
transmitters have to utilize self-excited oscillators! Listening-in o
imagine how different the bands must have sounded back in the l
heard sounded wonderful, considering the simplicity of the trans
came after watching and listening to WØVLZ's (Neil) superb You
watch these without wanting to roll-up their sleeves and start bui

After some research into the 1929 transmitter style, it became ap
Tuned (TNT) design. I can well imagine the countless late night l
simpler off-shoot of the TPTG design.

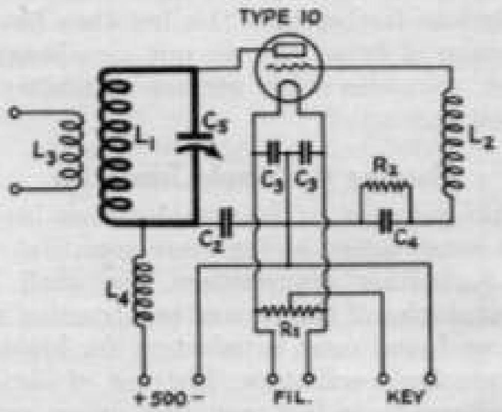


FIG. 704 — THE CIRCUIT OF THE TRANSMITTER

L_1, L_2 and L_3 — Plate, grid and antenna coils. The specifications are given under the illustration of the coils.

L_4 — A commercial "short-wave" receiving-type radio-frequency choke will do or one can be made by winding a two-inch length of half-inch tubing or wooden dowel with No. 38 d.s.c. or d.c.c. wire.

C_2 — 2000-μμfd. (.002 μfd.) mica fixed condenser, receiver type, if plate voltage does not exceed 500.

C_3 — 5000-μμfd. (.005 μfd.) mica fixed condenser, receiver type.

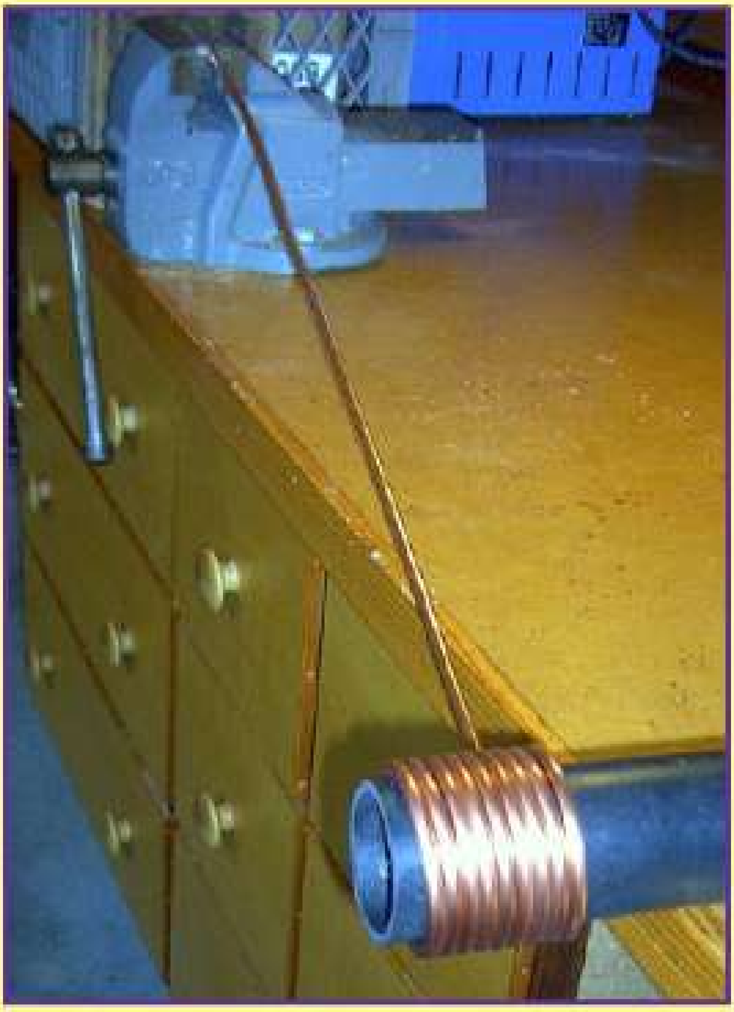
C_4 — 250-μμfd. (.00025 μfd.) mica fixed condenser, receiver type.

C_5 — 500-μμfd. (.0005 μfd.) variable condenser. Any good receiving condenser will be satisfactory.

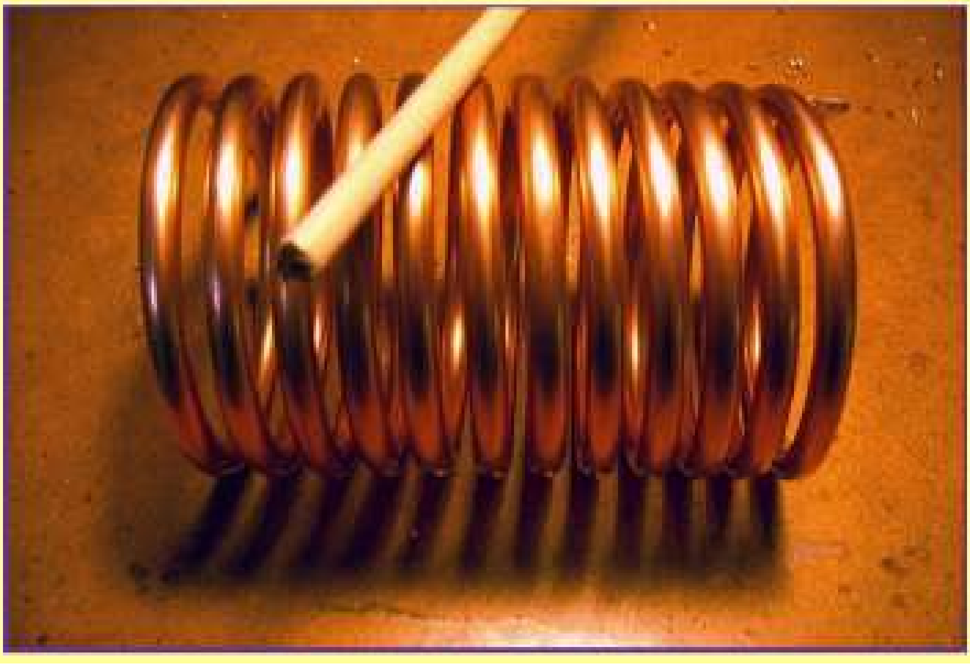
R_1 — Center-tapped resistor, 75 to 100 ohms total resistance.

R_2 — Grid-leak resistor, 10,000 ohms. Any small resistor rated at 5 watts or more will do.

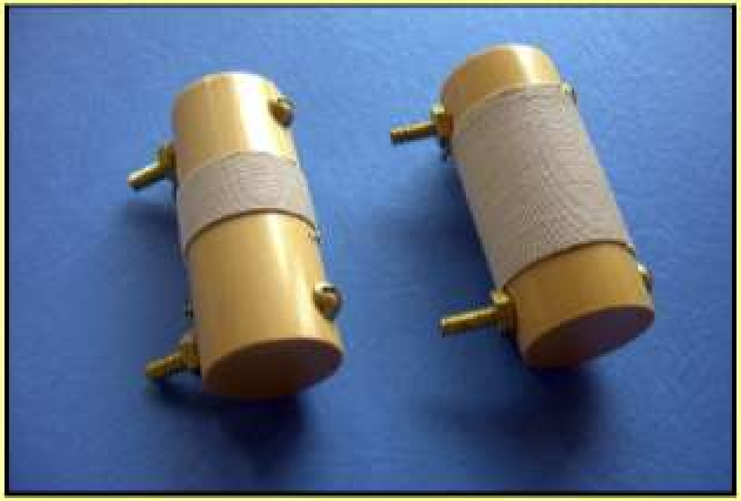
Three General Radio or similar stand-off insulators will be necessary, as well as 8 Fahnestock clips, some miscellaneous small machine screws and nuts, and a few feet of bus wire.



r coils. Once the proper number of turns is reached it is just a matter of flattening and drilling the ot
, I wound a plate coil for 40m as well. I haven't been brave enough to try the TNT on 20m yet but I w



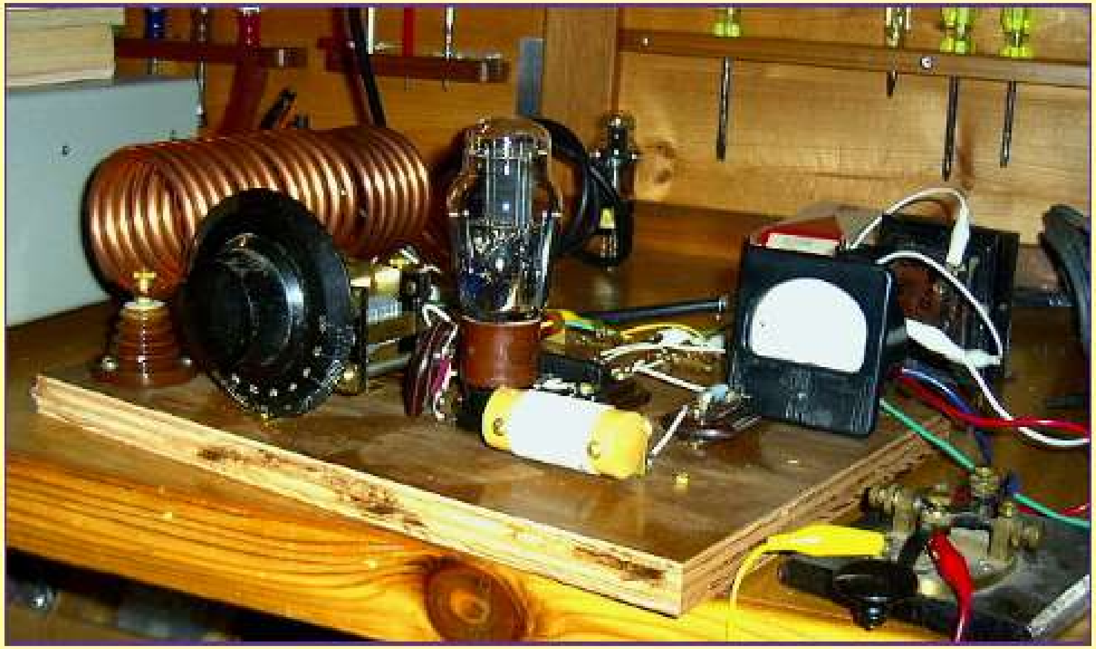
ither wound on bakelite tubing or on well-sealed wood dowel. Not having any bakelite made the choice any easy one. The 1" forms were made from some Yellow C



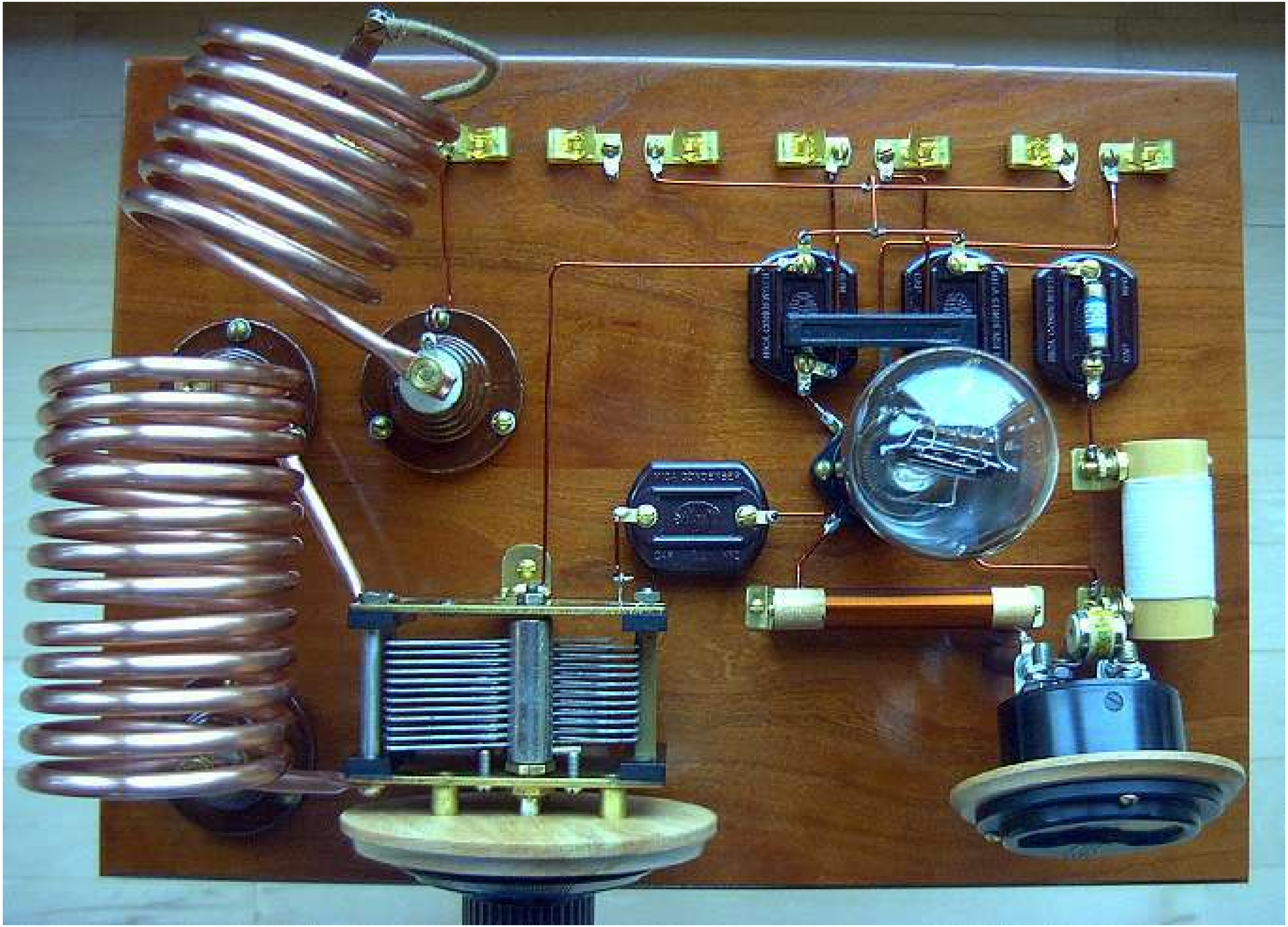
resistor was fabricated to resemble the original bakelite-enclosed 'Pilot' style, popular in the late 20's.The pictures indicate how this was done and the finished result. The small plexi-glass form was filled with black Fin
emoved and the entire package was baked in the kitchen toaster oven at its lowest temperature for several hours. This achieved the desired hardening effect and a suitable reproduction Pilot filament resistor.

reproduction also, of an early 'Lavite' model. The ends of a new wire-wound resistor were removed and found to be made from brass. These ends were then fitted to the body of an older style 10K resistor, soldered, pai
y across the terminals of the grid cap. I found out later that the actual value of the grid leak is quite critical in the TNT. I tried various values and luckily the one I had manufactured turned out to be perfect. My earlier
UX-210) required a far larger grid leak to produce best keying and good output. If you are making your own grid leak I would recommend that the value be optimized first, before the grid leak is built in its final form.

as breadboarded - first using the Type '45 and later with the Type '10. Various values were tried for both the grid leak and for the grid capacitor. Both affect keying and outp
ling of the plate voltage in order to remove high voltage from the large exposed tank coil. I did not want to run the chance of accidently grabbing hold of it late some evening
ference between shunt-feed and the standard series-feed method. It saddens me to think of all of the amateurs of the 20's or 30's that may have been unnecessarily hurt or ki

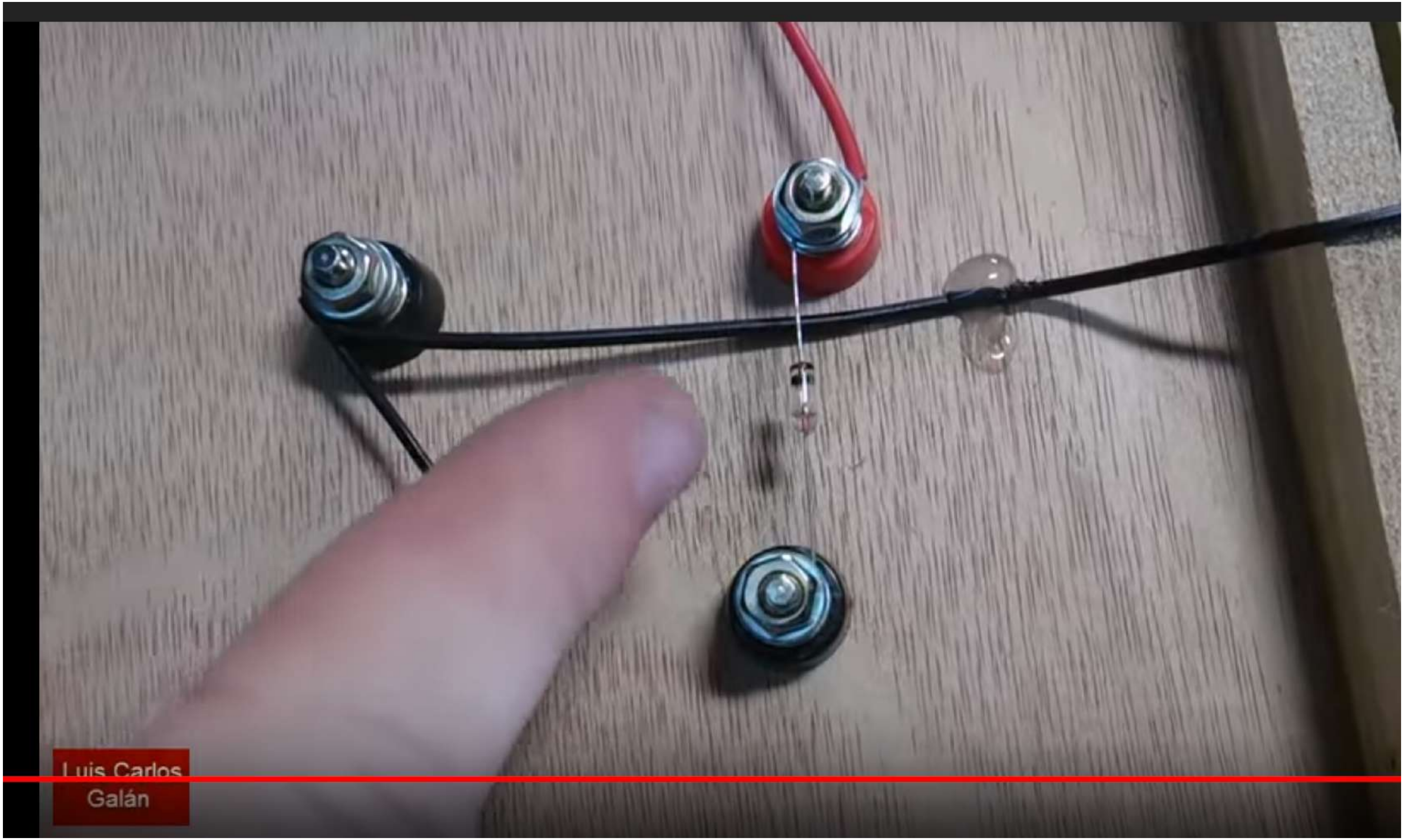


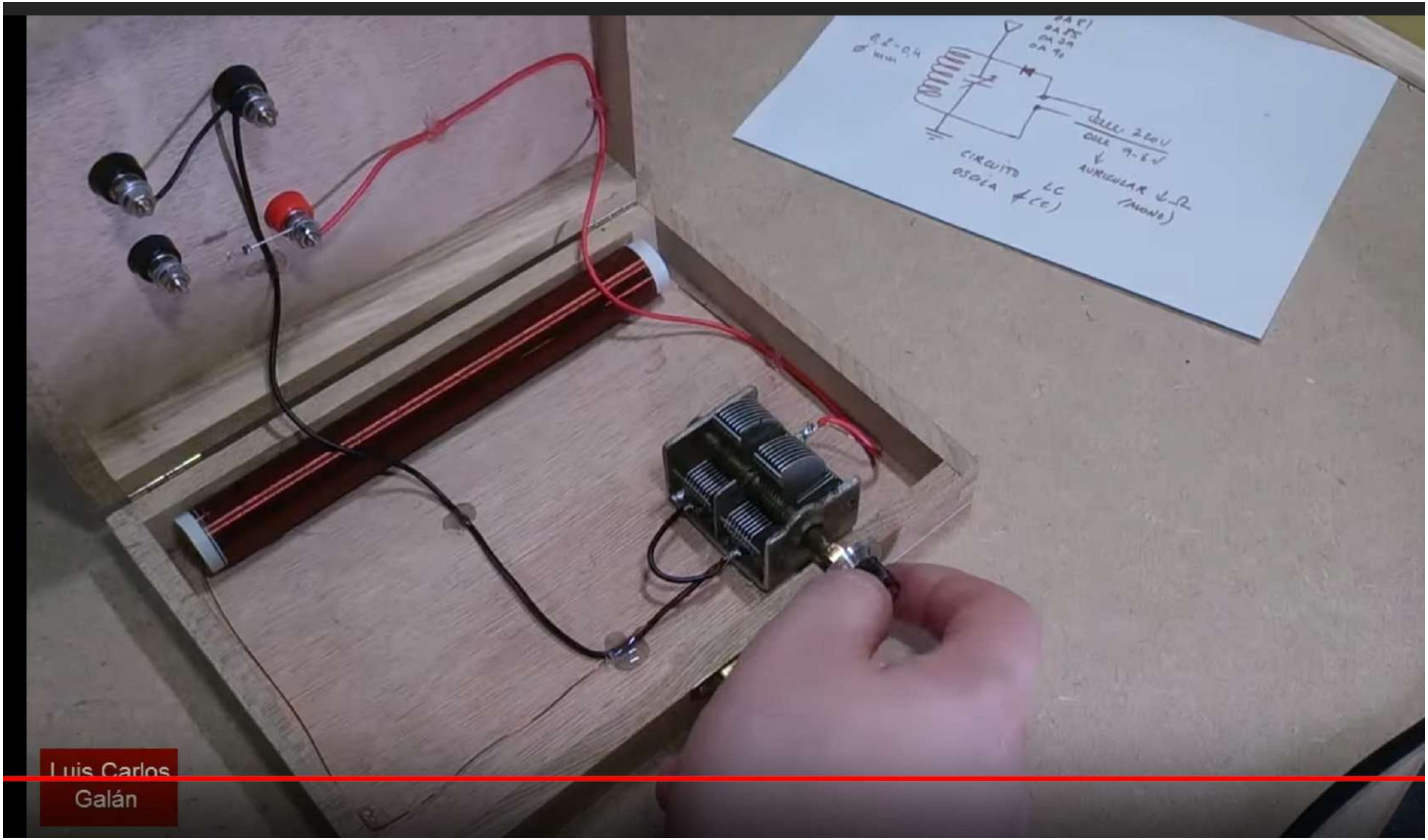

CANADIAN STATION
VE
7SL
TRANSMITTER
RECEIVER
REMARKS
MAYNE ISLAND, BRITISH COLUMBIA, CANADA
MILLIAMPERES

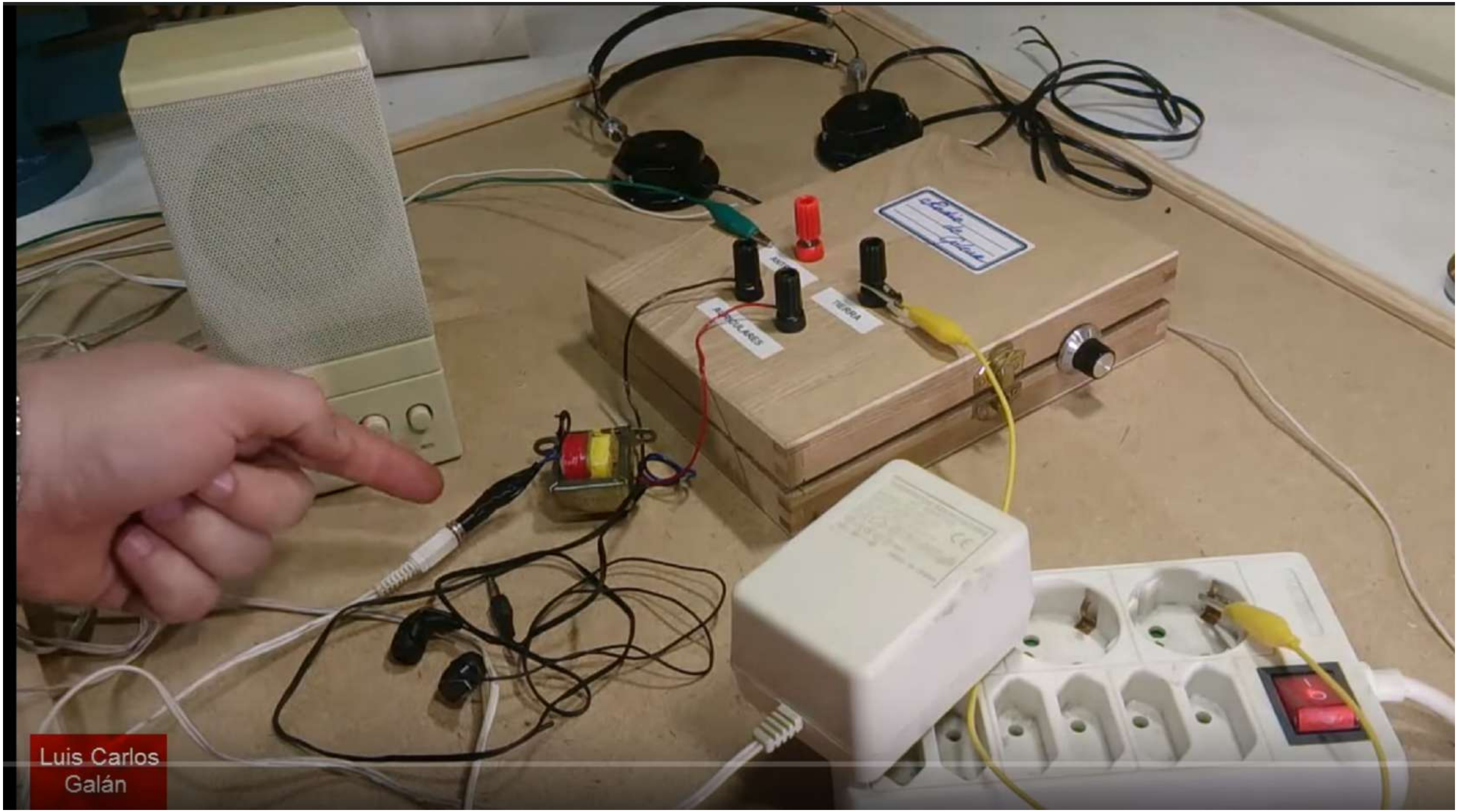


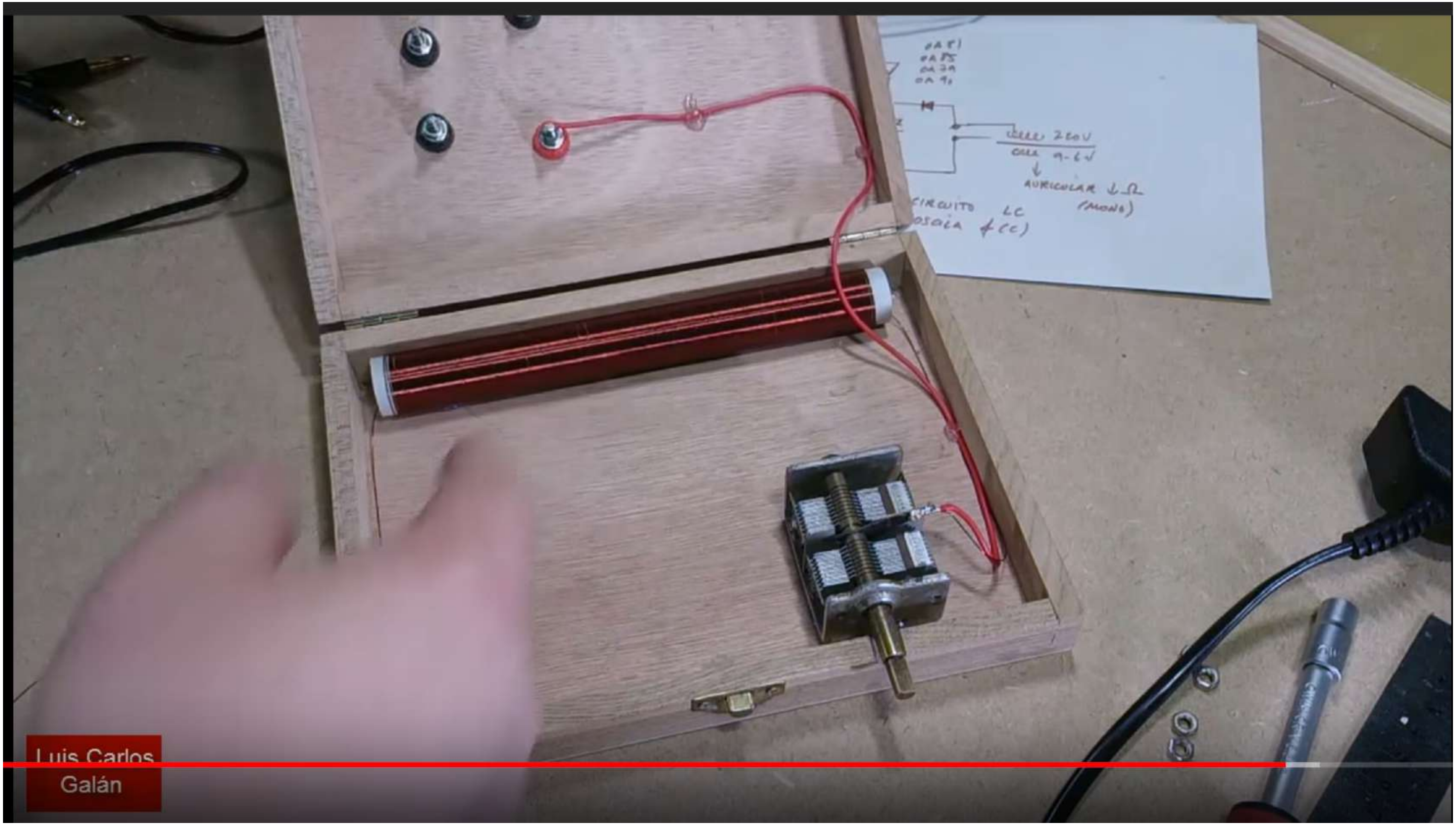

0 10 20 30 40 50 60 70 80 90 100

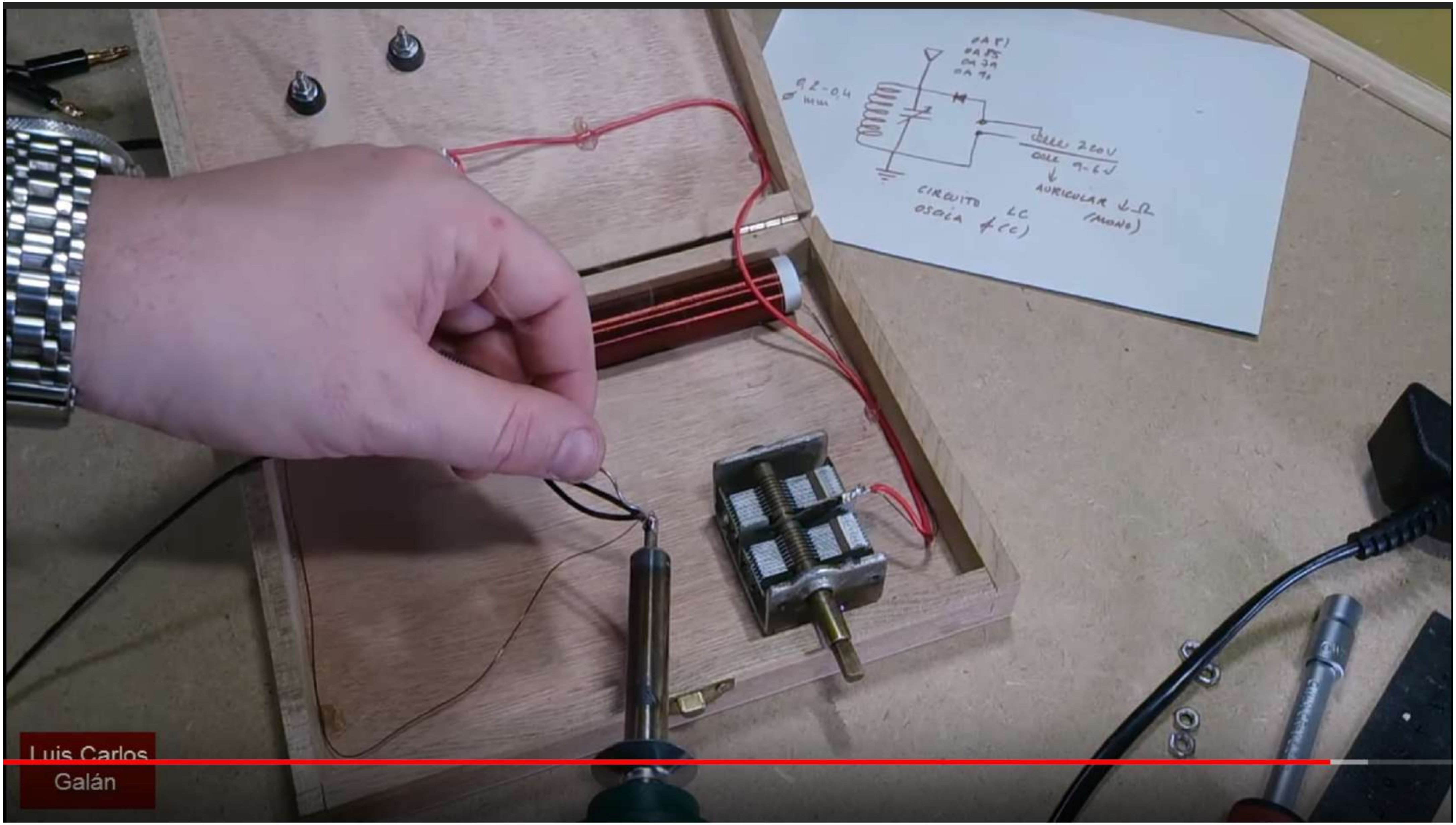

Survival Camping: #1 Turn Seawater into Fresh Water with Trash
6:34 / 15:40
YouTube

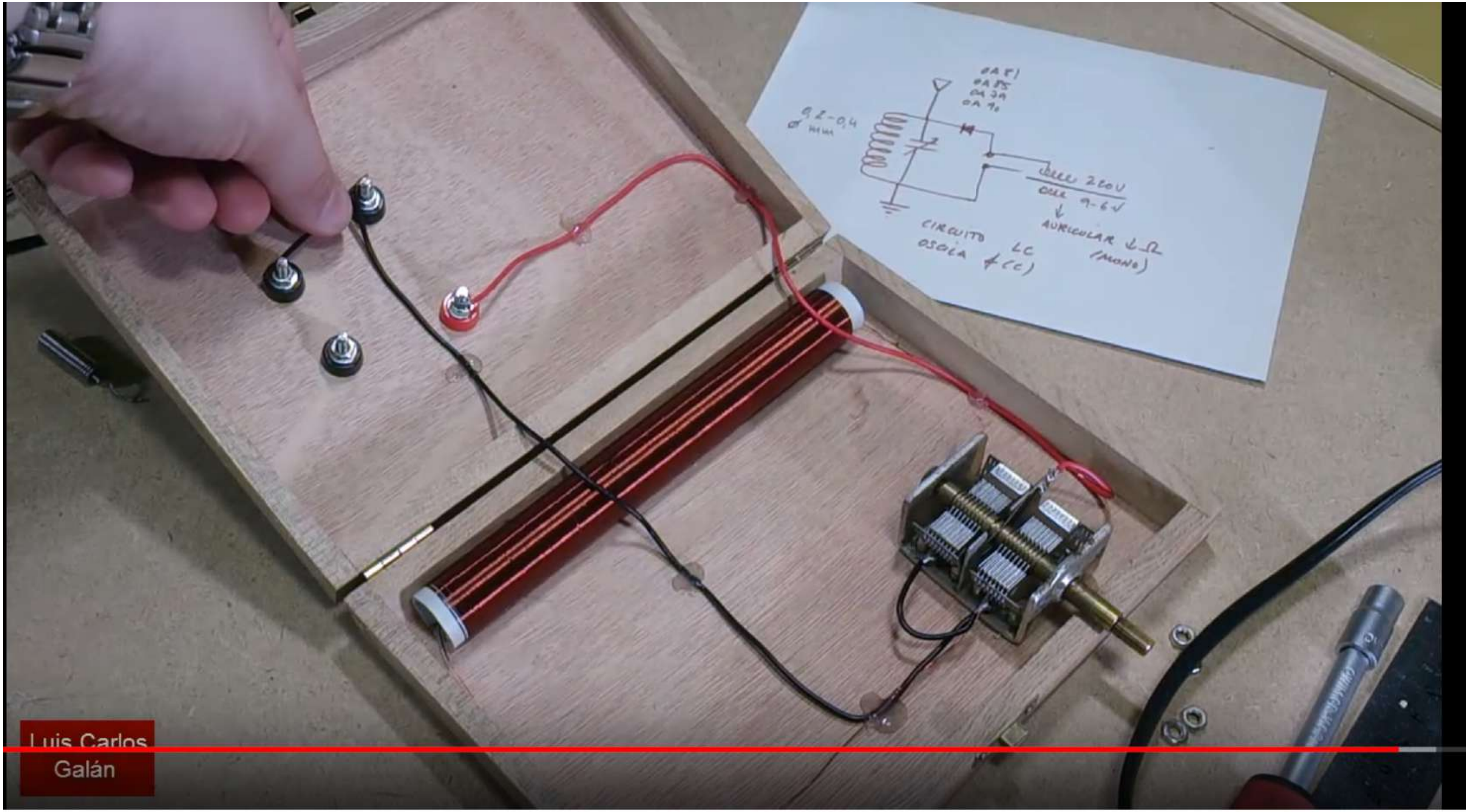

Luis Carlos
Galán


CIRCUITO LC
OSCILA
AURICULAR
(MONO)
Luis Carlos
Galán

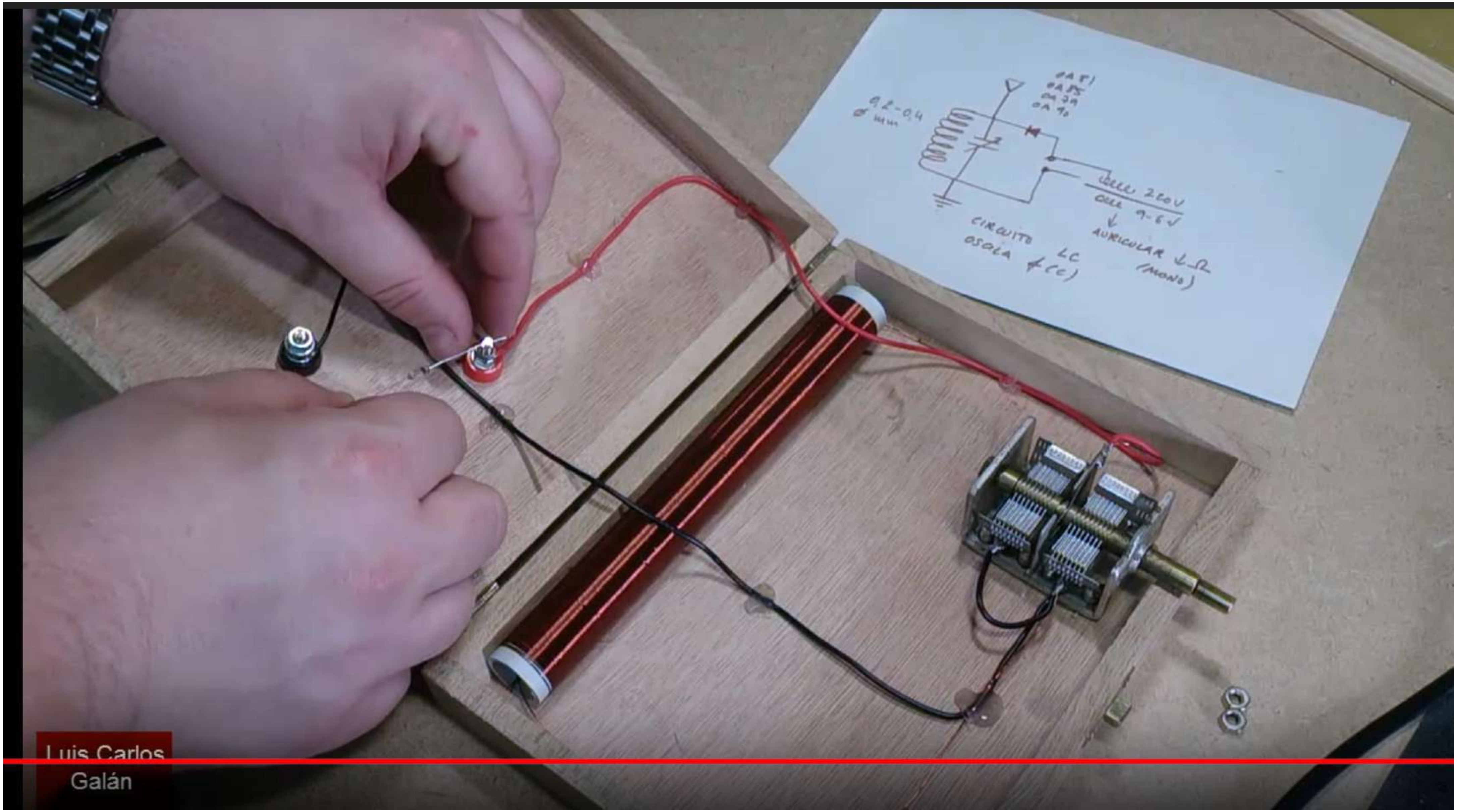

TIERRA
Luis Carlos
Galán

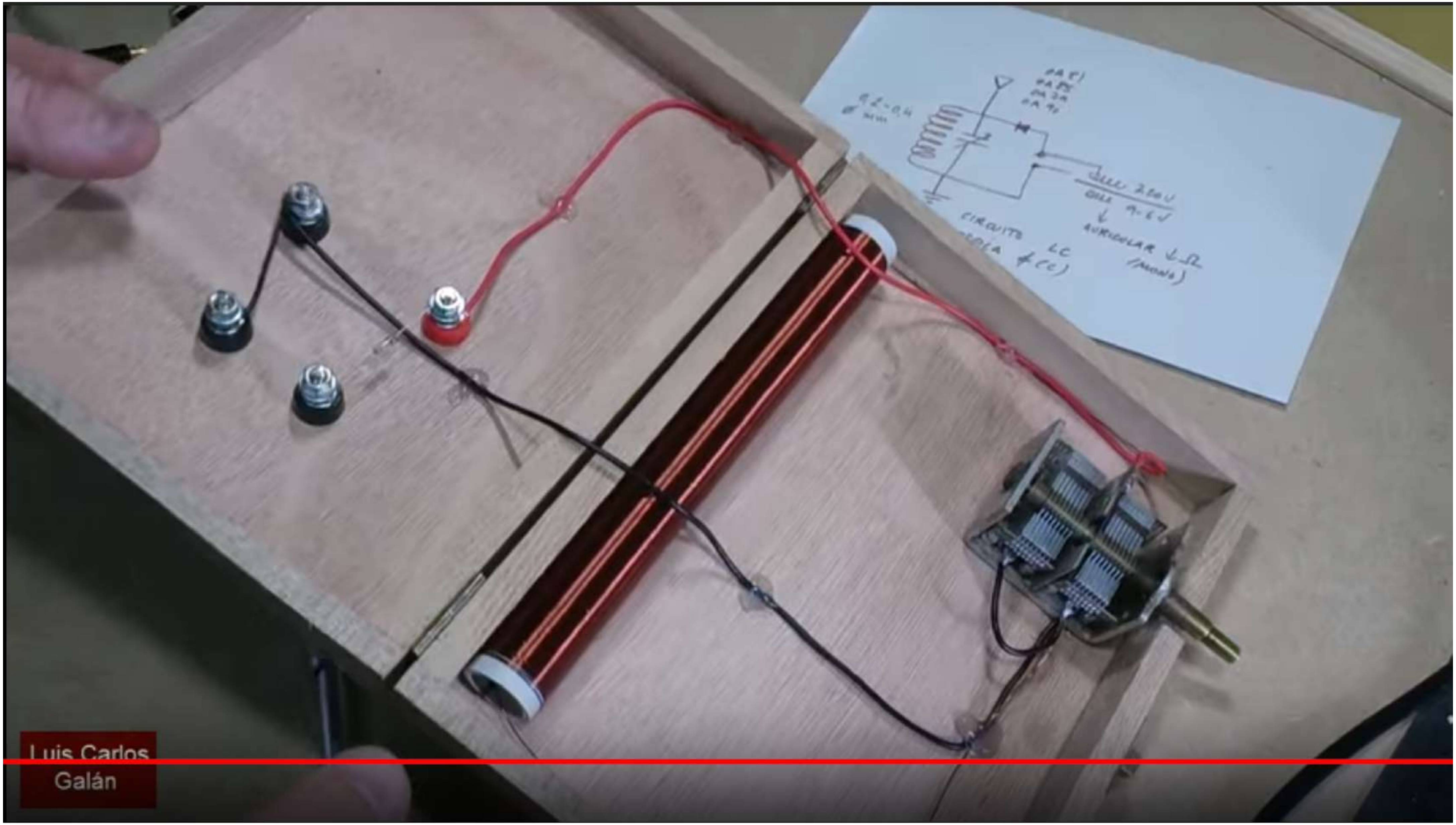

OA 85
220V
AURICULAR
(MONO)
LC
Luis Carlos Galán

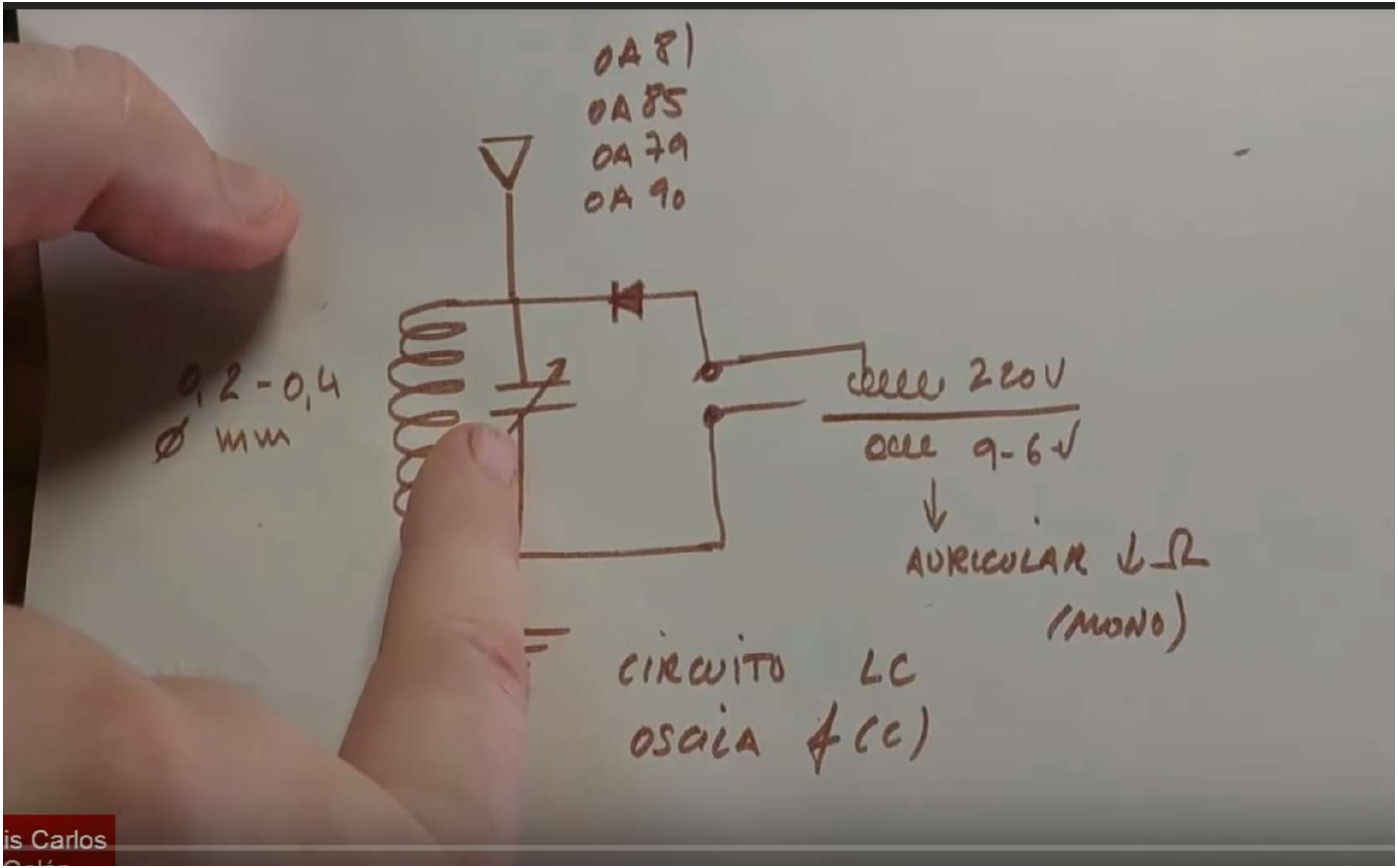

220V
AURICULAR
(MONO)
CIRCUITO LC
Luis Carlos Galán



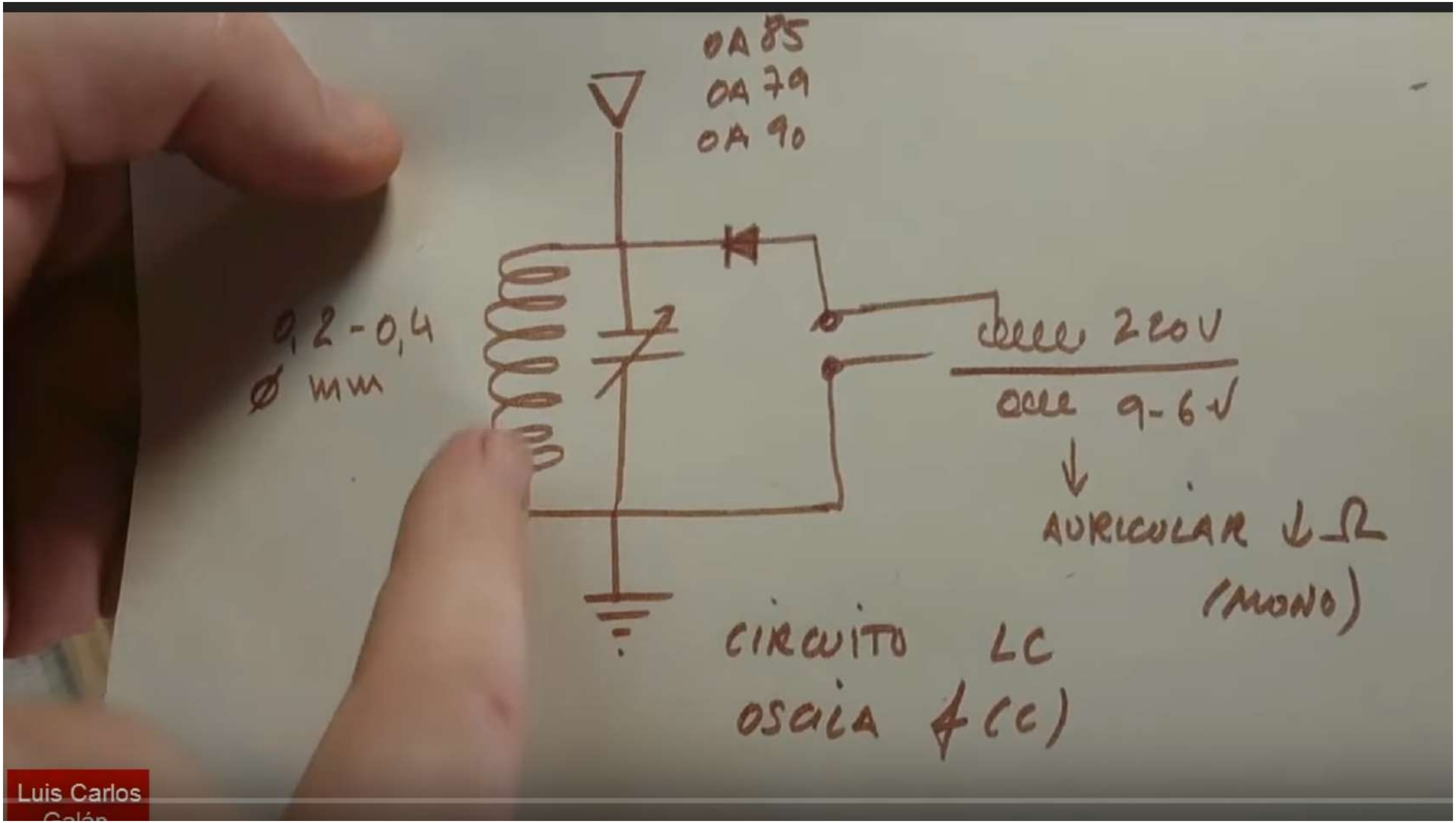
OA 81
OA 85
OA 79
OA 90
0,2-0,4
mm
220V
9-6V
AURICULAR
(MONO)
CIRCUITO
OSCILA
LC
f(c)
Luis Carlos
Galán

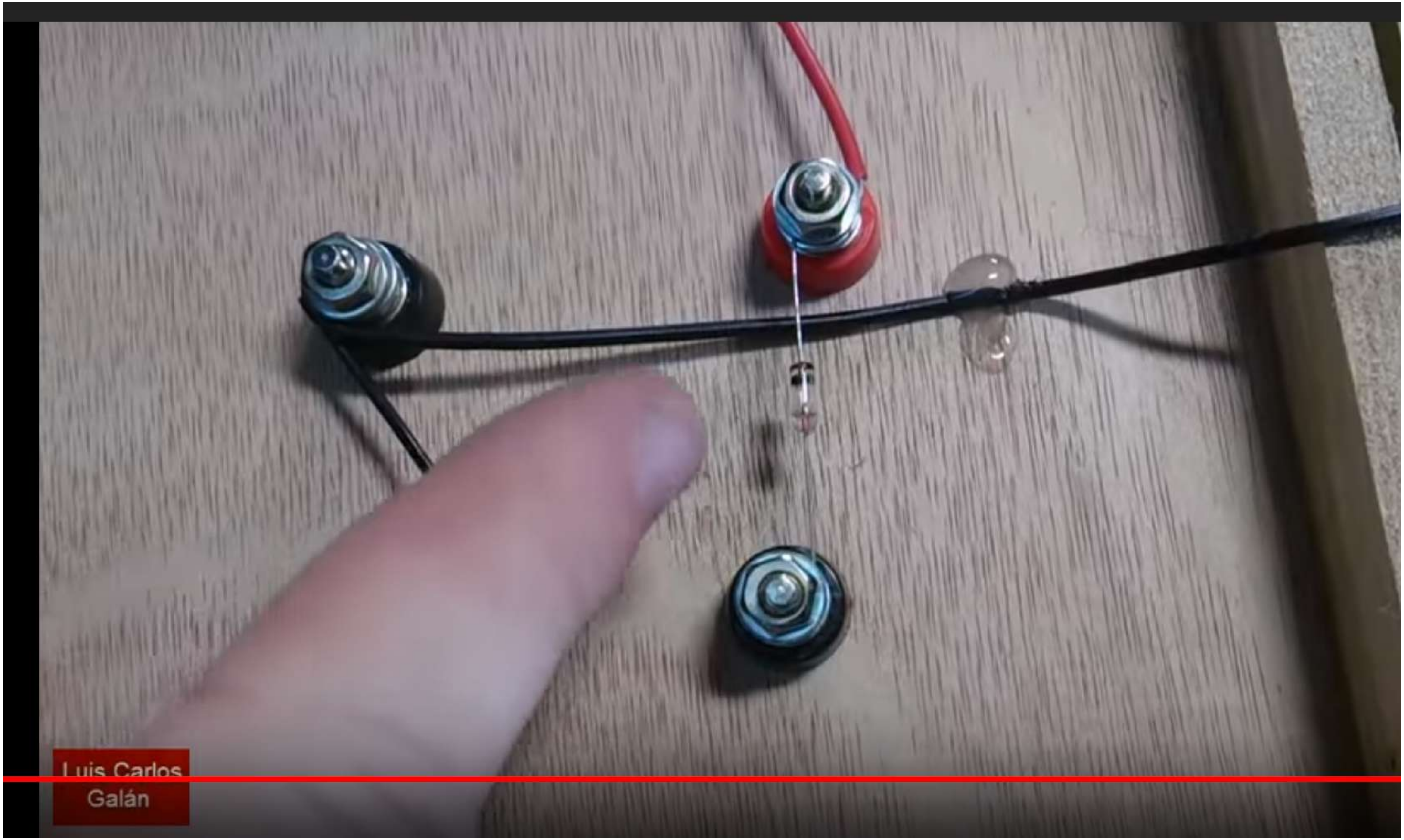

CIRCUITO
OSCILA
LC
AURICULAR
(MONO)
Luis Carlos
Galán

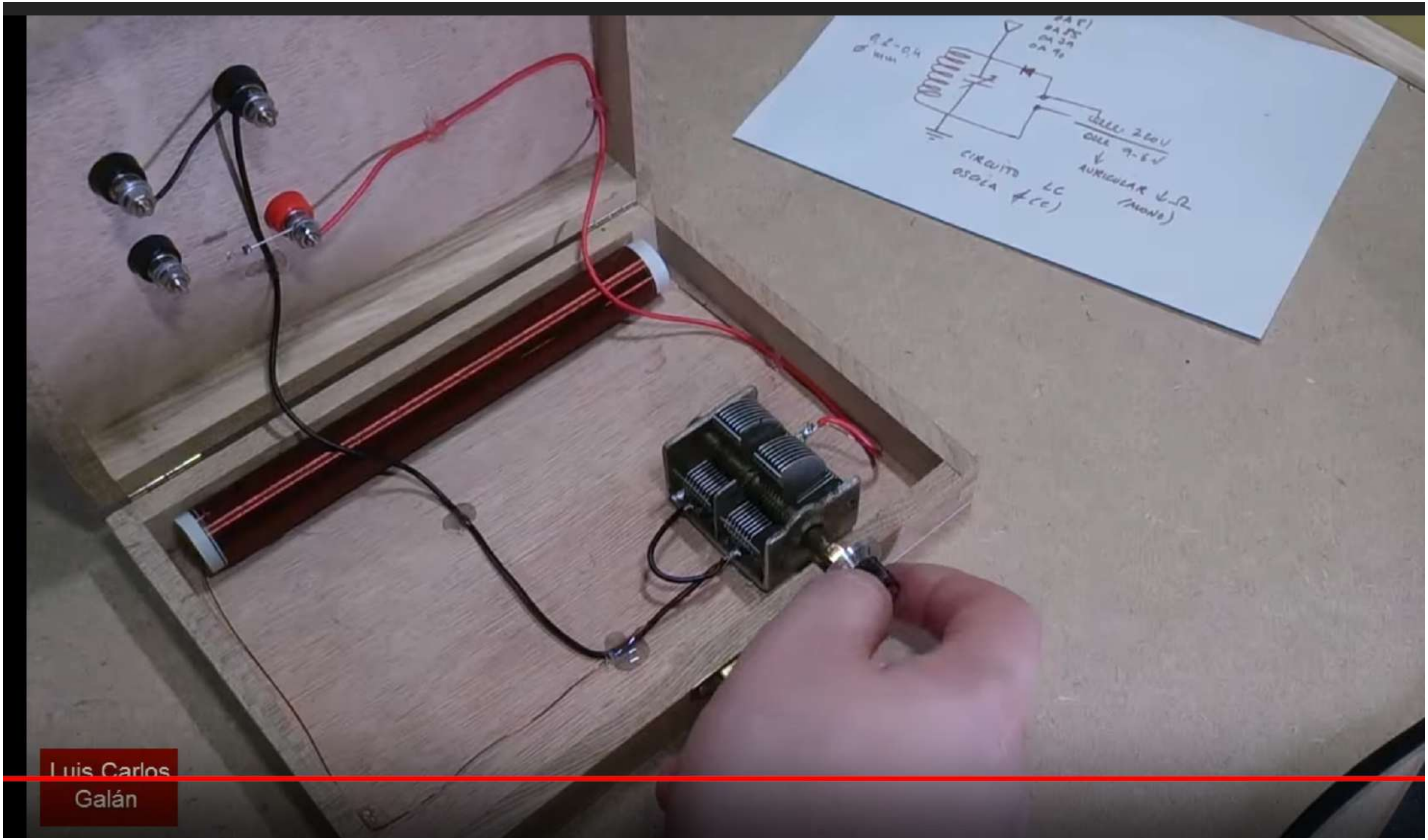

CIRCUITO
LC
AURICULAR
Luis Carlos
Galán

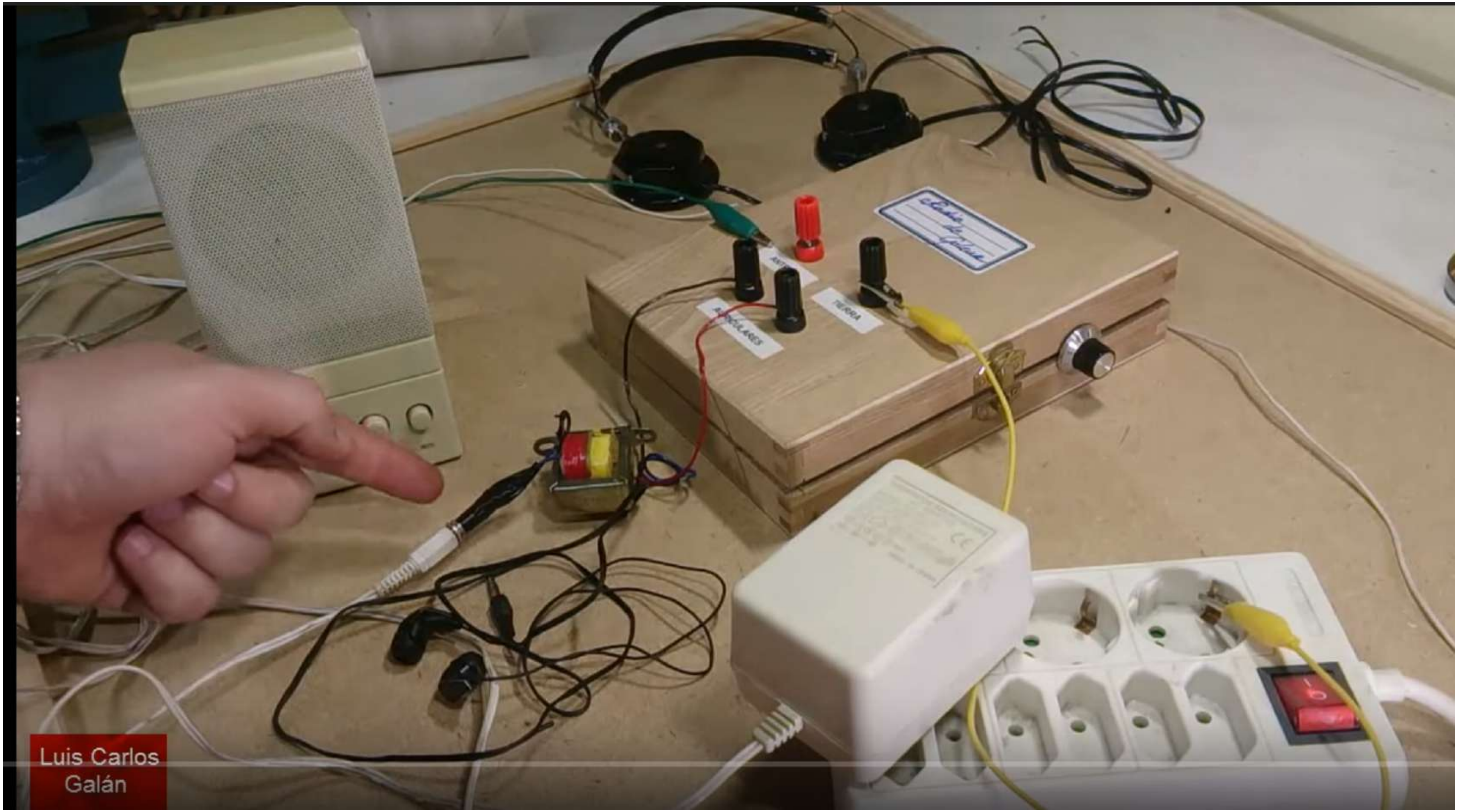

OA 81
OA 85
OA 79
OA 90
0,2 - 0,4
Ø mm
220V
9-6V
AURICULAR
(MONO)
CIRCUITO LC
OSCILA
is Carlos

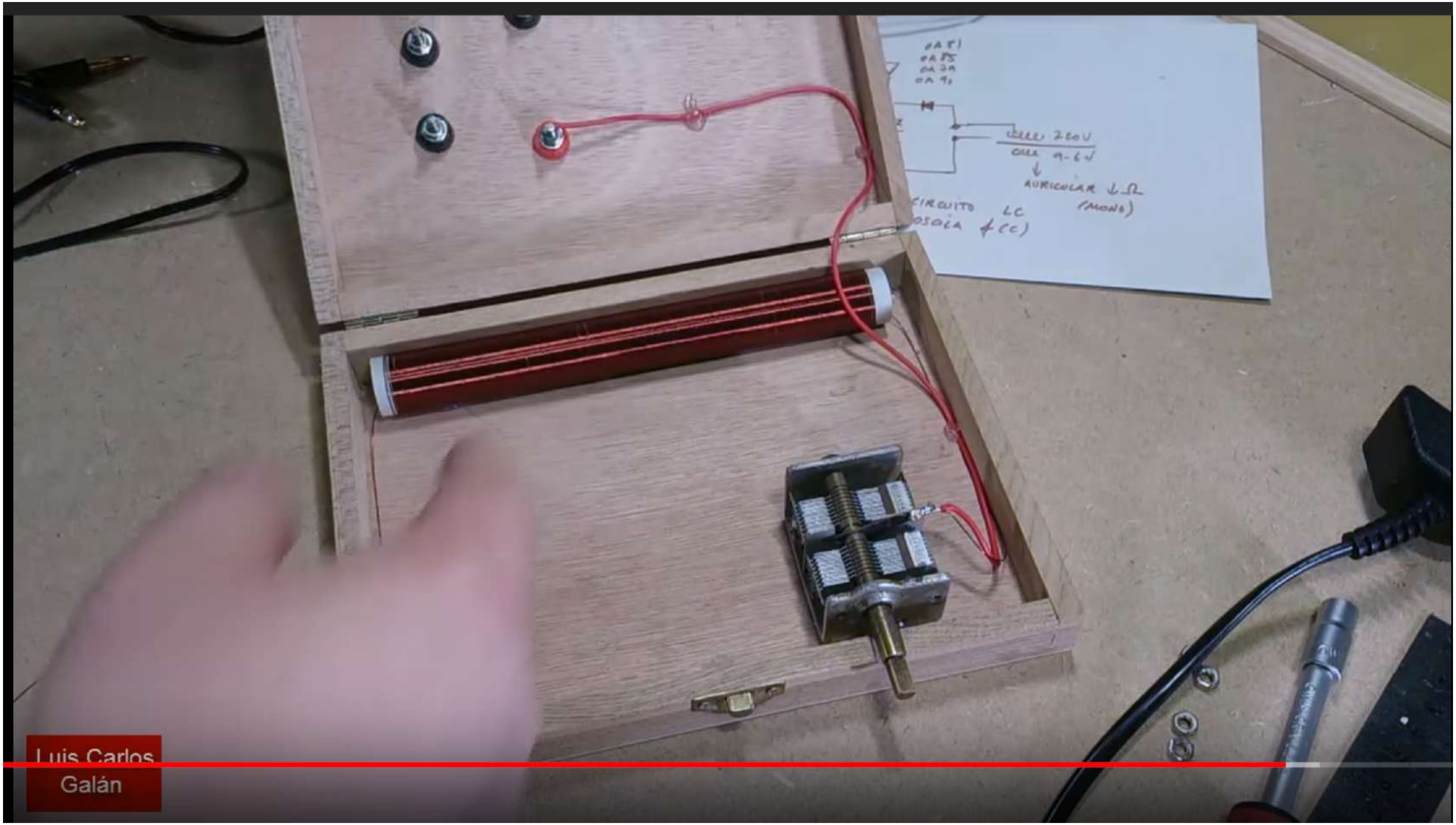

Luis Carlos
Galán

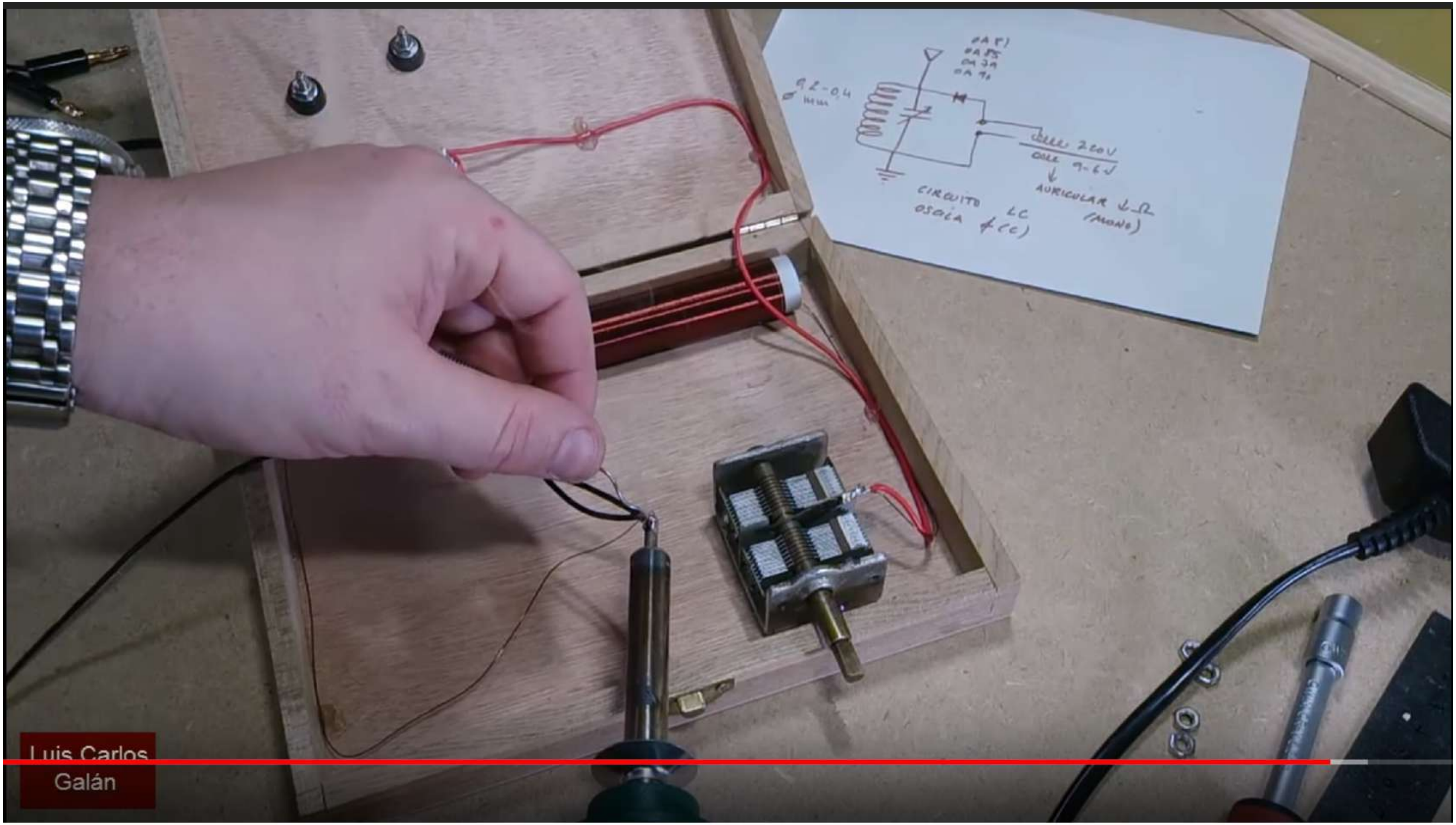

OA 85
OA 79
OA 90
0,2 - 0,4
Ø mm
220 V
9 - 6 V
AURICULAR ↓ Ω
(MONO)
CIRCUITO LC
OSCILA f(C)
Luis Carlos
Galán

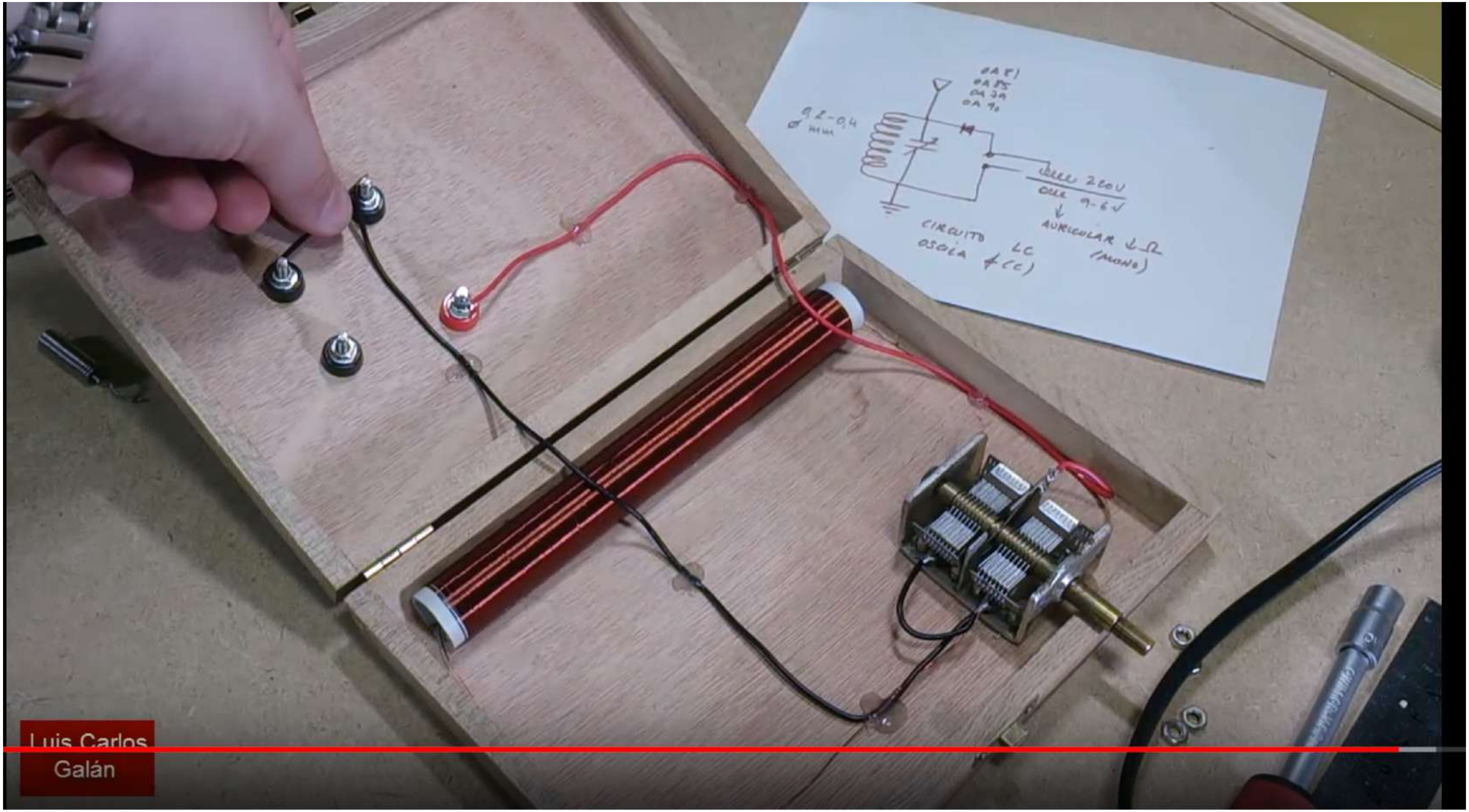

Luis Carlos
Galán

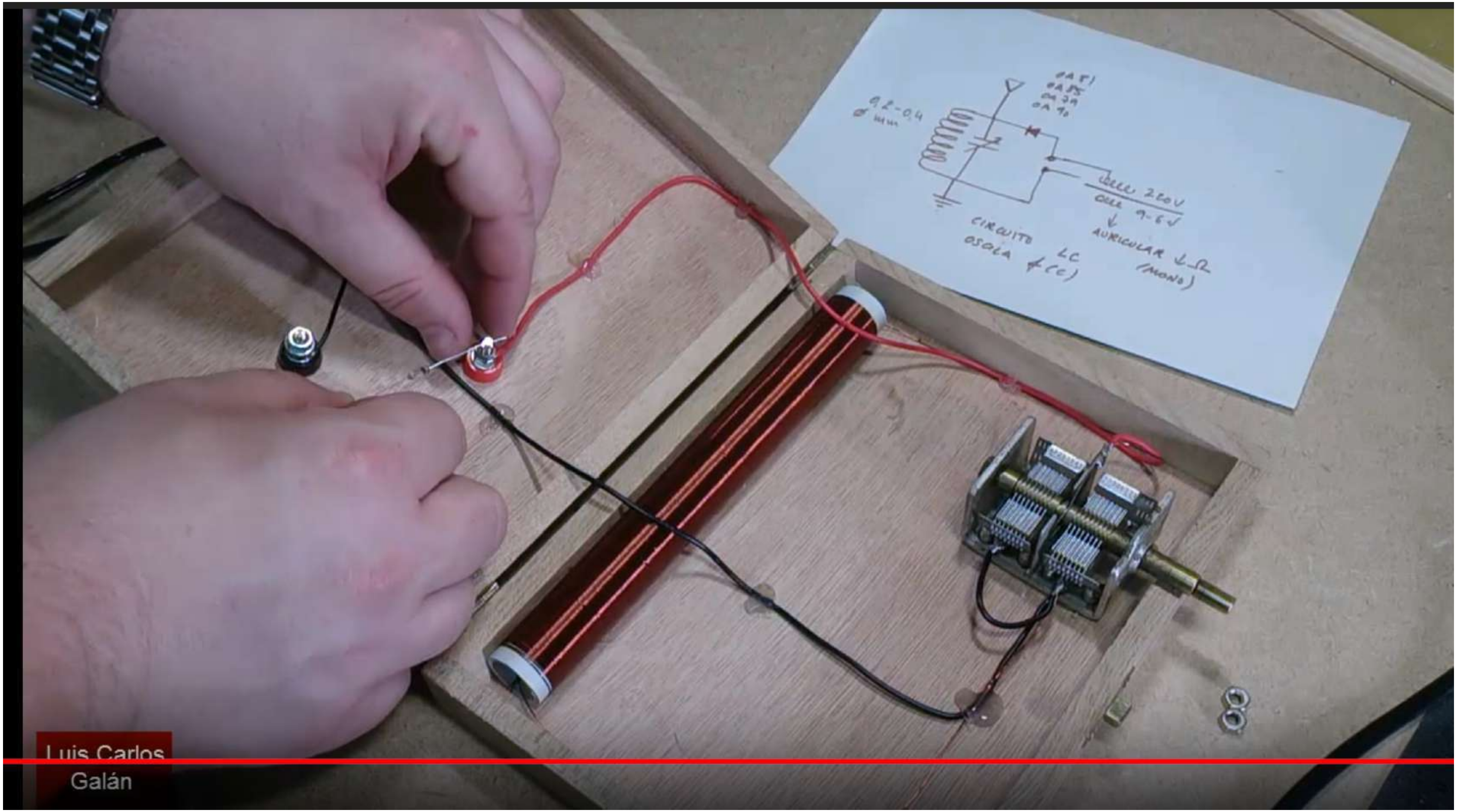

Luis Carlos
Galán

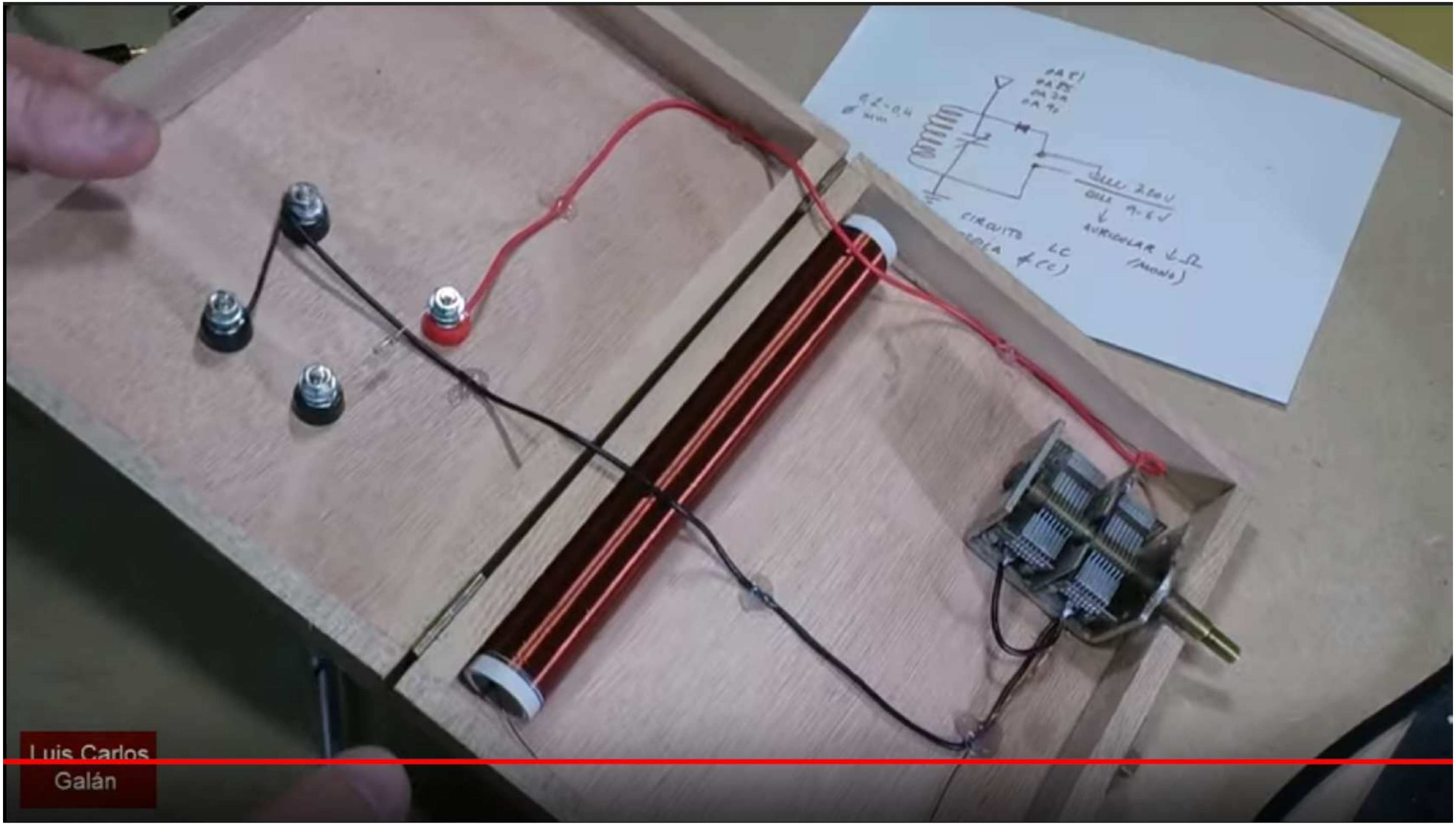

TIERRA
Luis Carlos
Galán

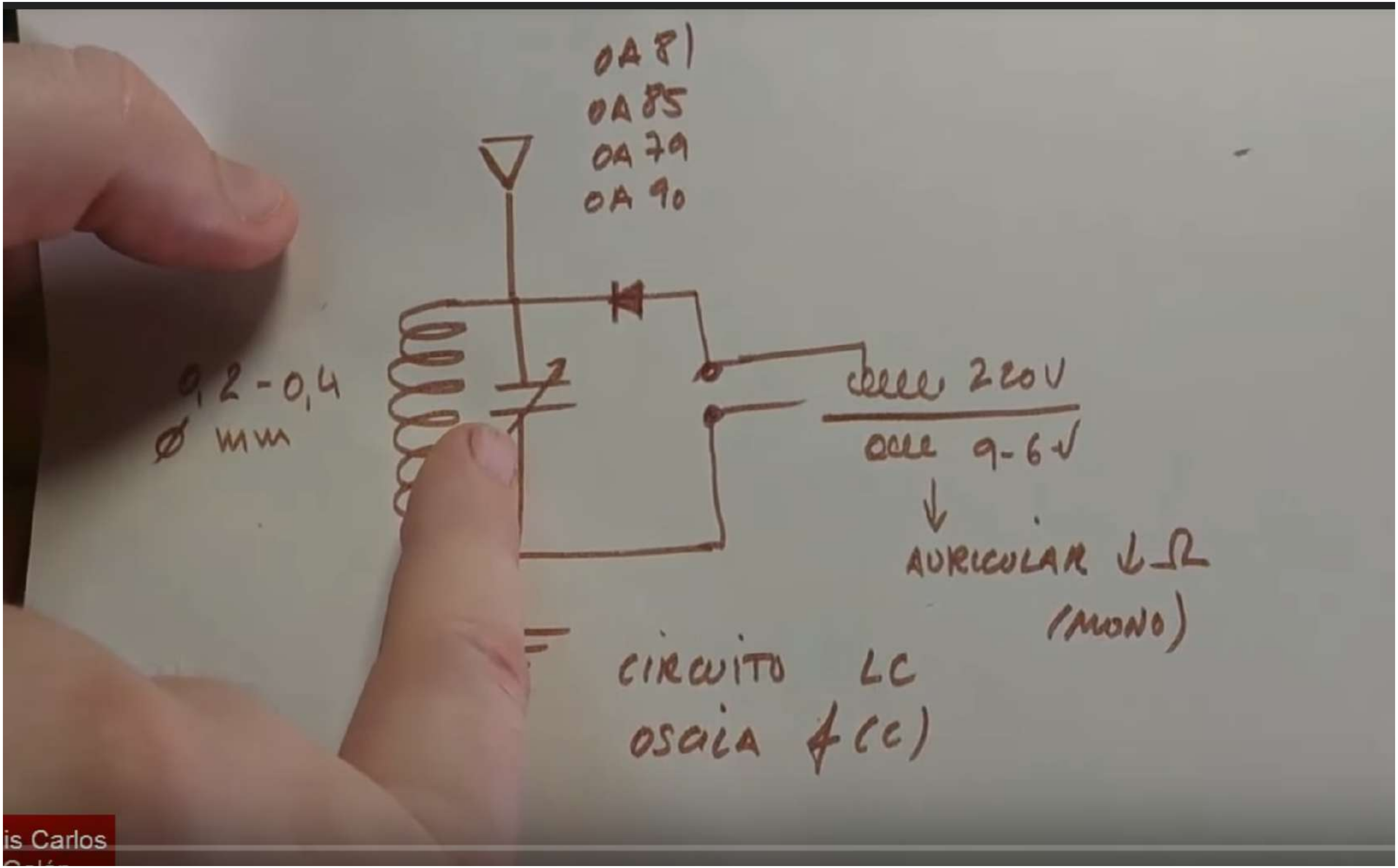

Luis Carlos
Galán


CIRCUITO LC
AURICULAR
(MONO)
Luis Carlos
Galán


CIRCUITO
OSCILA
LC
AURICULAR
(MONO)
Luis Carlos
Galán

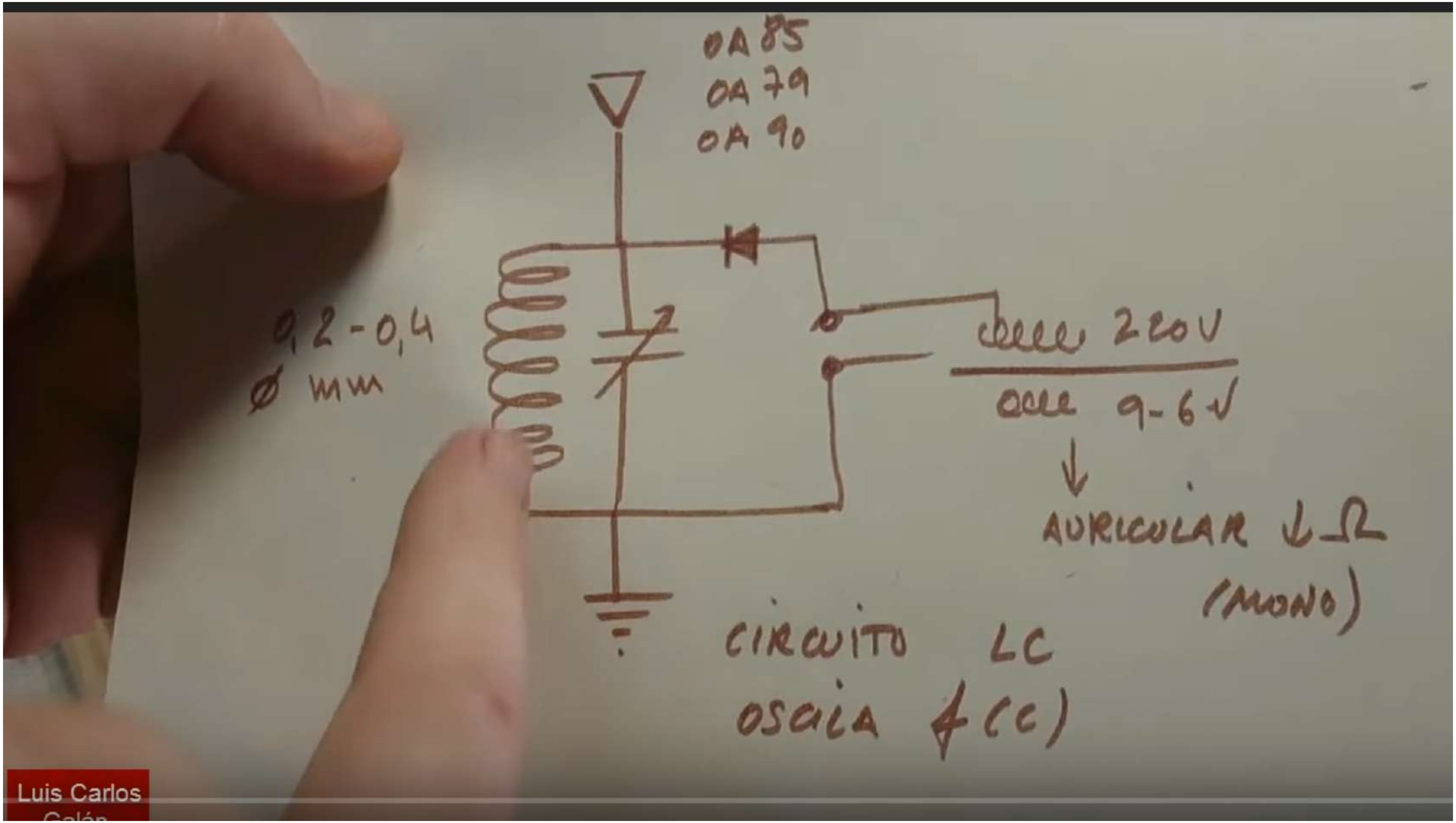

0,2-0,4
Ø mm
220V
9-6V
AURICULAR
CIRCUITO
OSCILA
LC
(MONO)
Luis Carlos
Galán


Luis Carlos
Galán

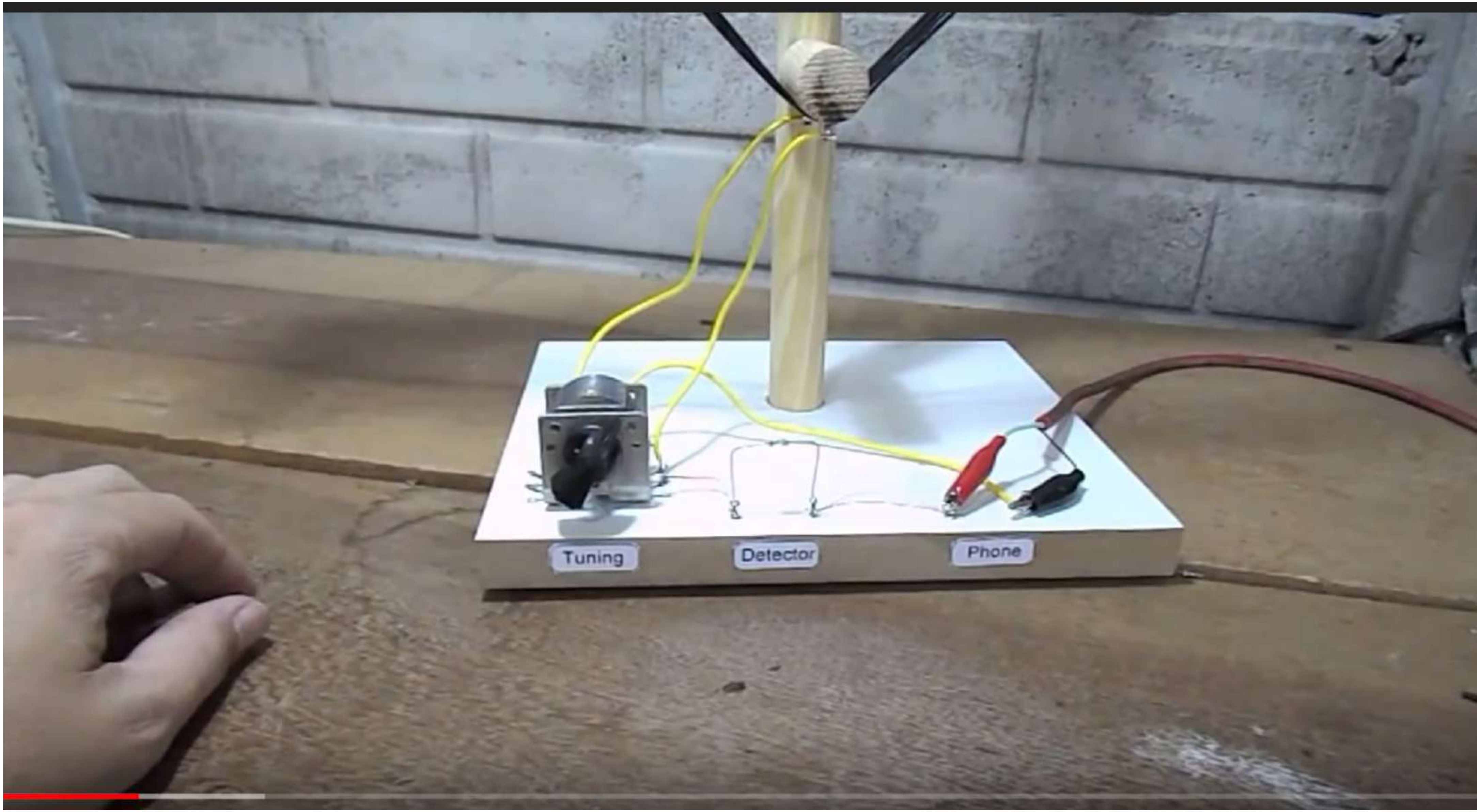


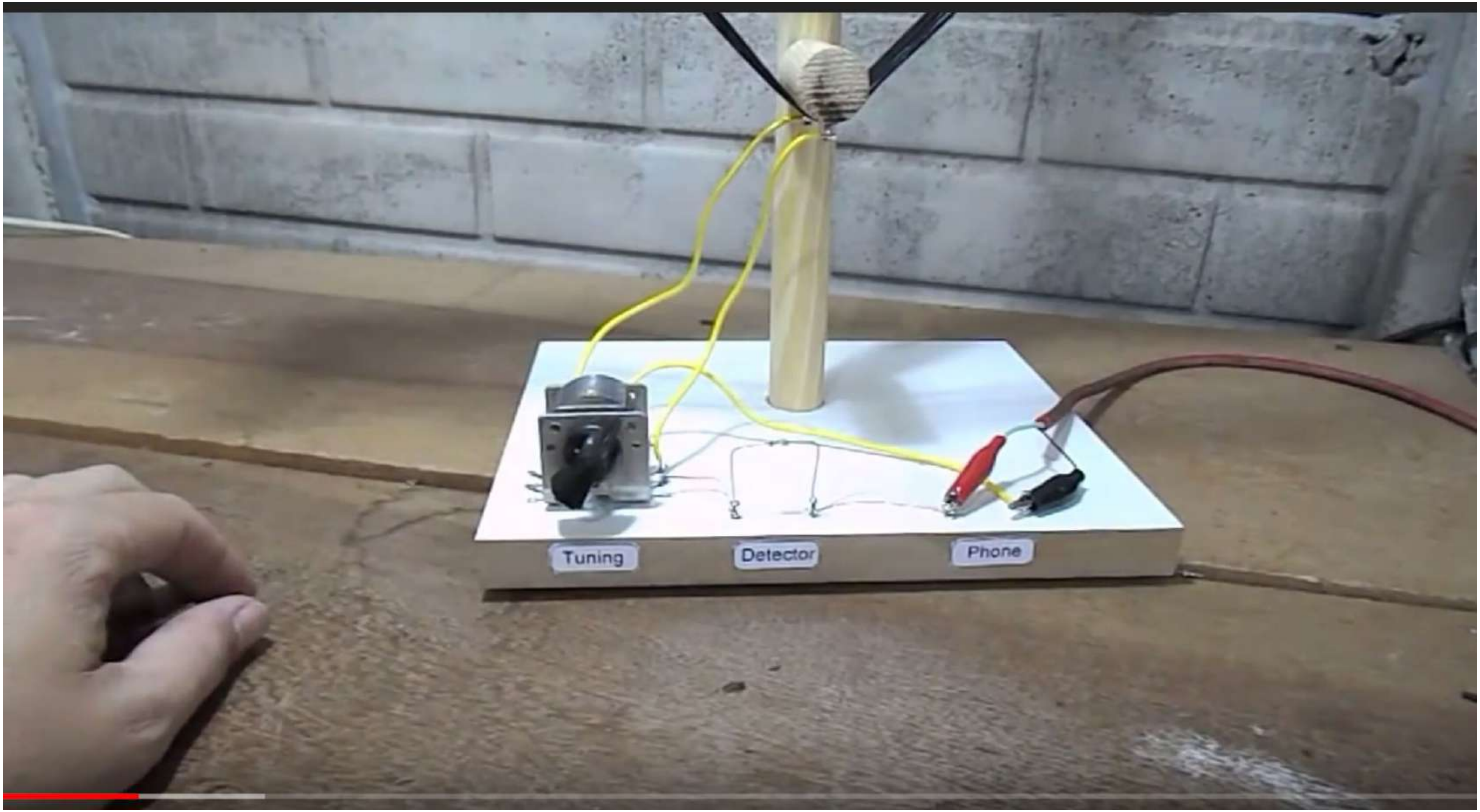
OA 81
OA 85
OA 79
OA 90
0,2 - 0,4
Ø mm
220V
9-6V
AURICULAR ↓Ω
(MONO)
CIRCUITO LC
OSCILA f(C)
is Carlos

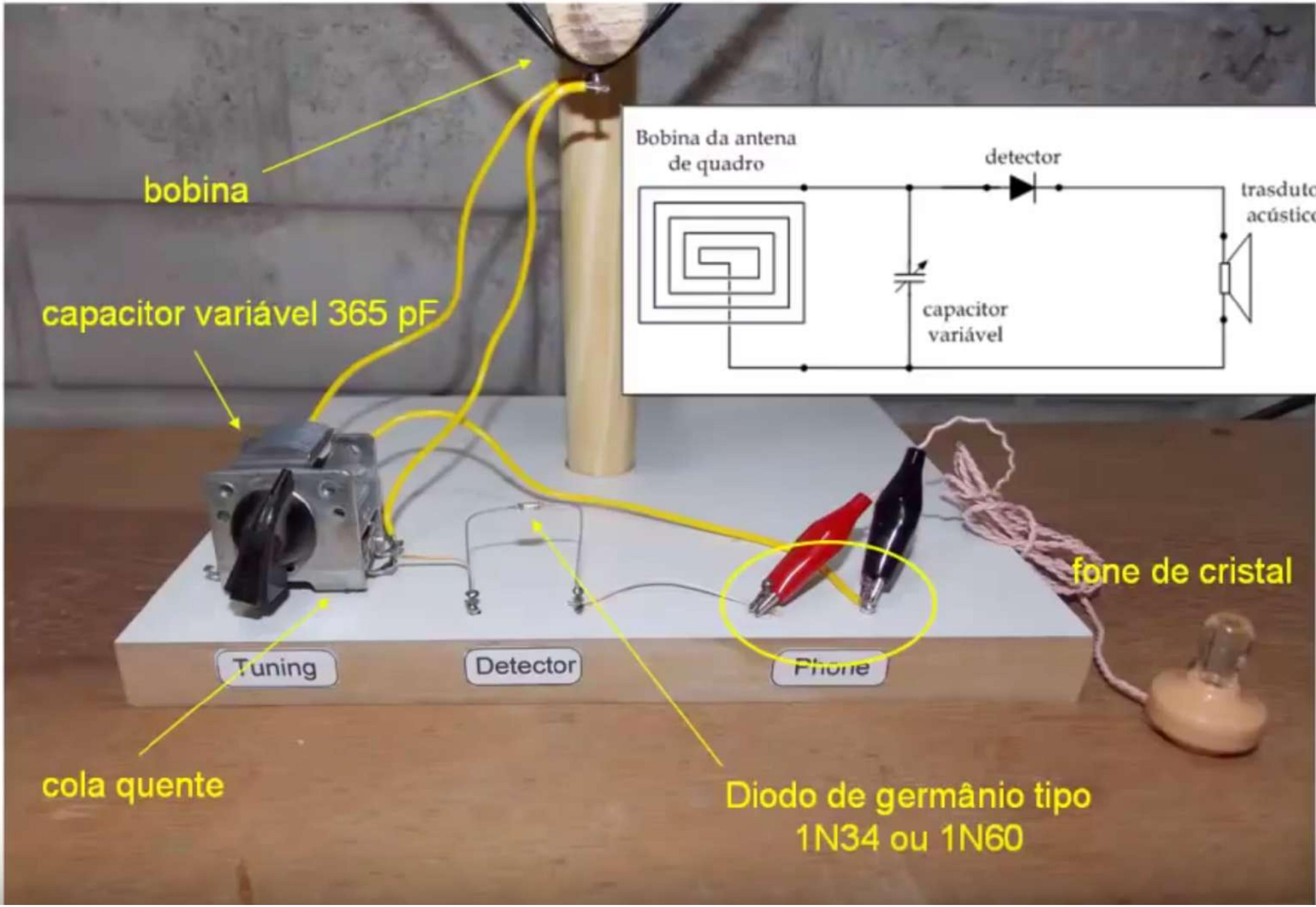

Luis Carlos
Galán


OA 85
OA 79
OA 90
0,2 - 0,4
Ø mm
220 V
9 - 6 V
AURICULAR ↓ Ω
(MONO)
CIRCUITO LC
OSCILA f(C)
Luis Carlos


Luis Carlos
Galán


Tuning
Detector
Phone


Tuning
Detector
Phone



bobina
capacitor variável 365 pF
cola quente
Tuning
Detector
Phone
fone de cristal
Diodo de germânio tipo
1N34 ou 1N60
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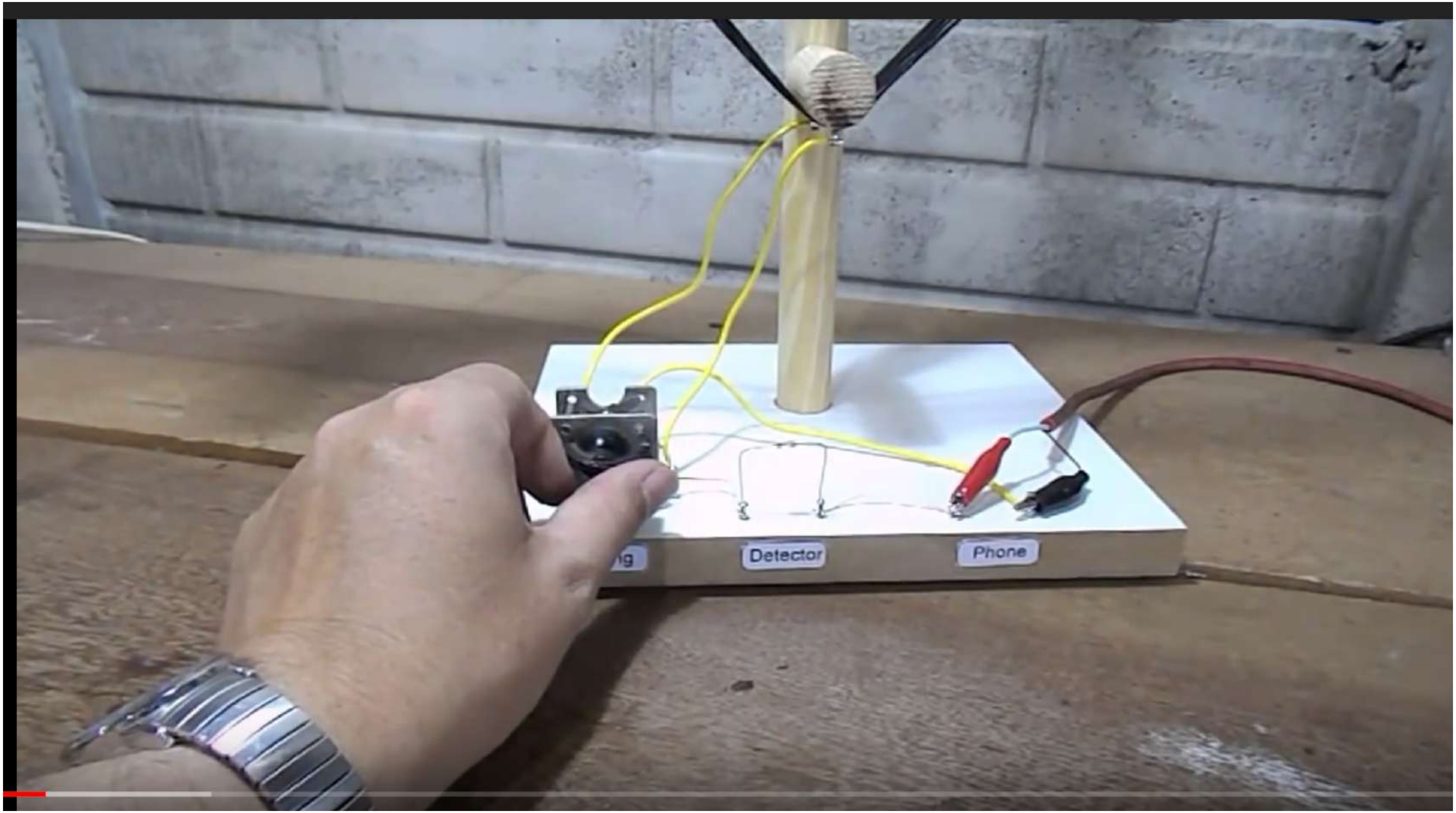
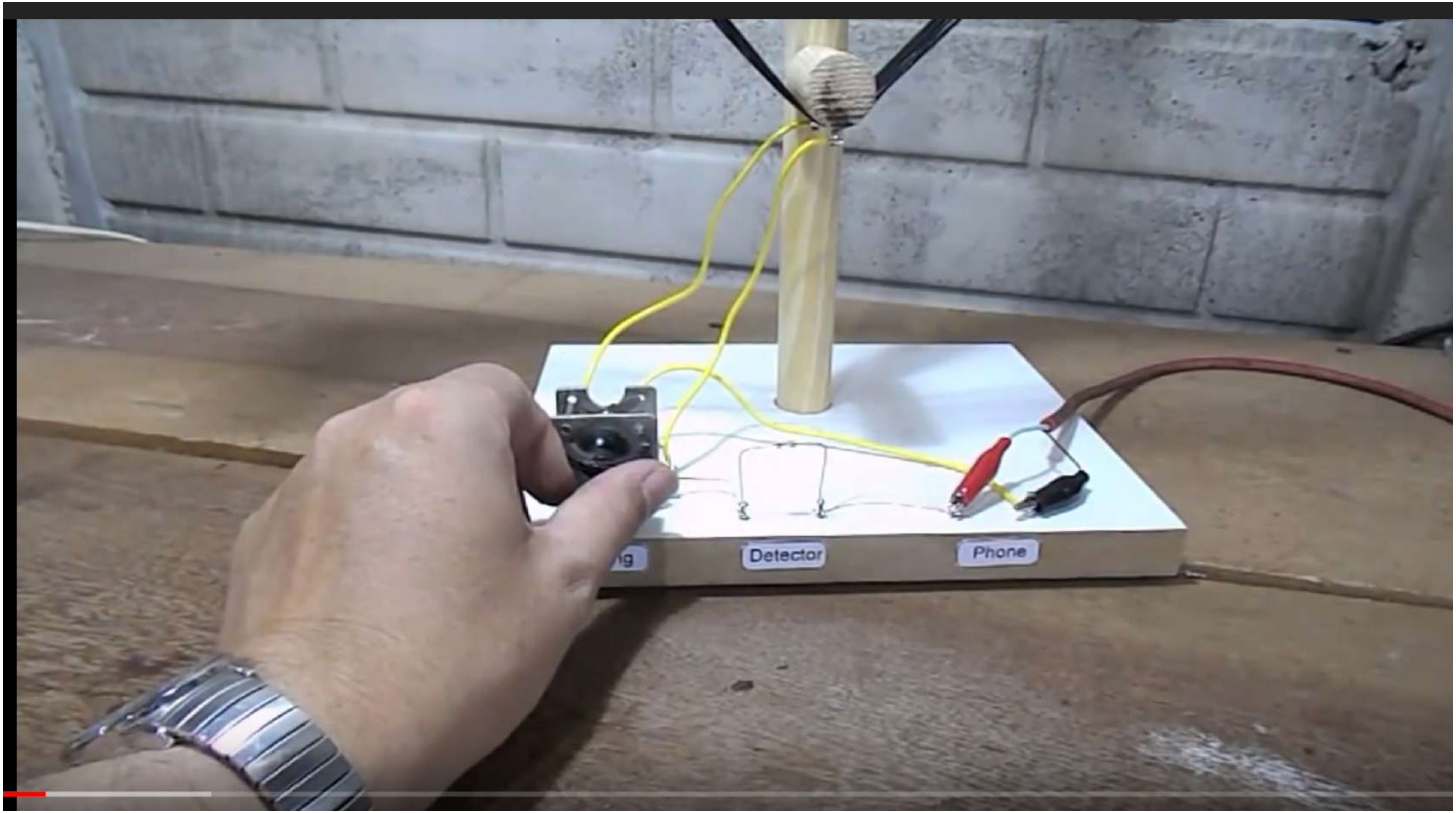
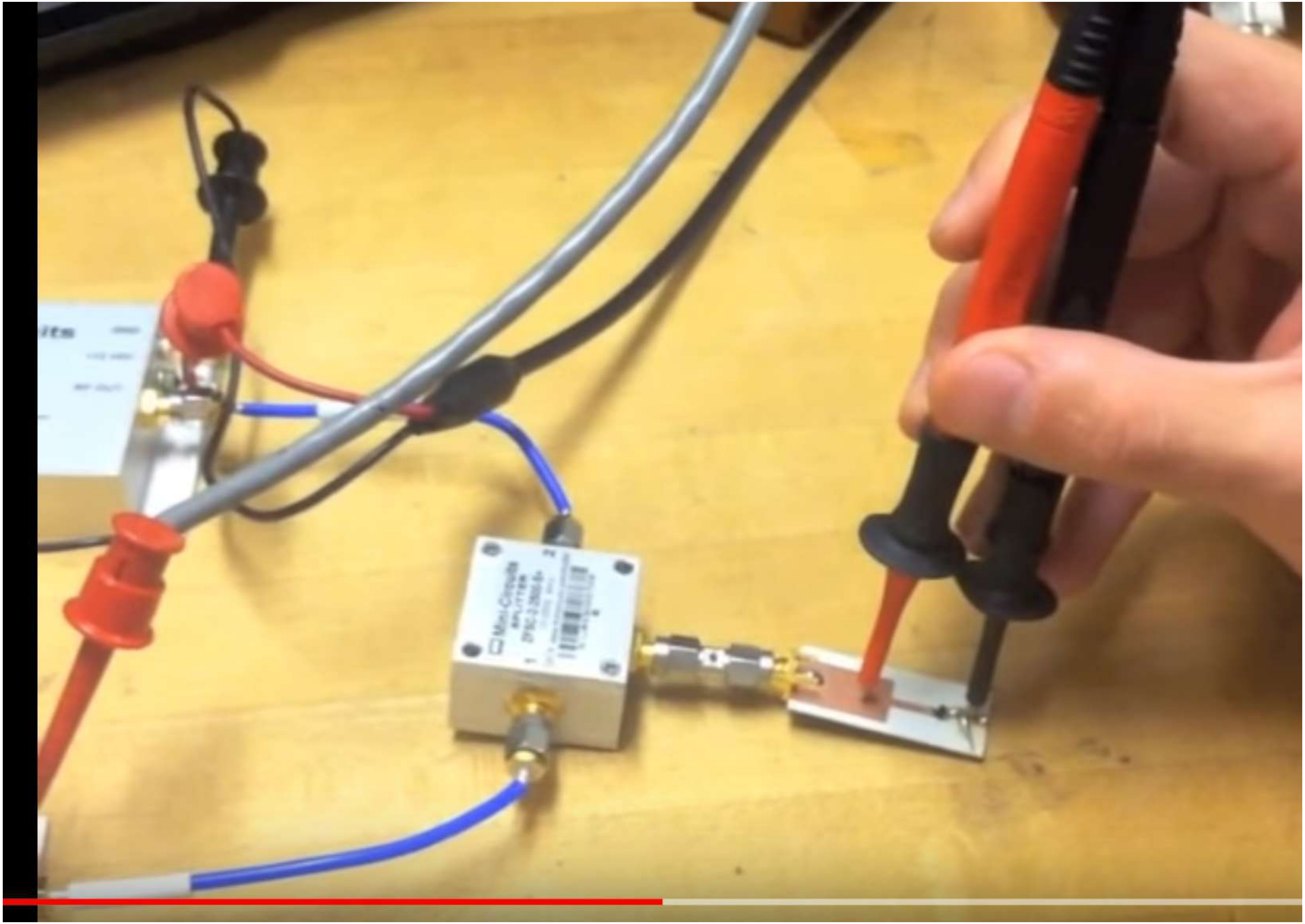
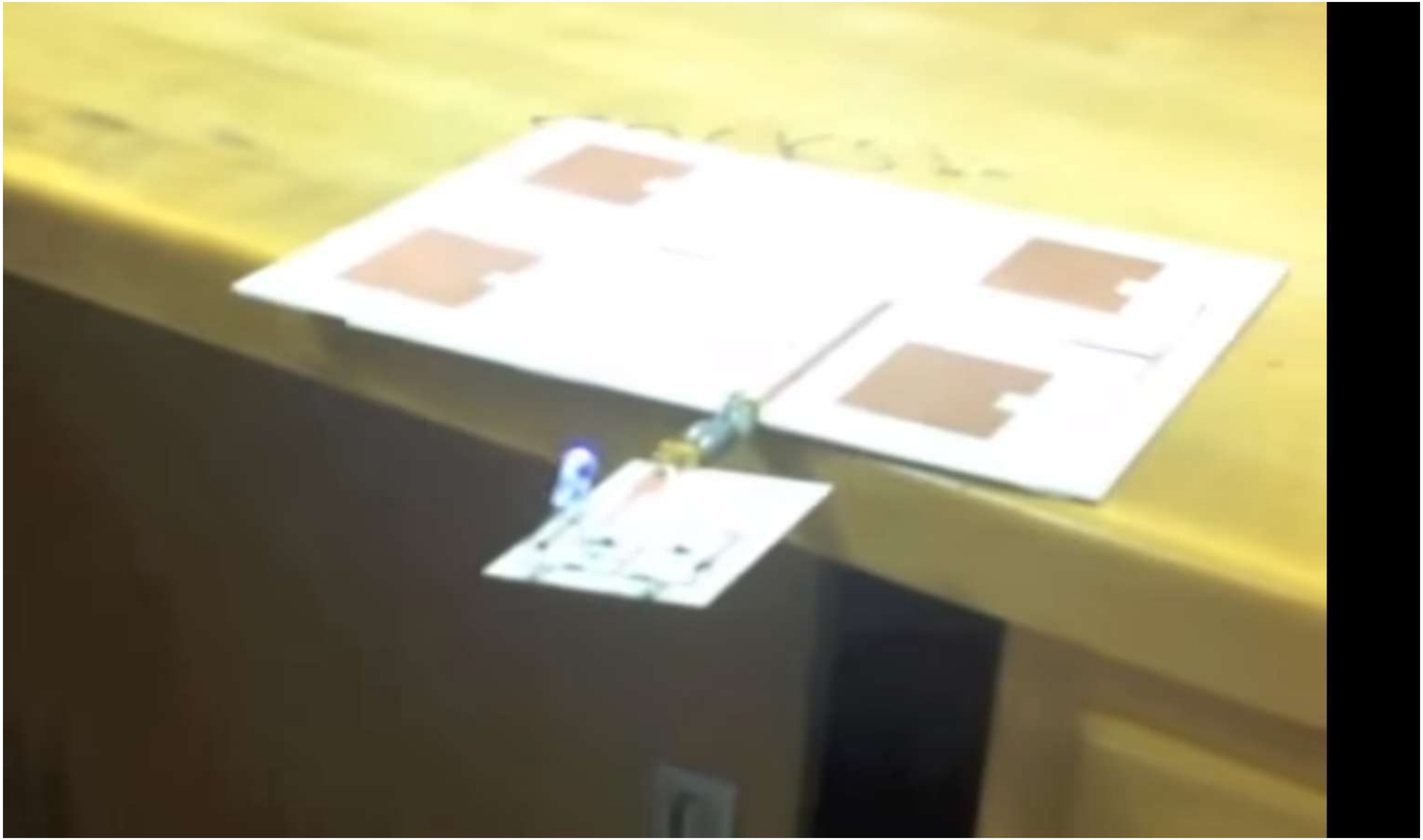
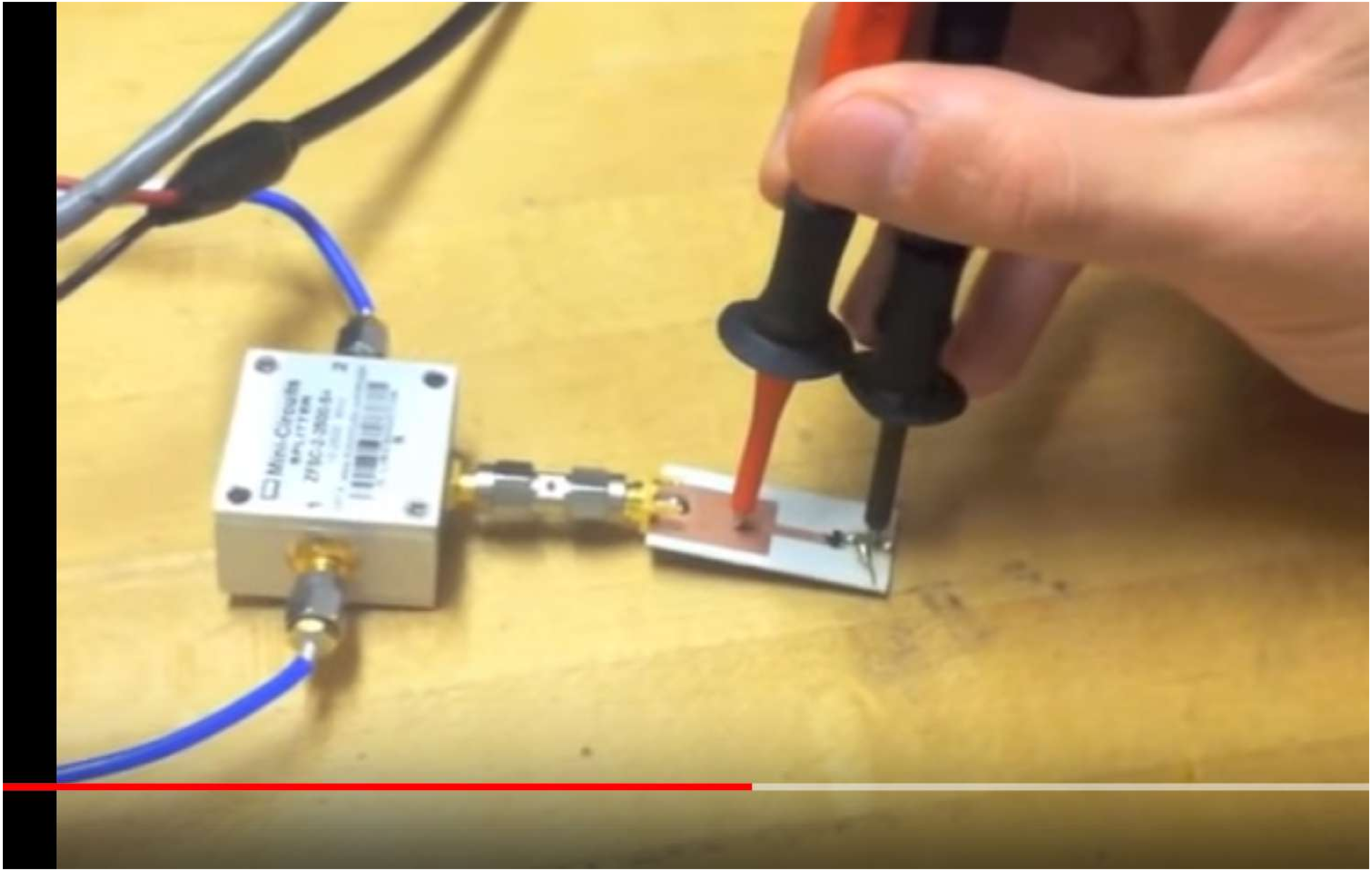
de quadro
detector
trasdutor
acústico
capacitor
variável

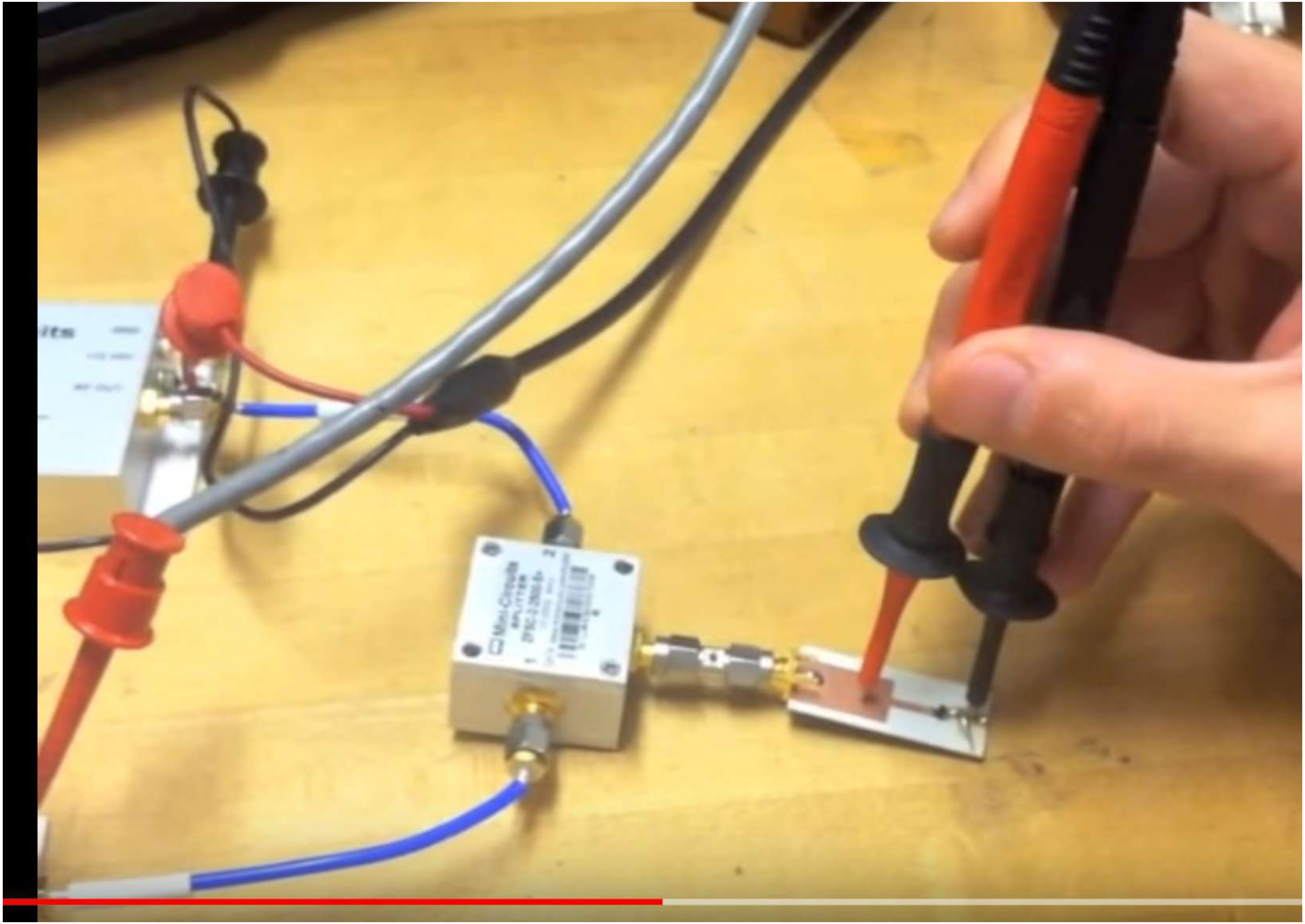

Detector
Phone

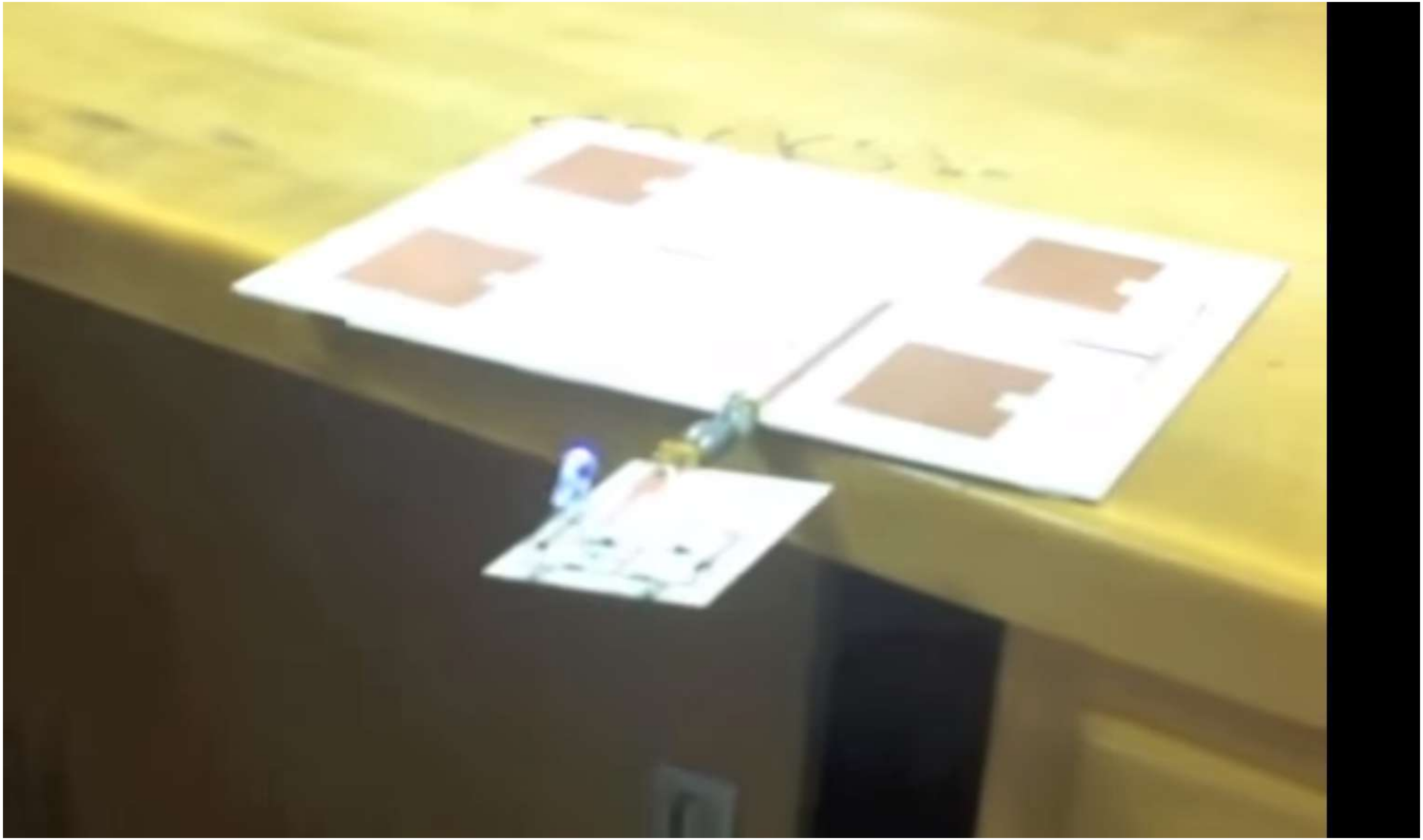

Detector
Phone

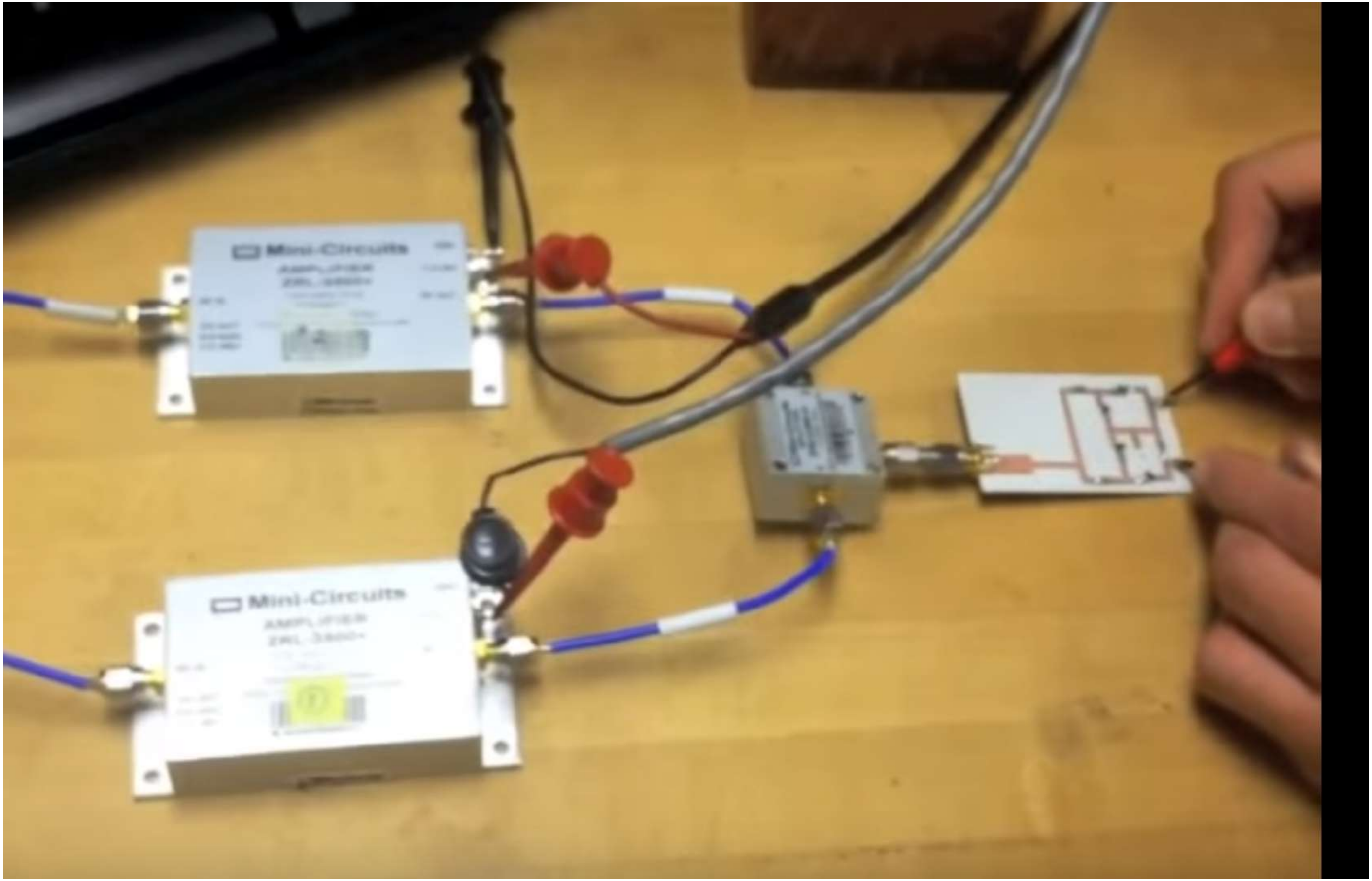


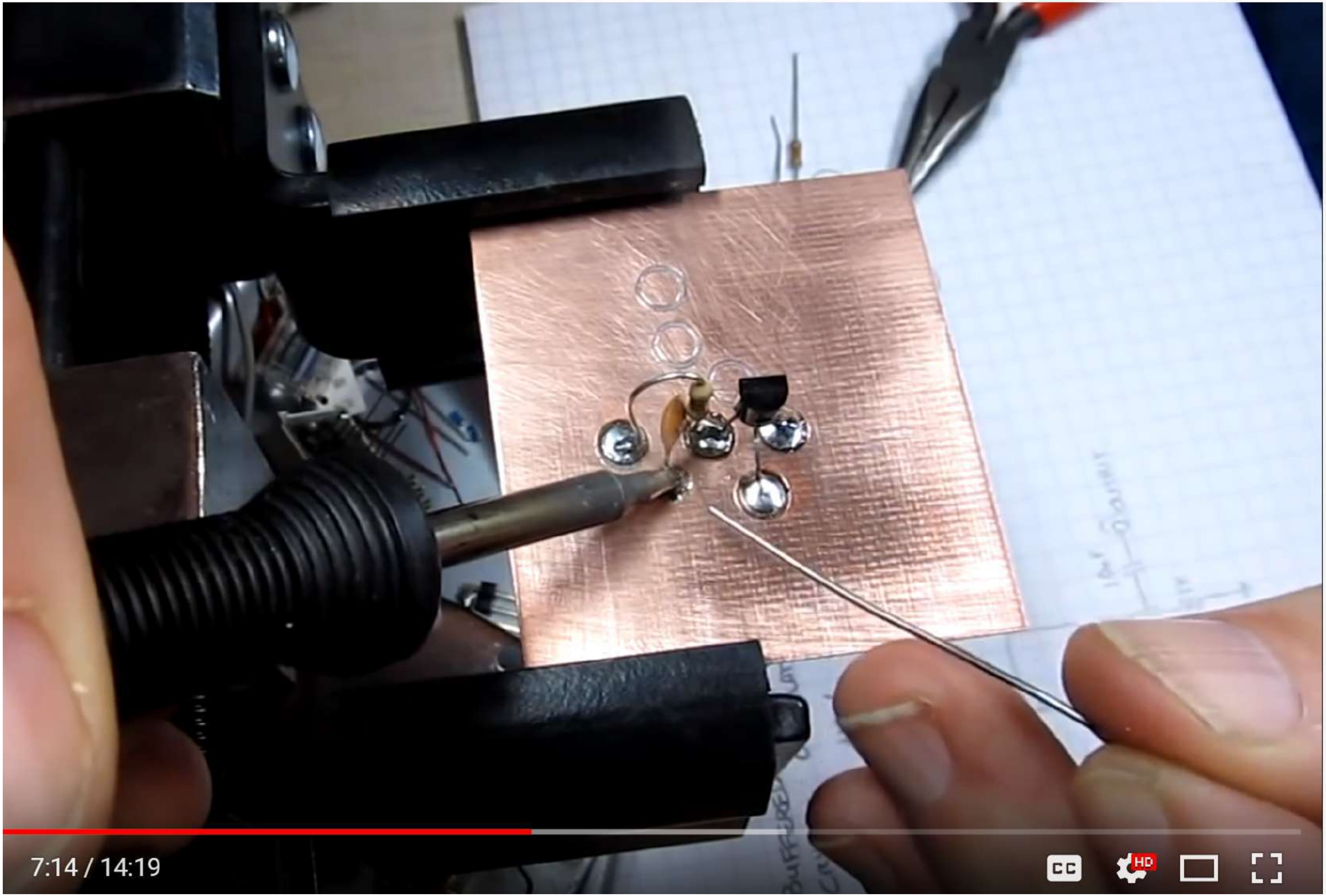


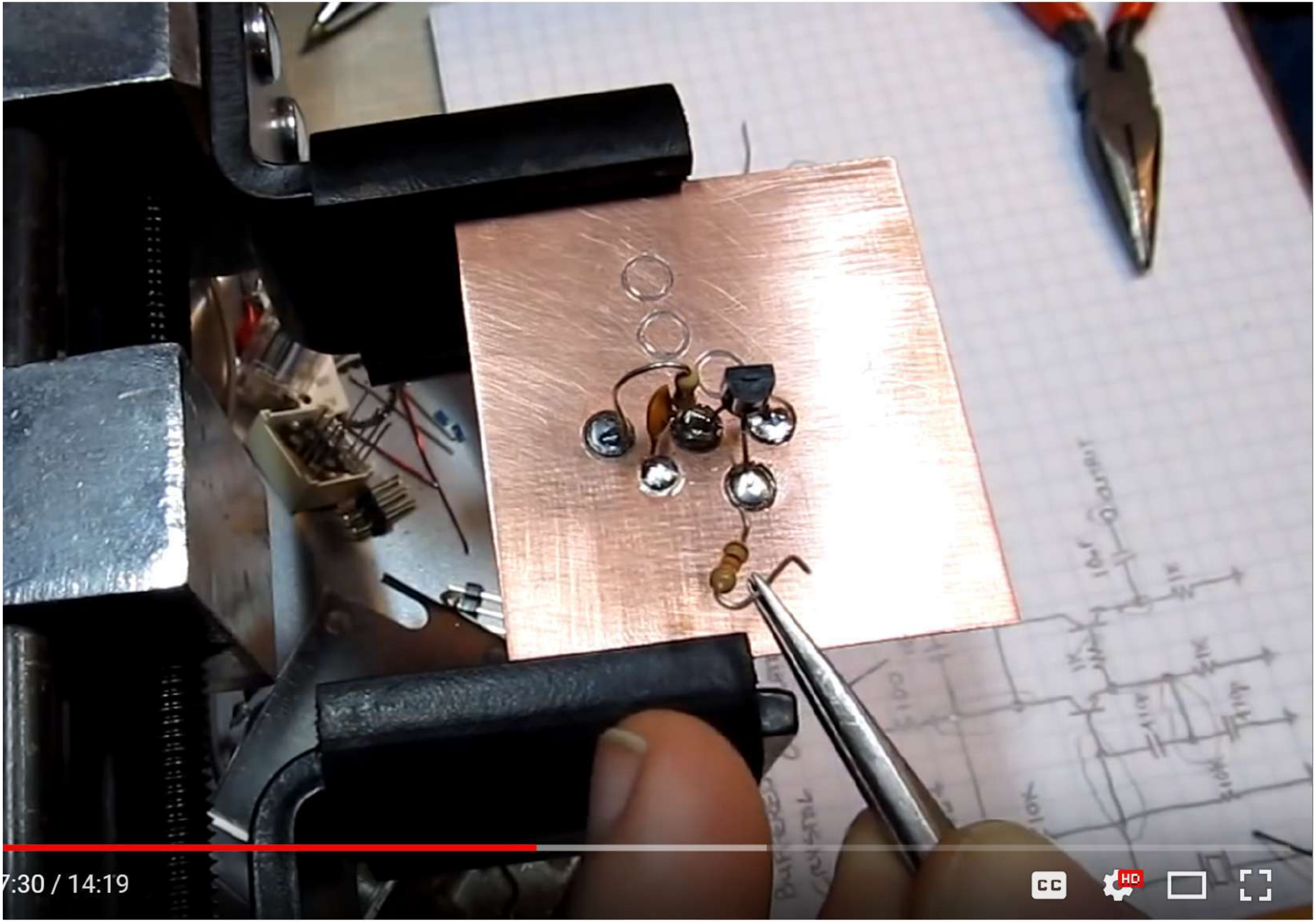

Mini-Circuits

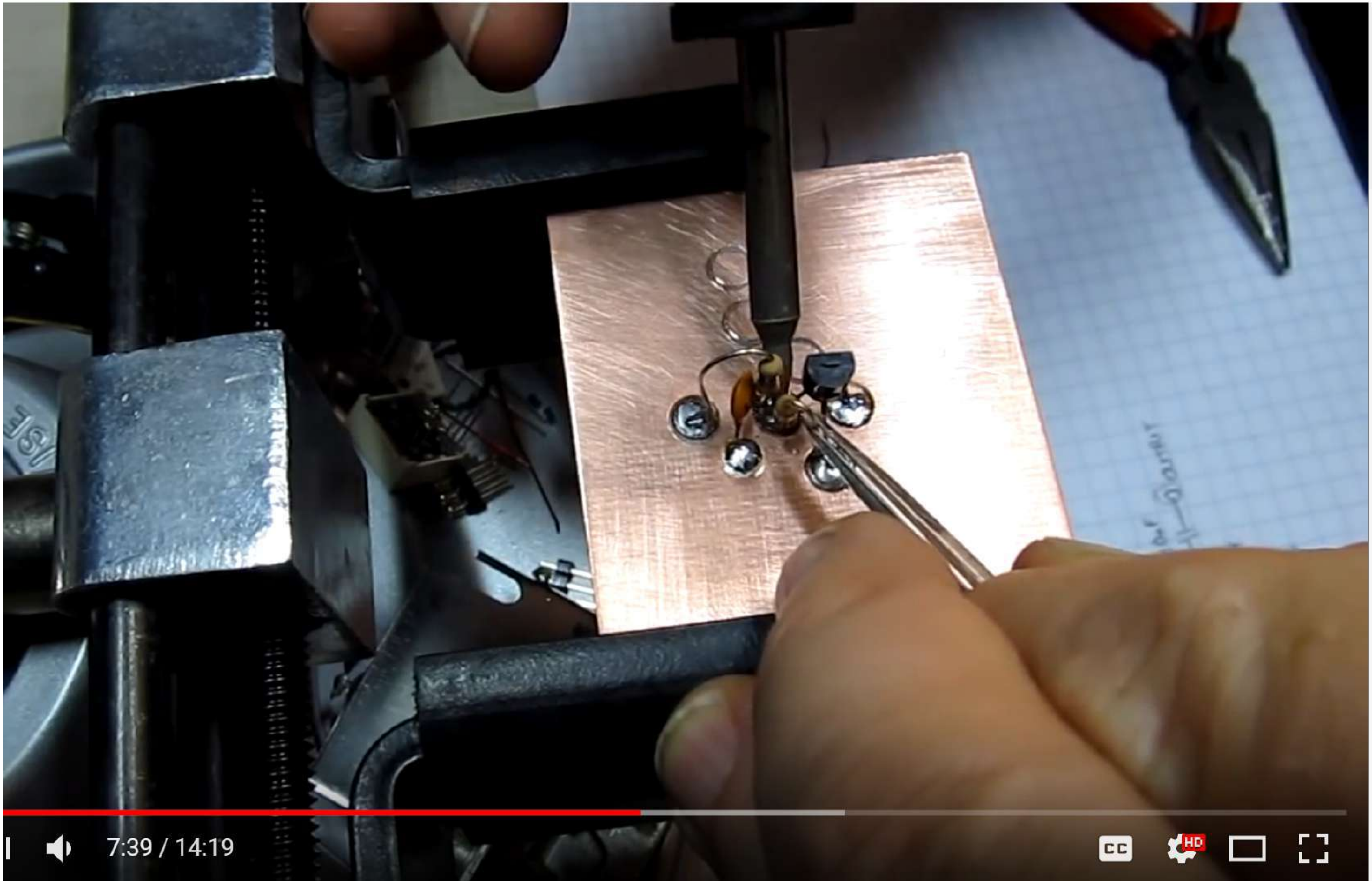


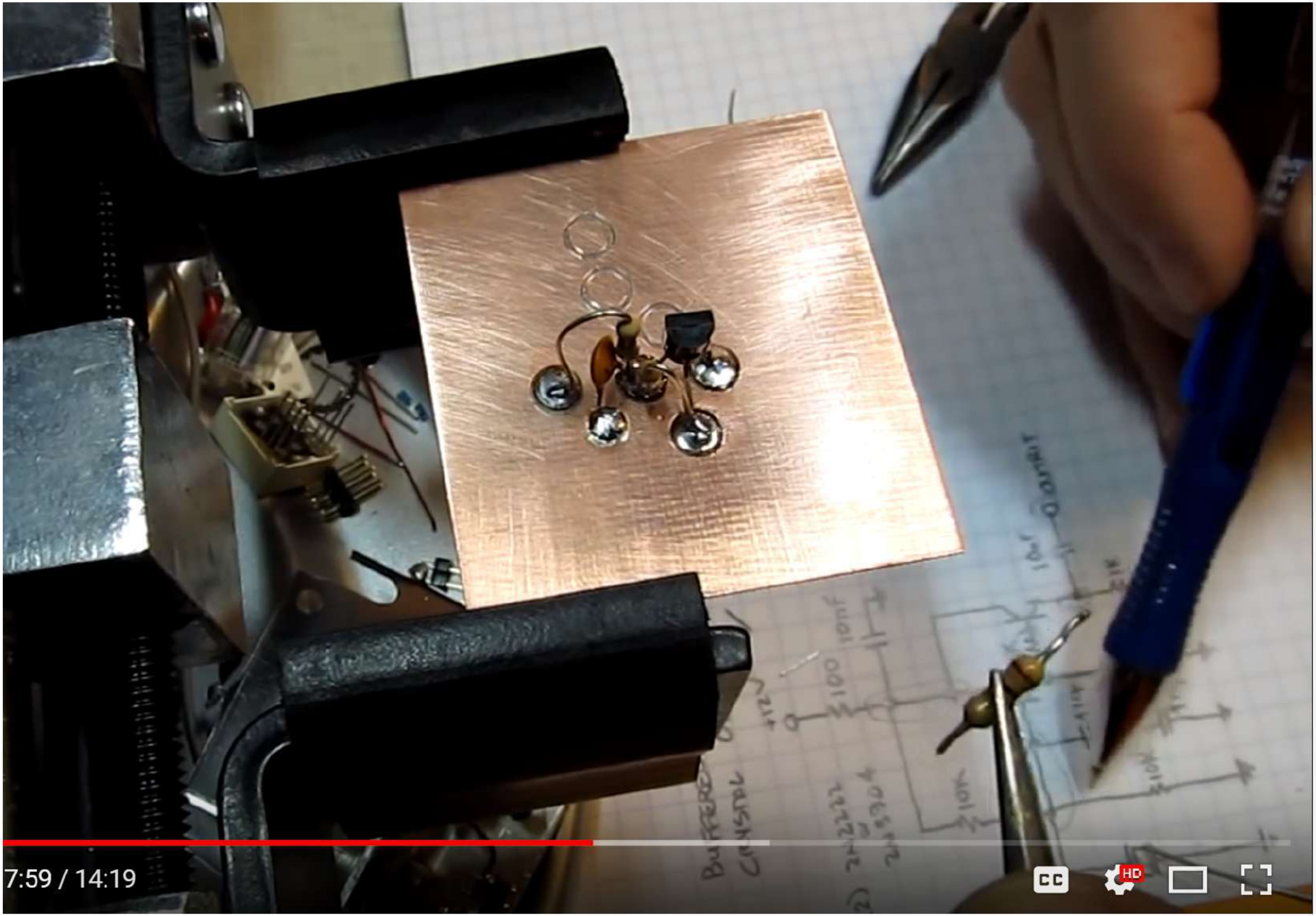


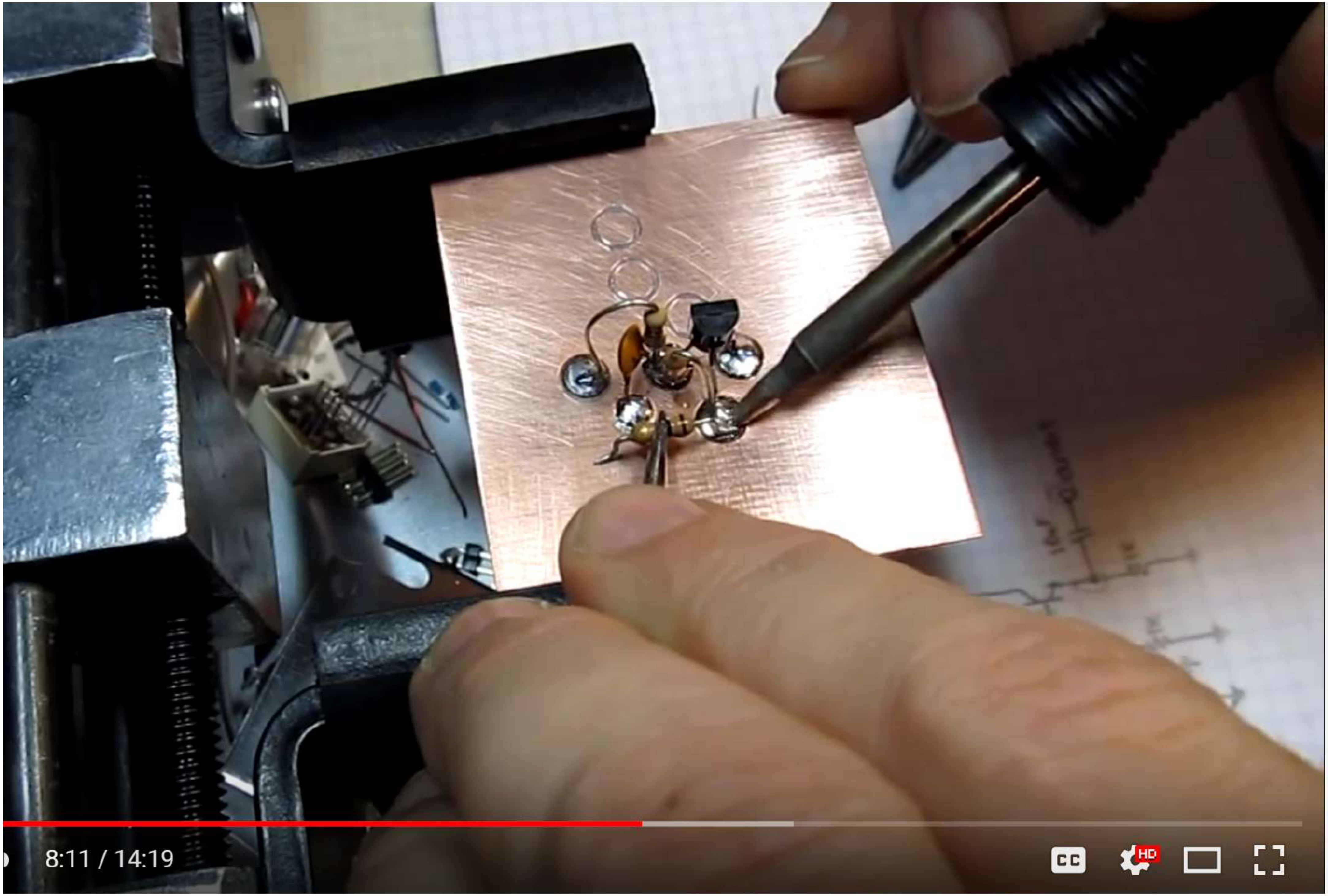

Mini-Circuits
Mini-Circuits


7:14 / 14:19
CC
HD

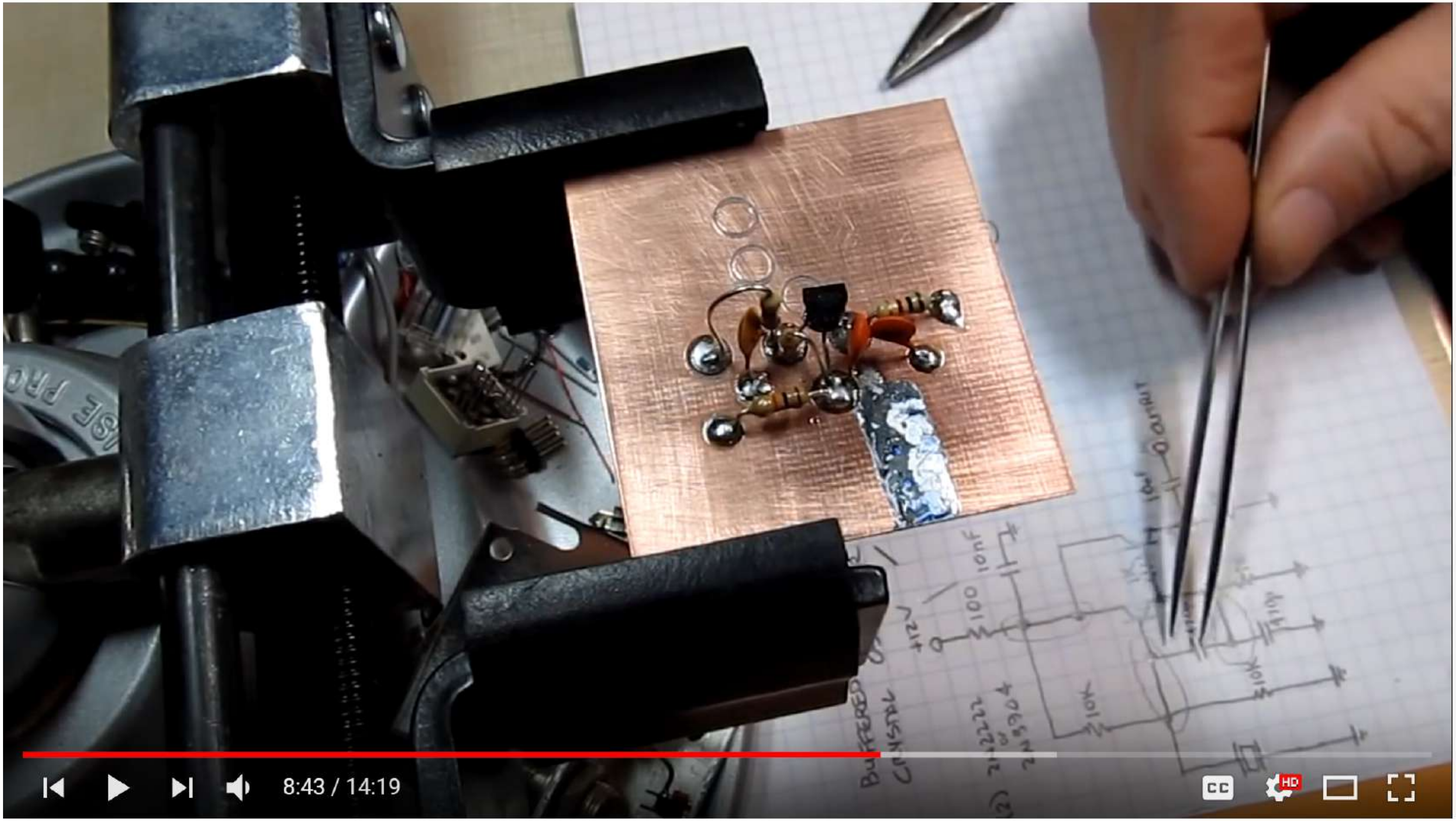

:30 / 14:19
CC
HD


7:39 / 14:19
CC
HD

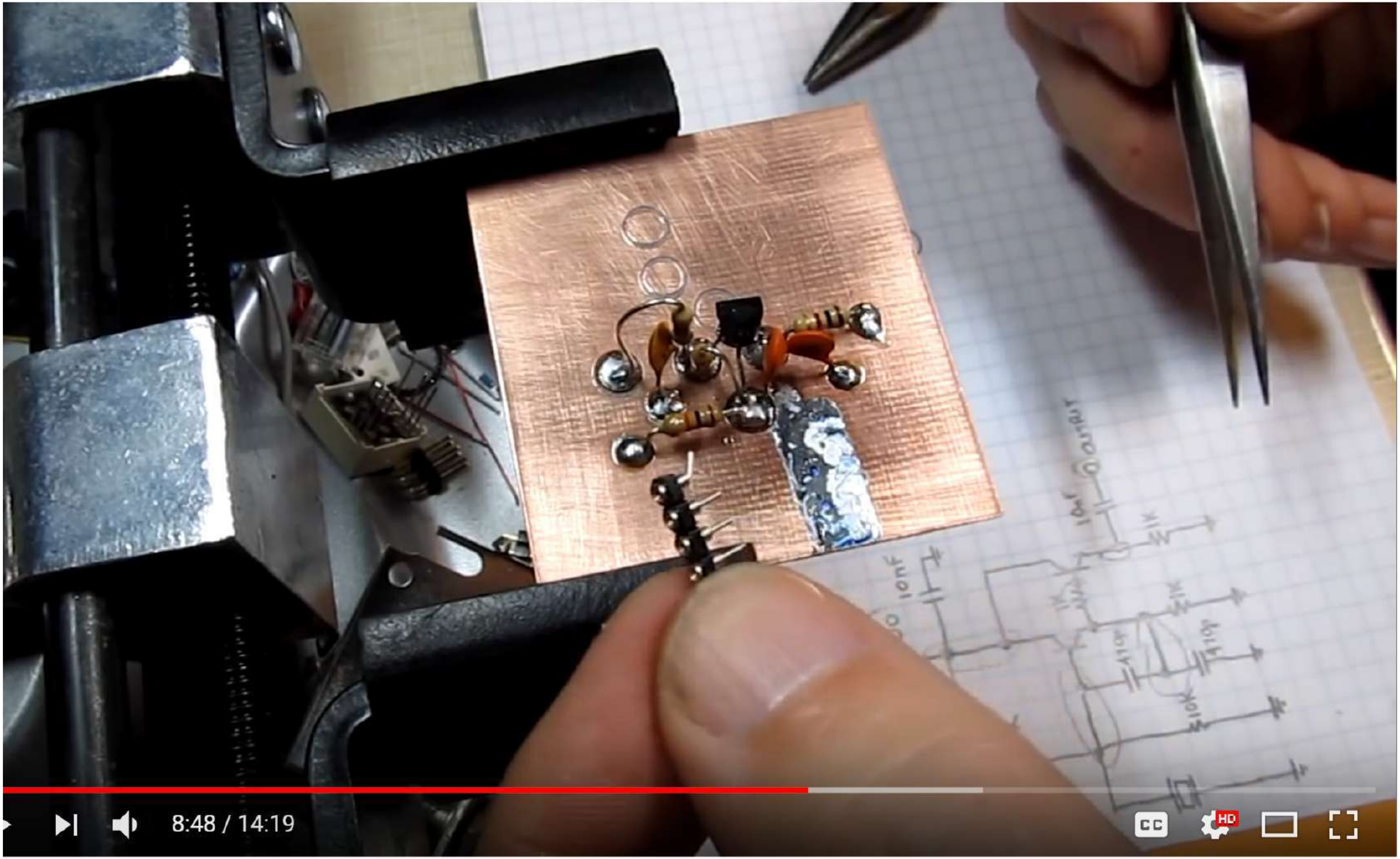

7:59 / 14:19

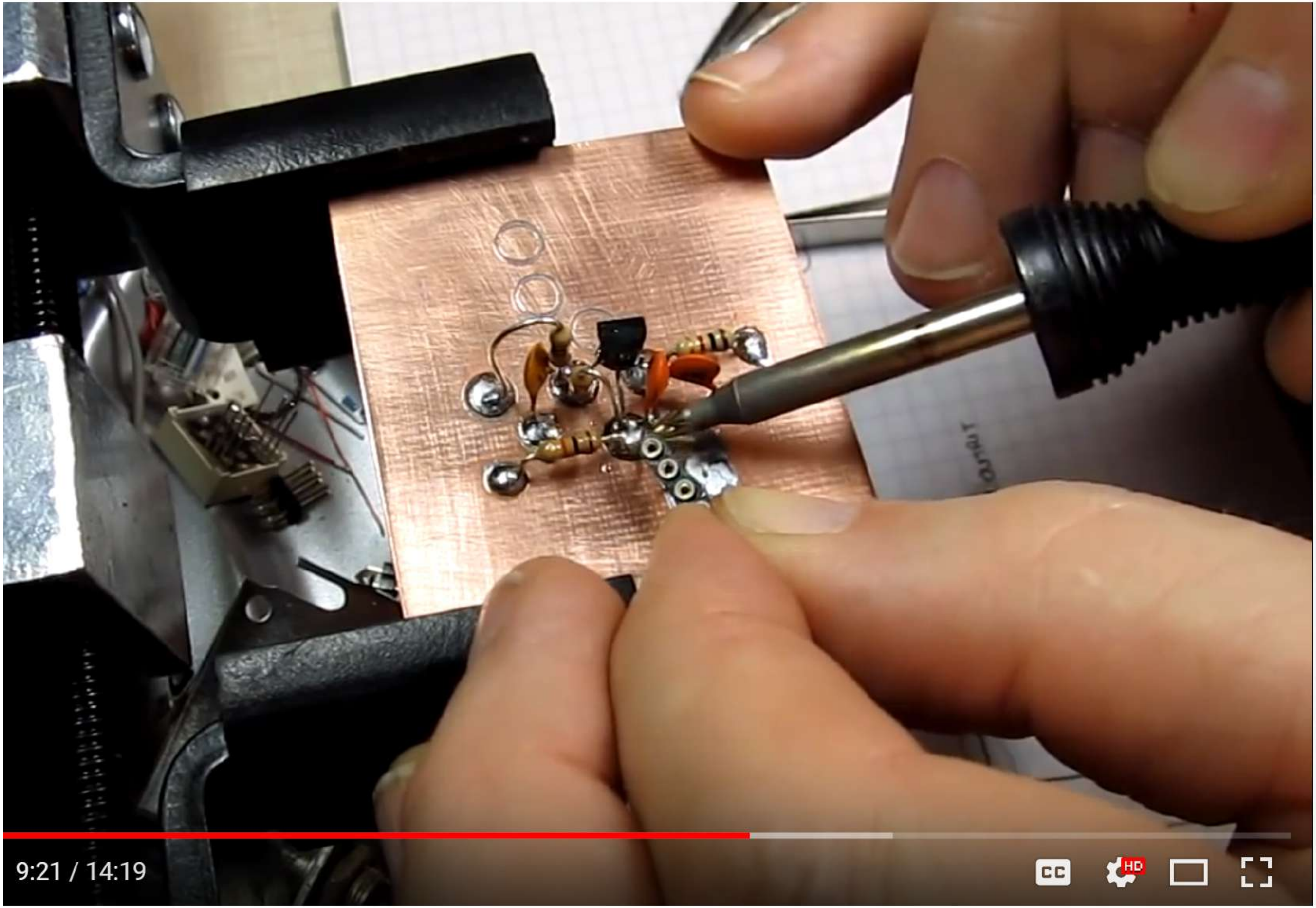

8:11 / 14:19
CC
HD

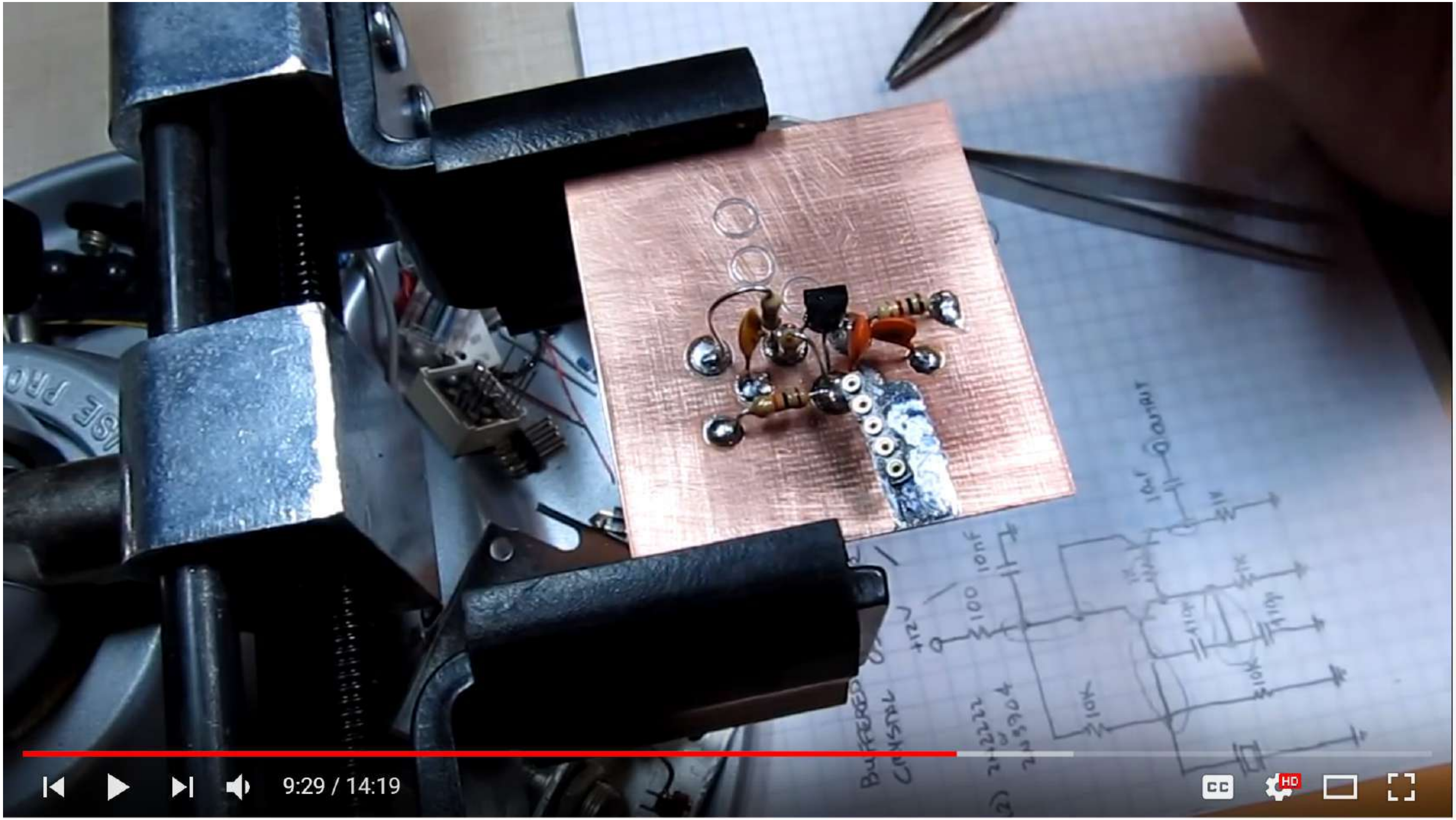

:19
CC
HD

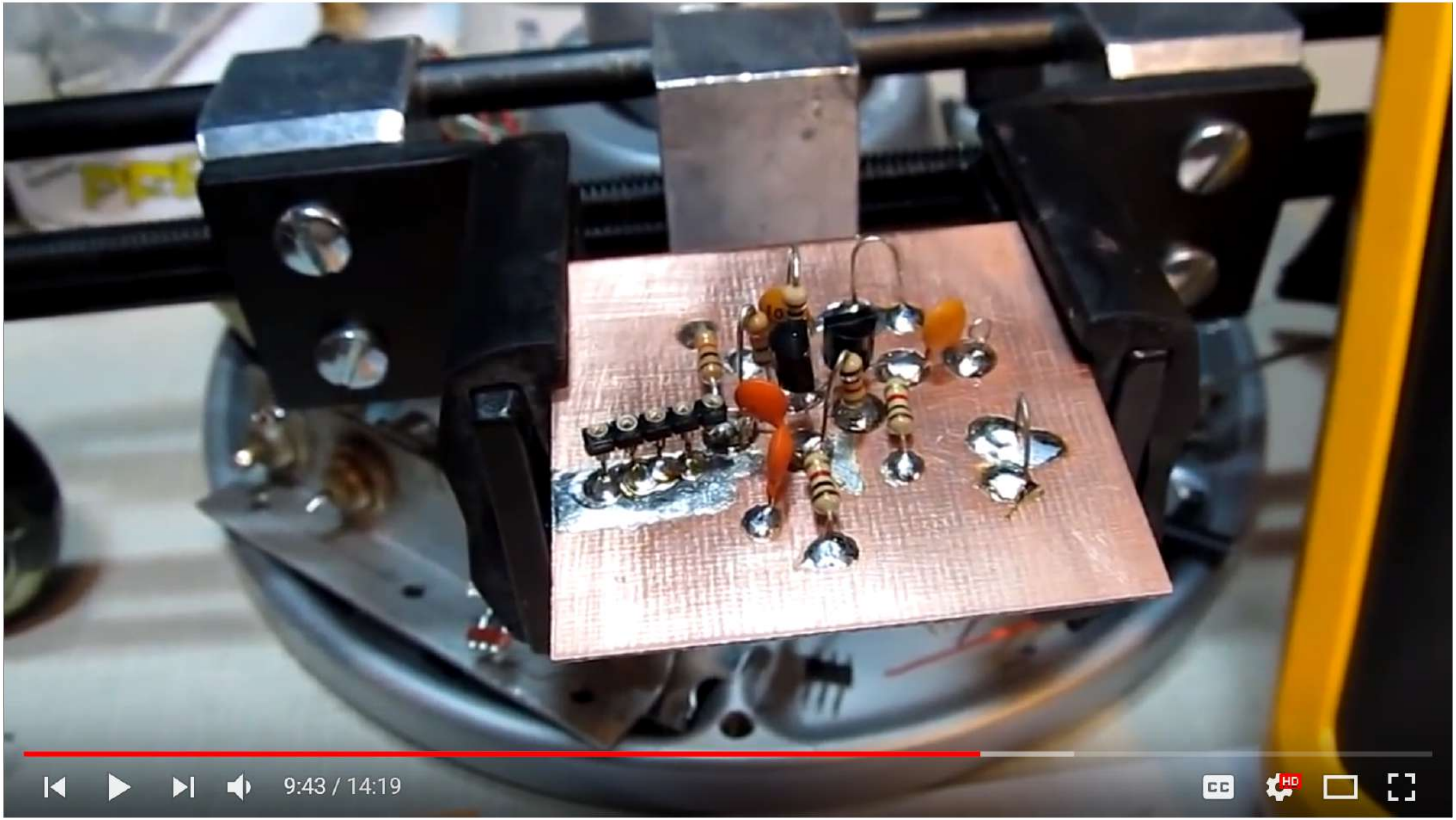


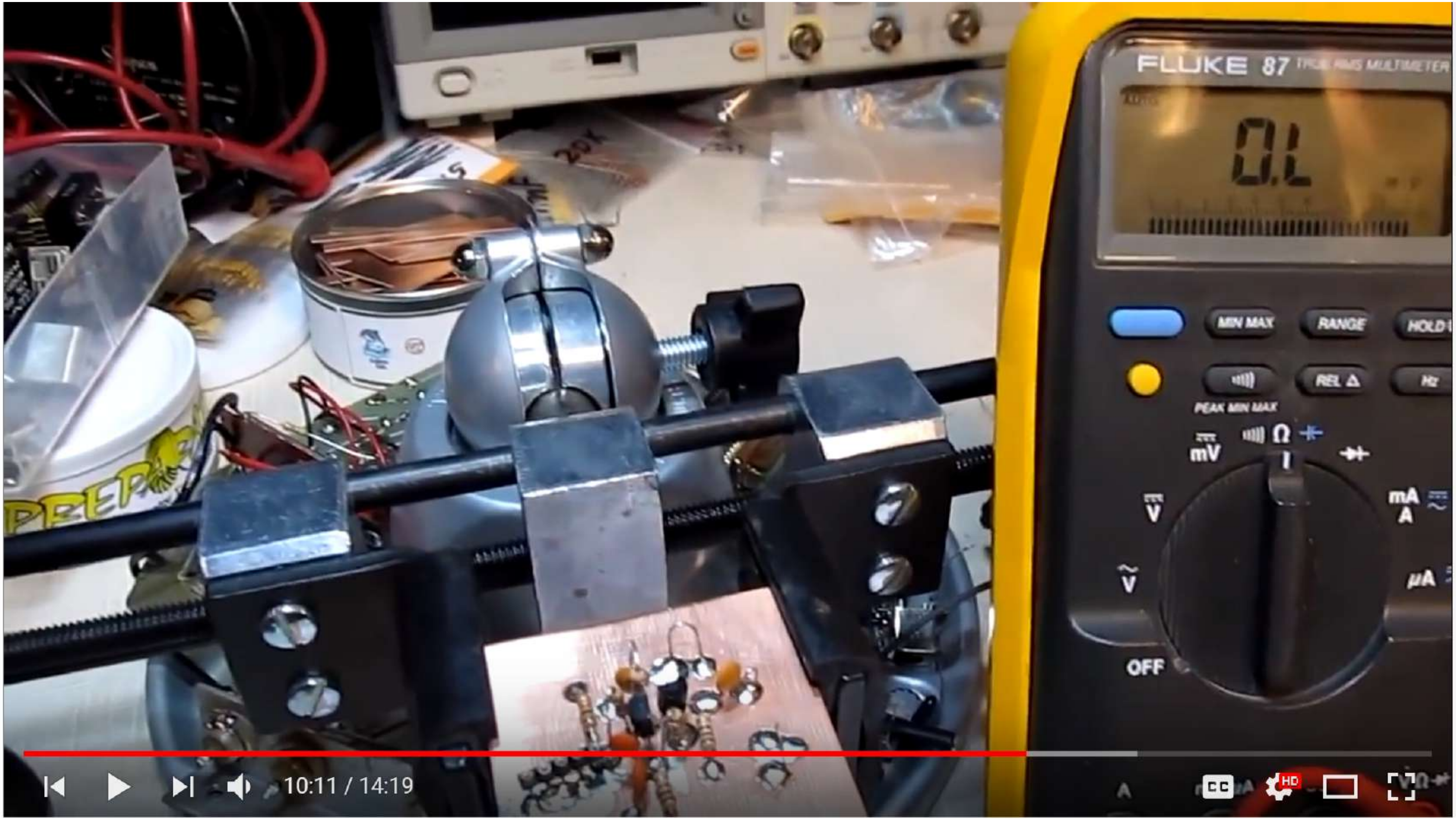
#123: Build a crystal oscillator from schematic thru prototype construction and testing - DIY

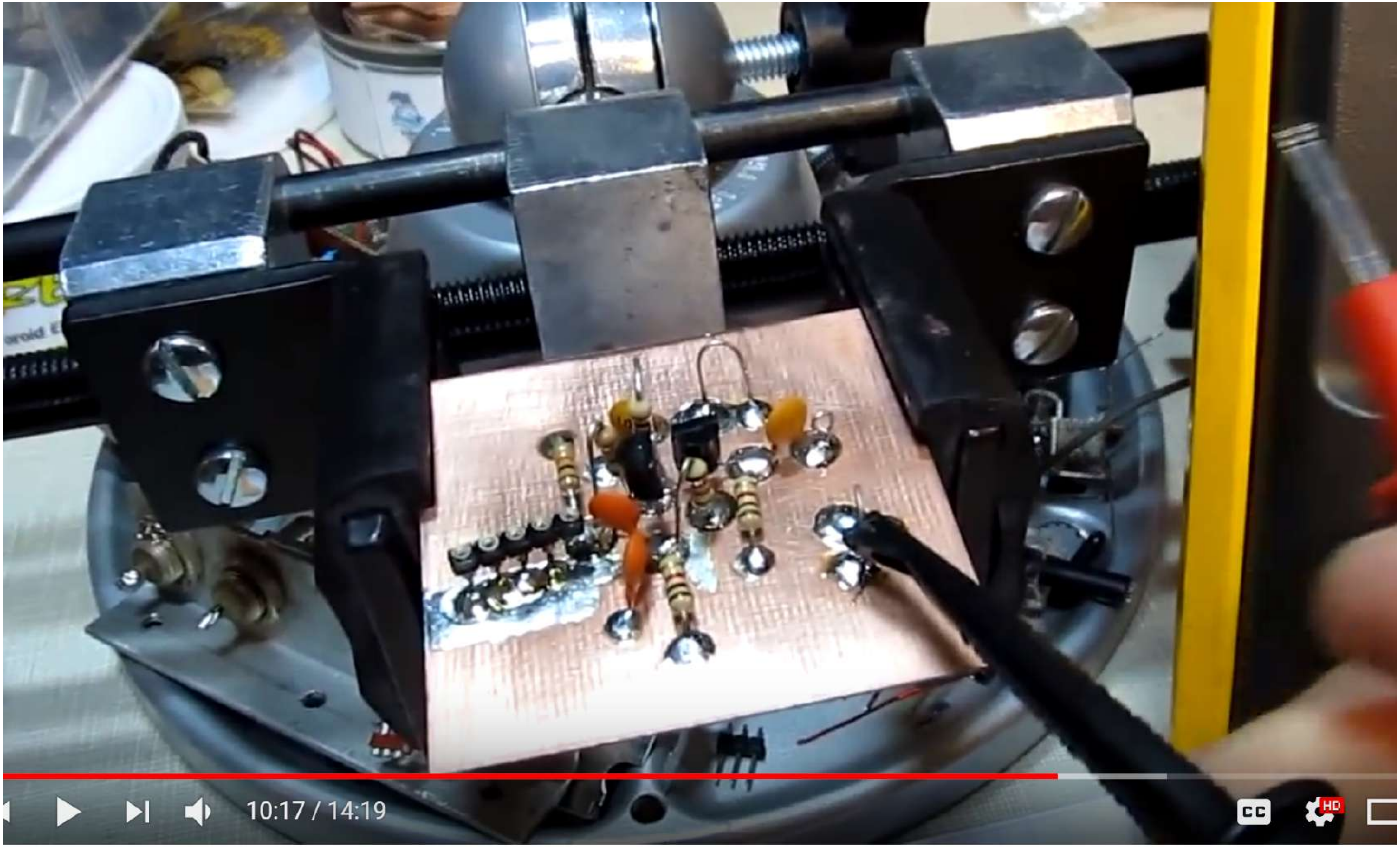

8:48 / 14:19
HD
10nF

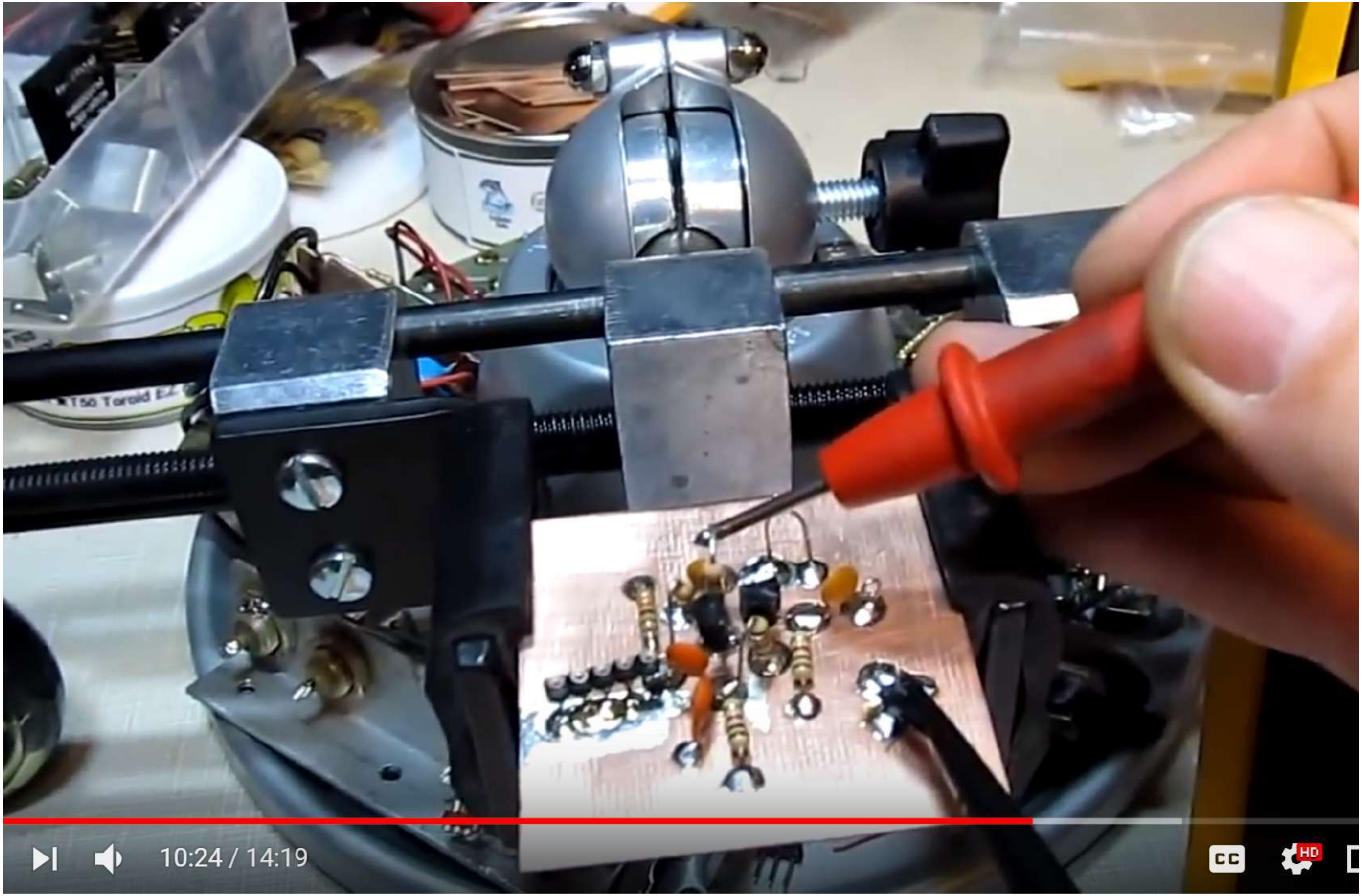

9:21 / 14:19
CC
HD

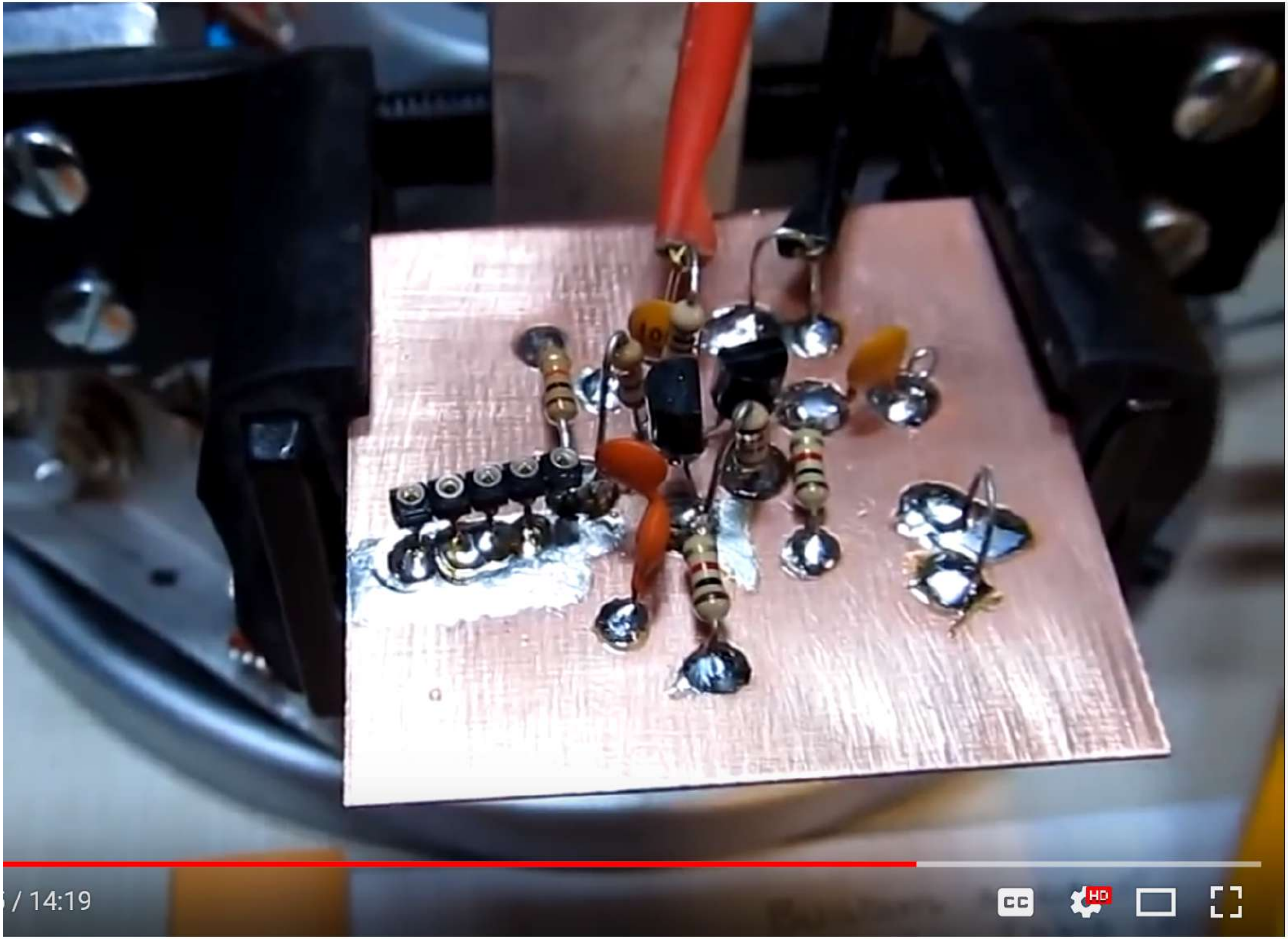

9:29 / 14:19
CC
HD

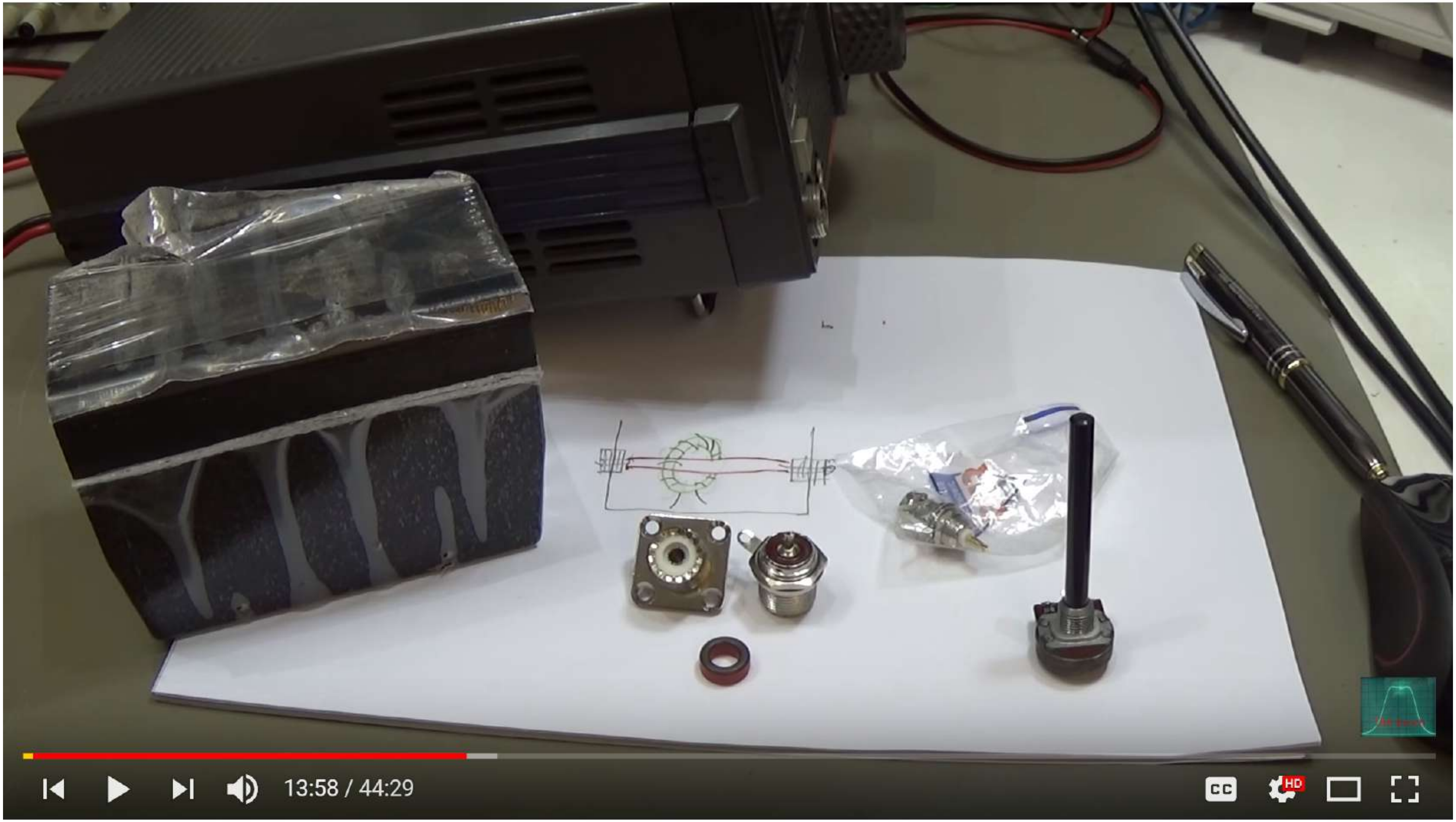

9:43 / 14:19


FLUKE 87
0.L
MIN MAX
RANGE
REL Δ
PEAK MIN MAX
mV
mA
A
μA
OFF
10:11 / 14:19

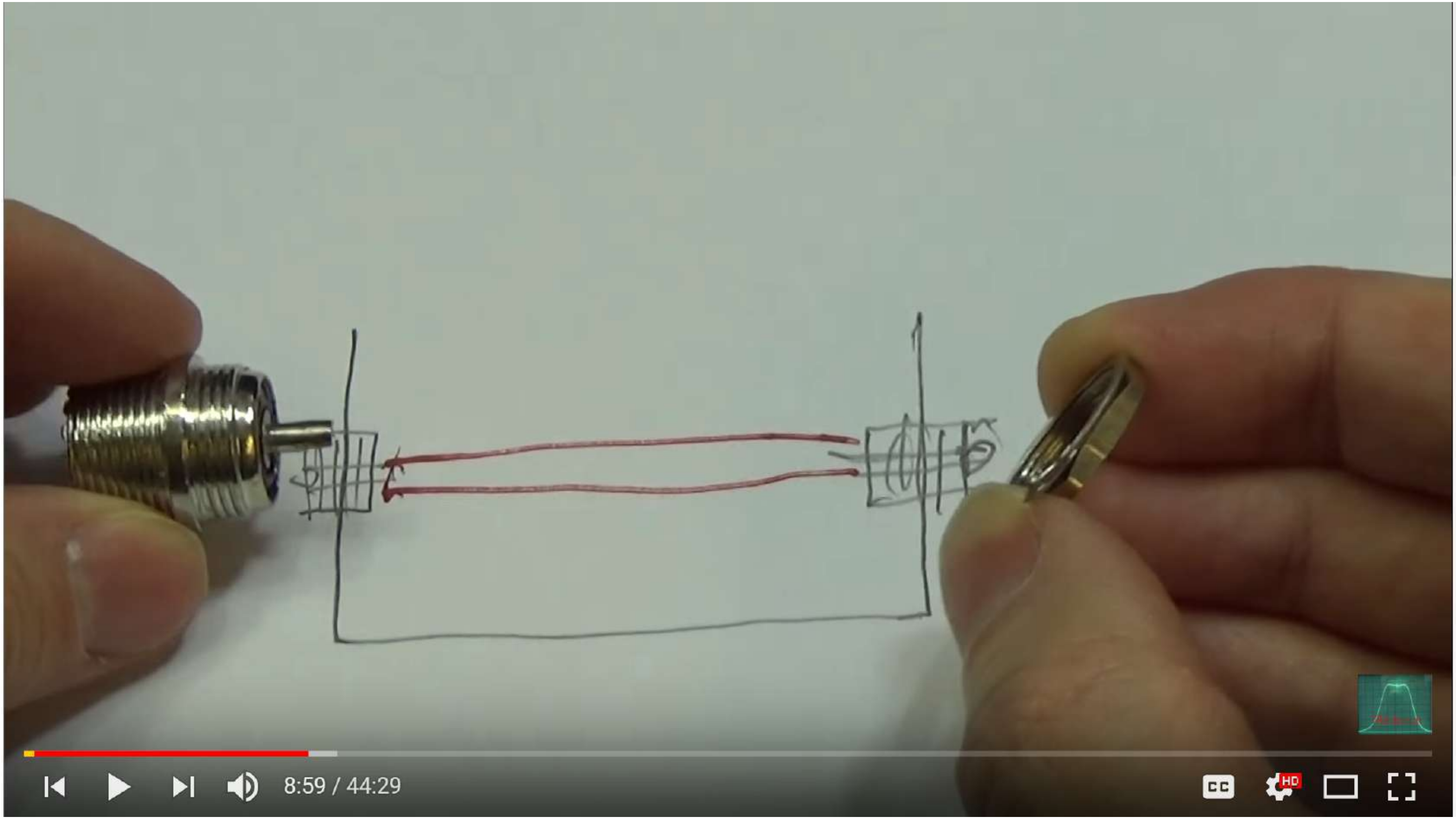

10:17 / 14:19
CC
HD

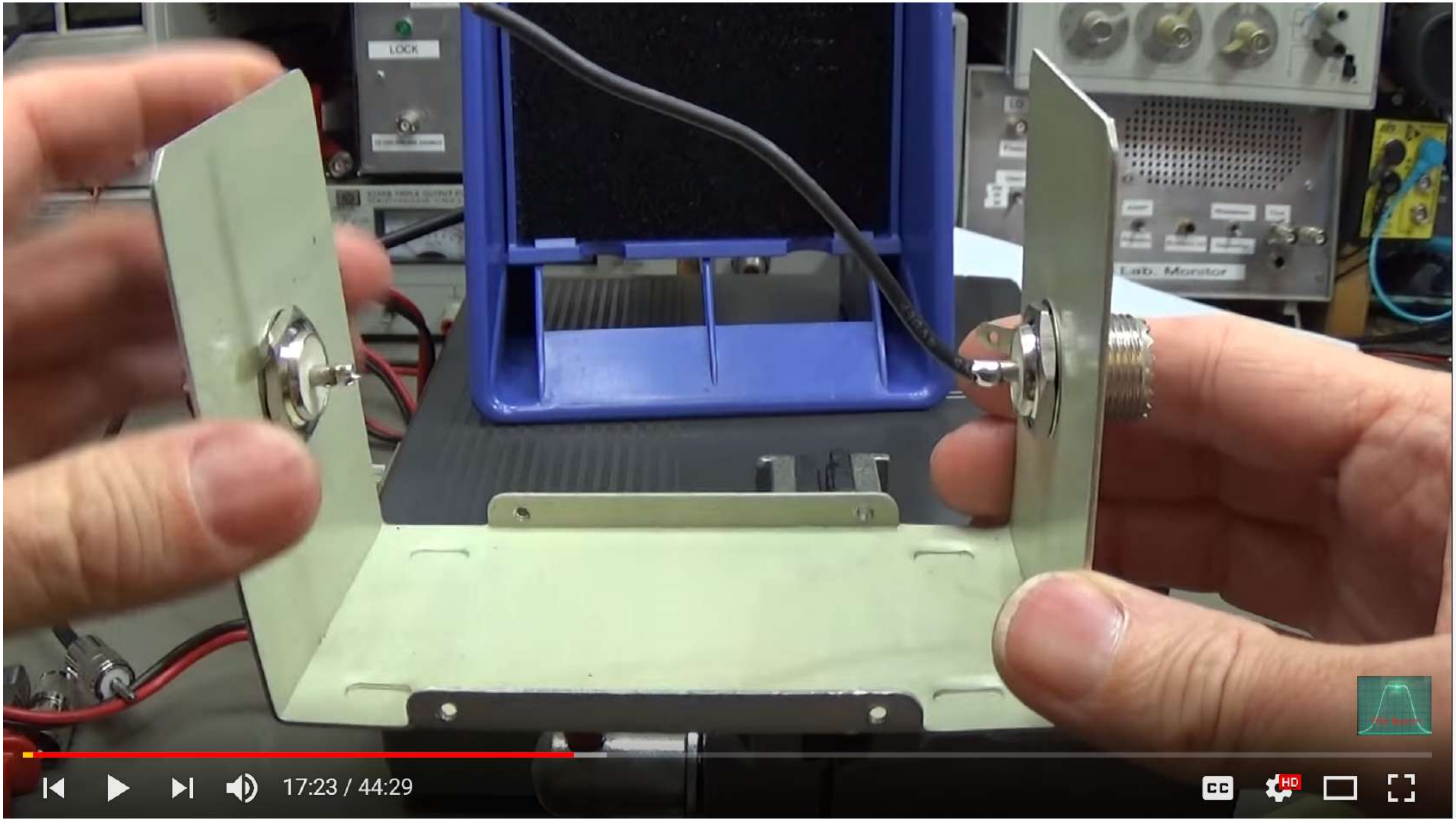

T50 Toroid
10:24 / 14:19
CC
HD


/ 14:19
CC
HD



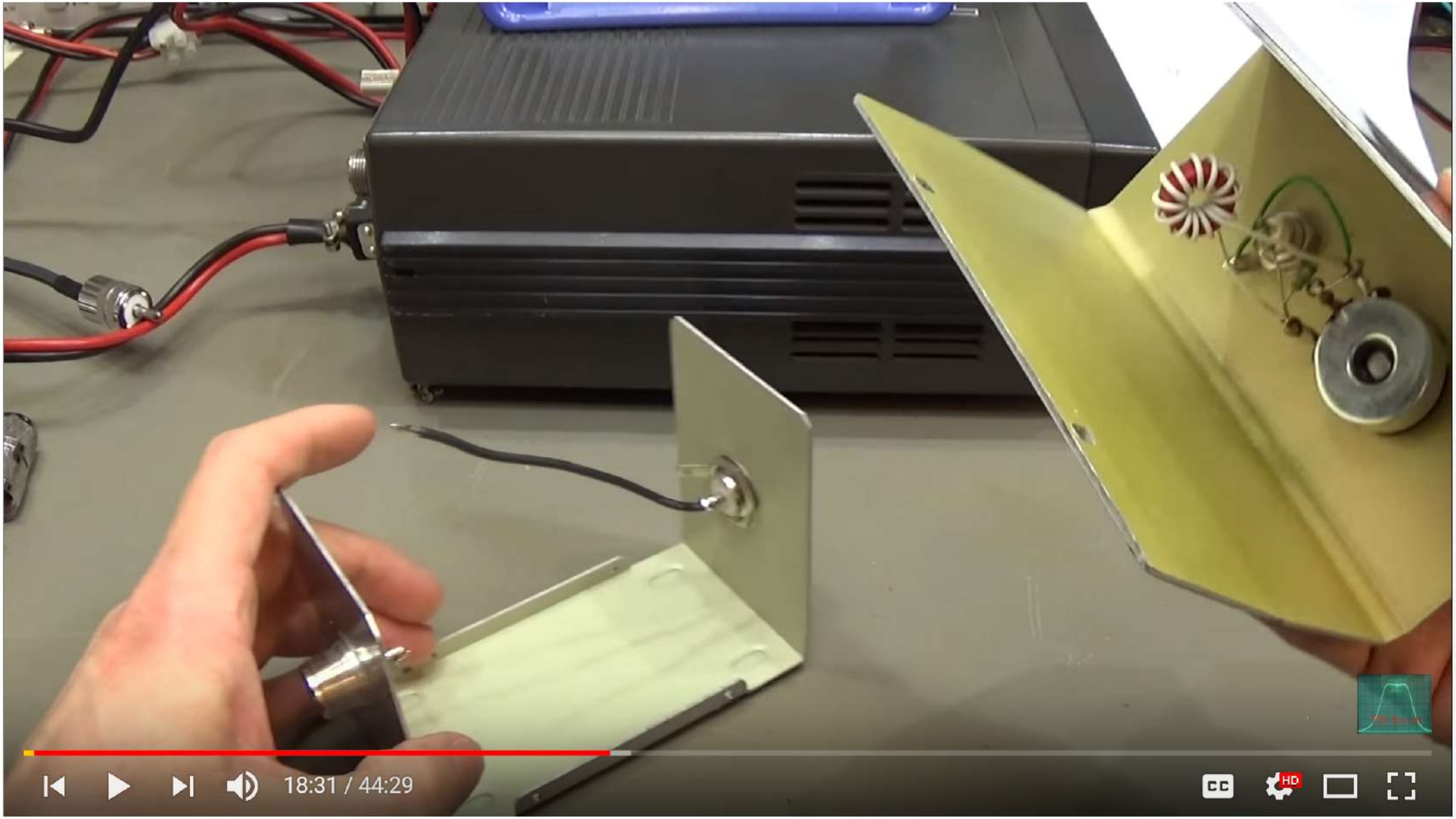
#74 Quick Tip: Build a Variable RF Tap for your shack or lab


8:59 / 44:29

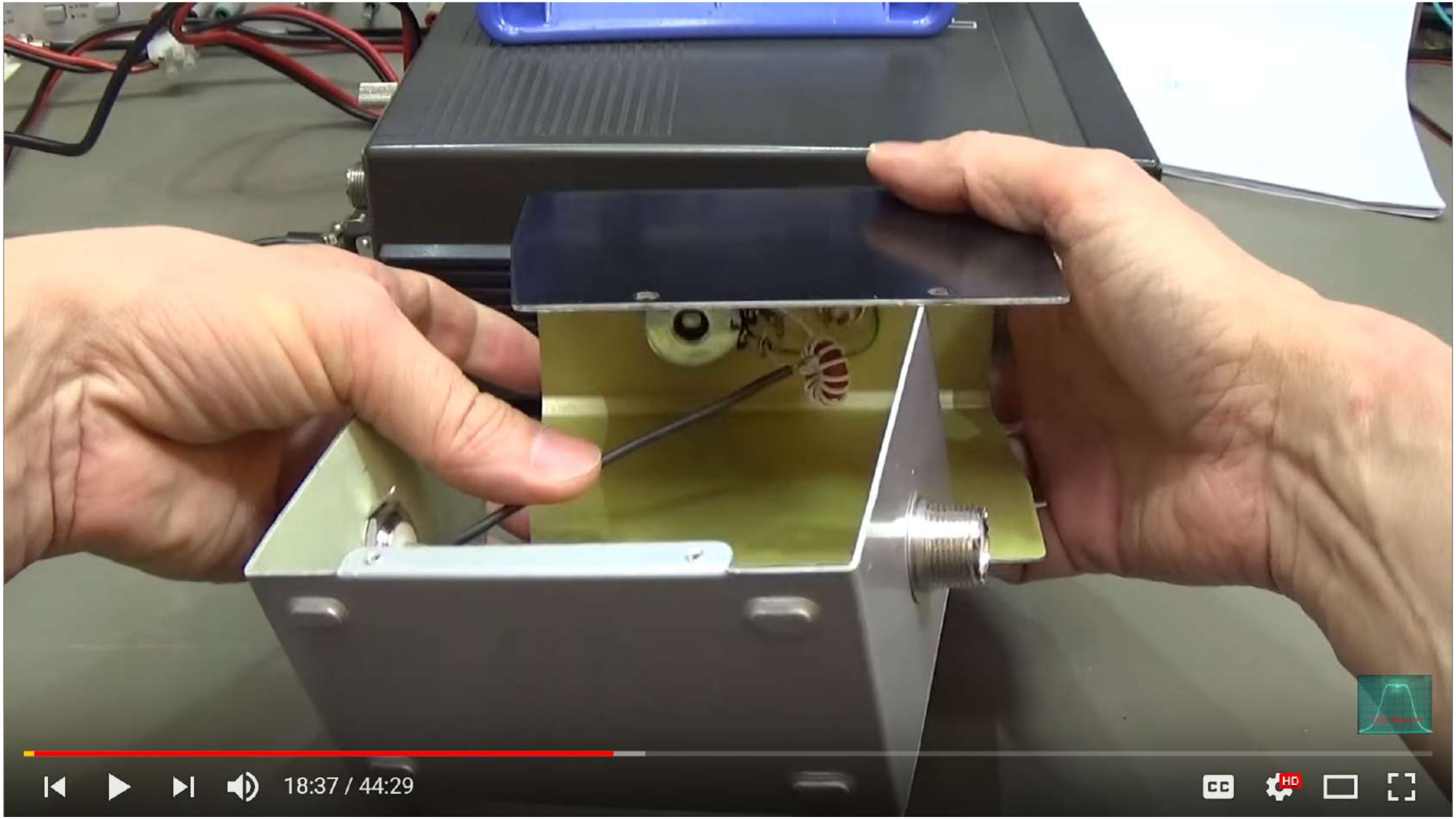

LOCK
Lab. Monster
17:23 / 44:29
HD


2
3
4
5


17:57 / 44:29



#74 Quick Tip: Build a Variable RF Tap for your shack or lab


18:37 / 44:29

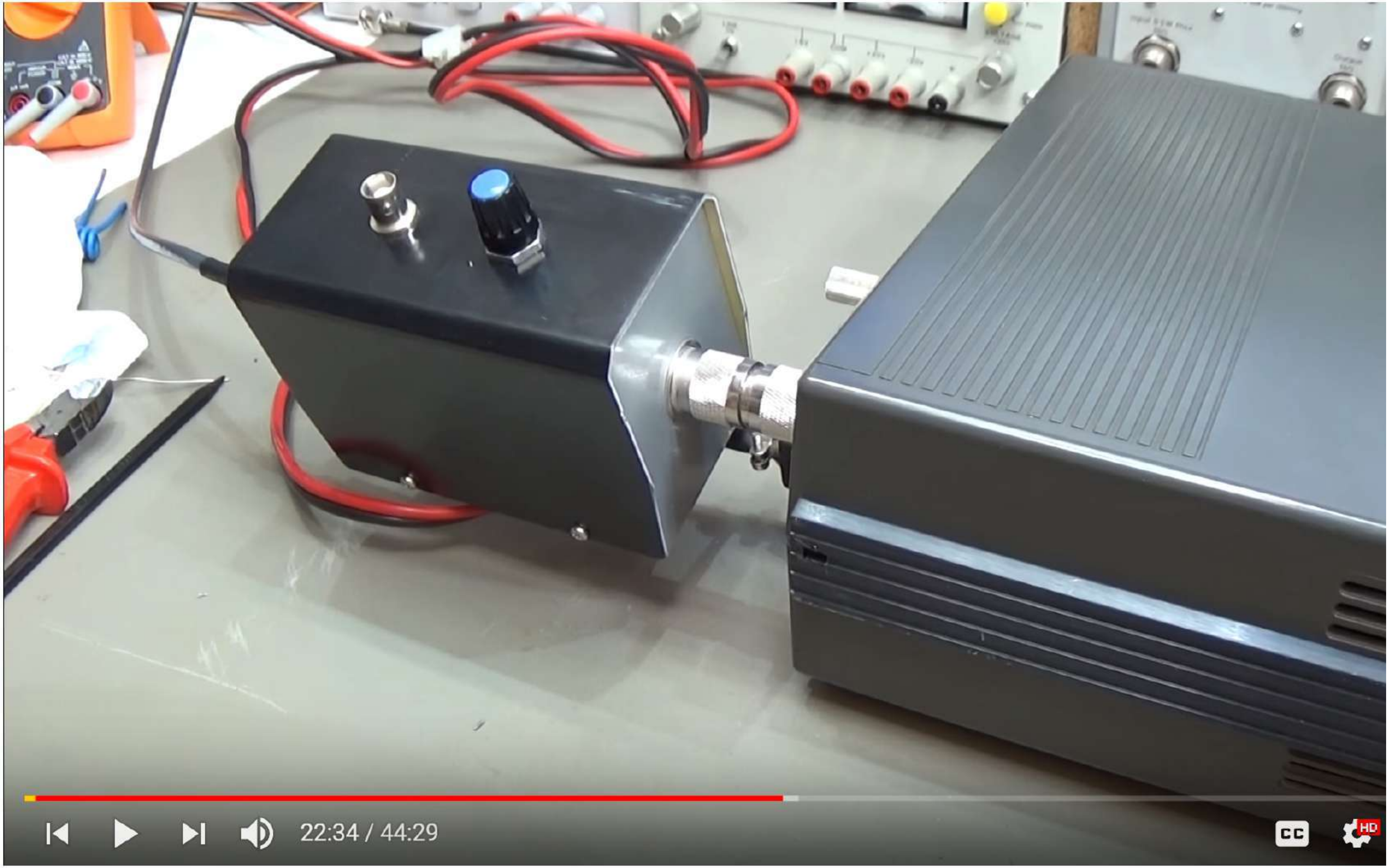

18:42 / 44:29
HD

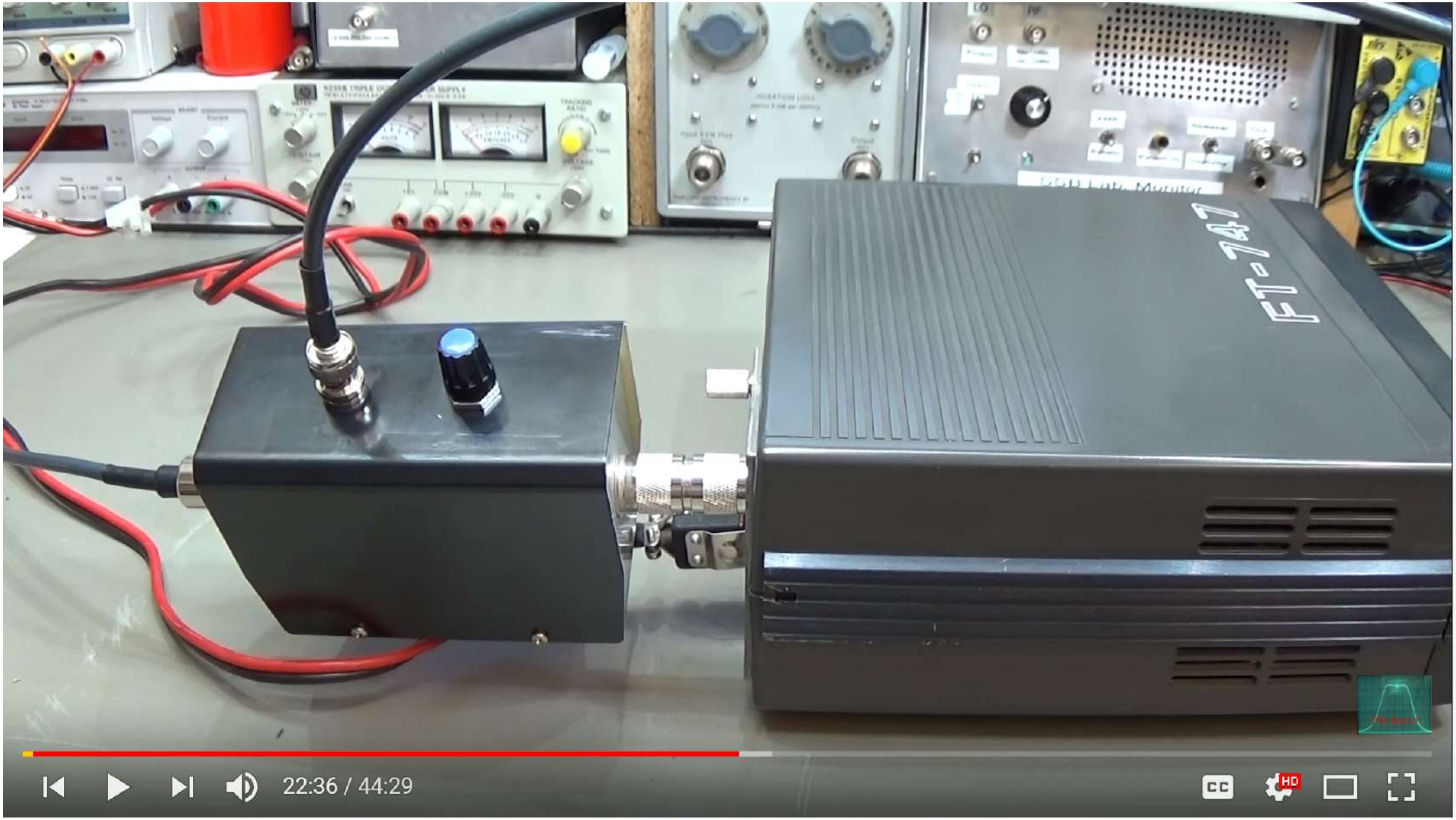

18:47 / 44:29
CC
HD

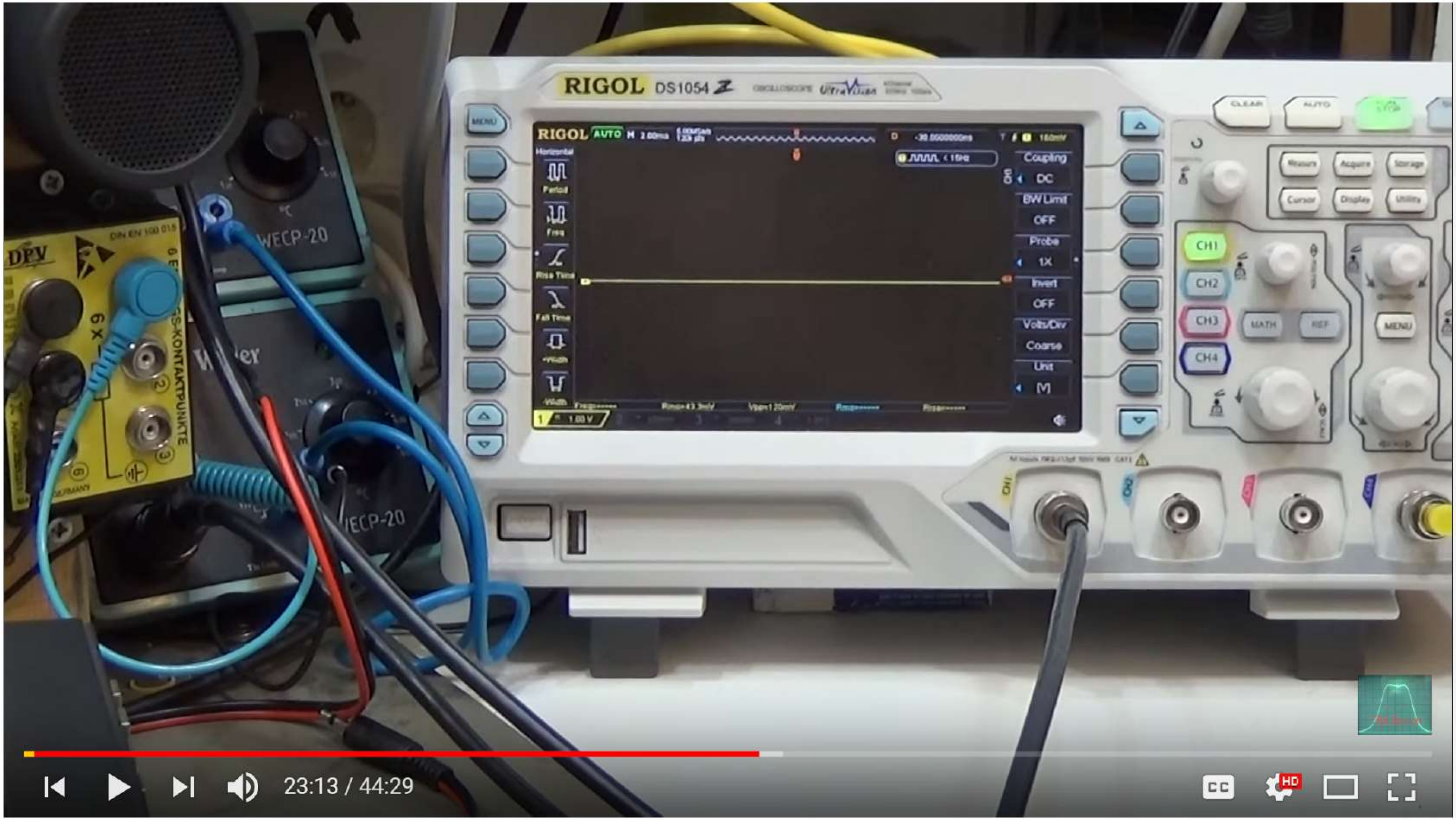

19:27 / 44:29


21:27 / 44:29

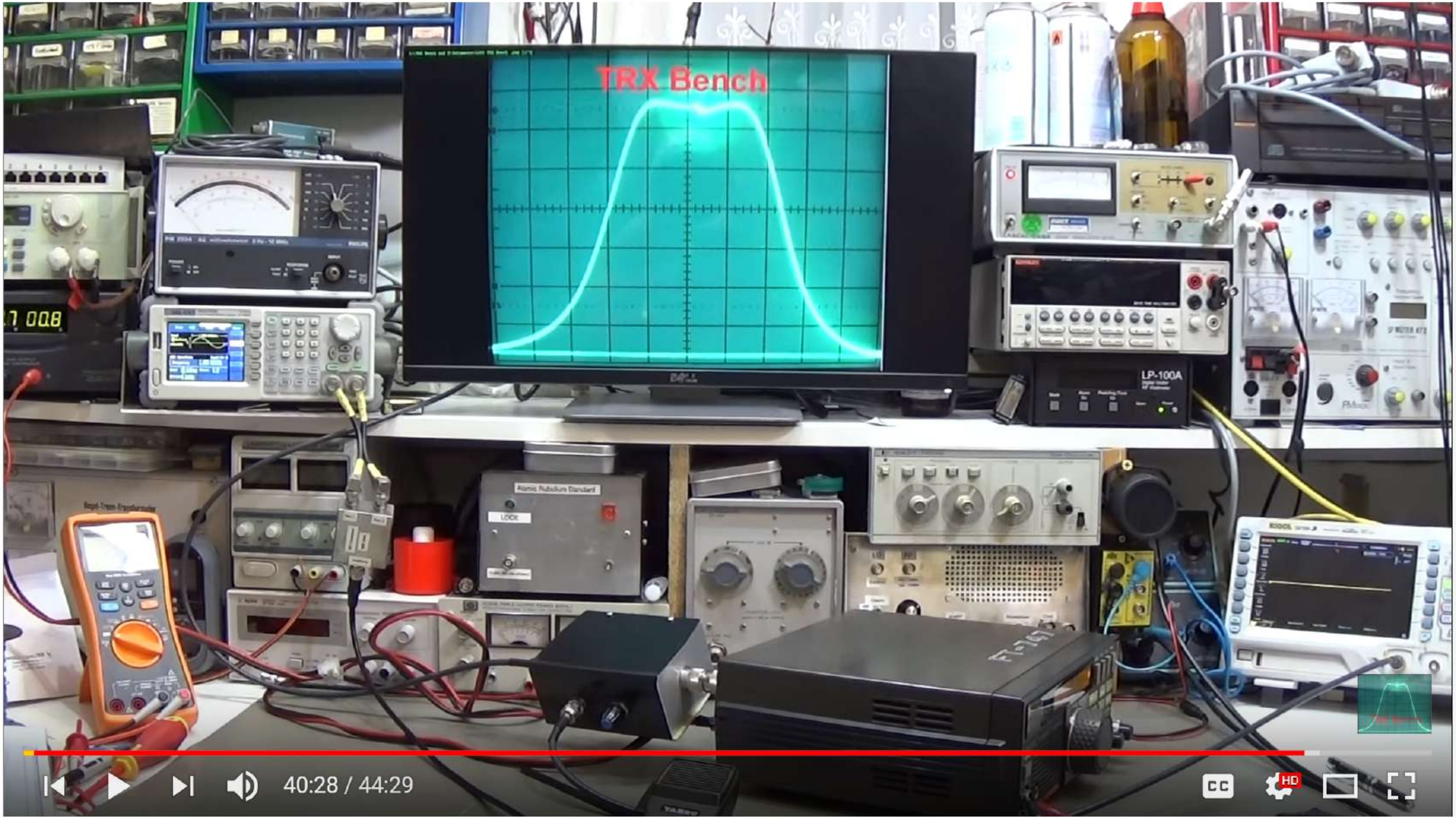

21:35 / 44:29


22:34 / 44:29

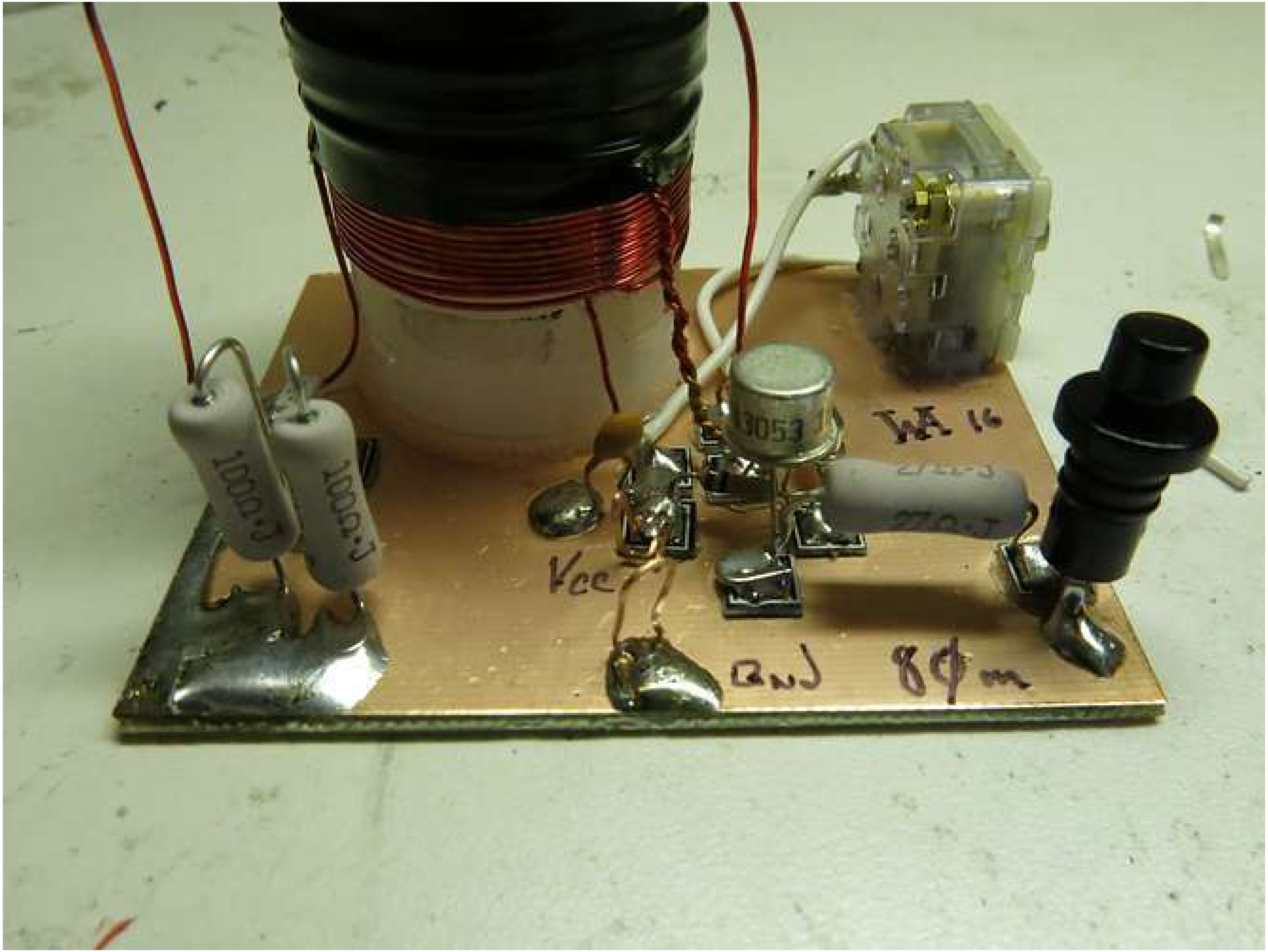

FT-747
22:36 / 44:29
HD


RIGOL DS1054Z
Coupling
DC
BW Limit
OFF
Probe
1X
Invert
OFF
Volts/Div
Coarse
Unit
[V]
CH1
CH2
CH3
CH4
MENU
WECP-20
23:13 / 44:29

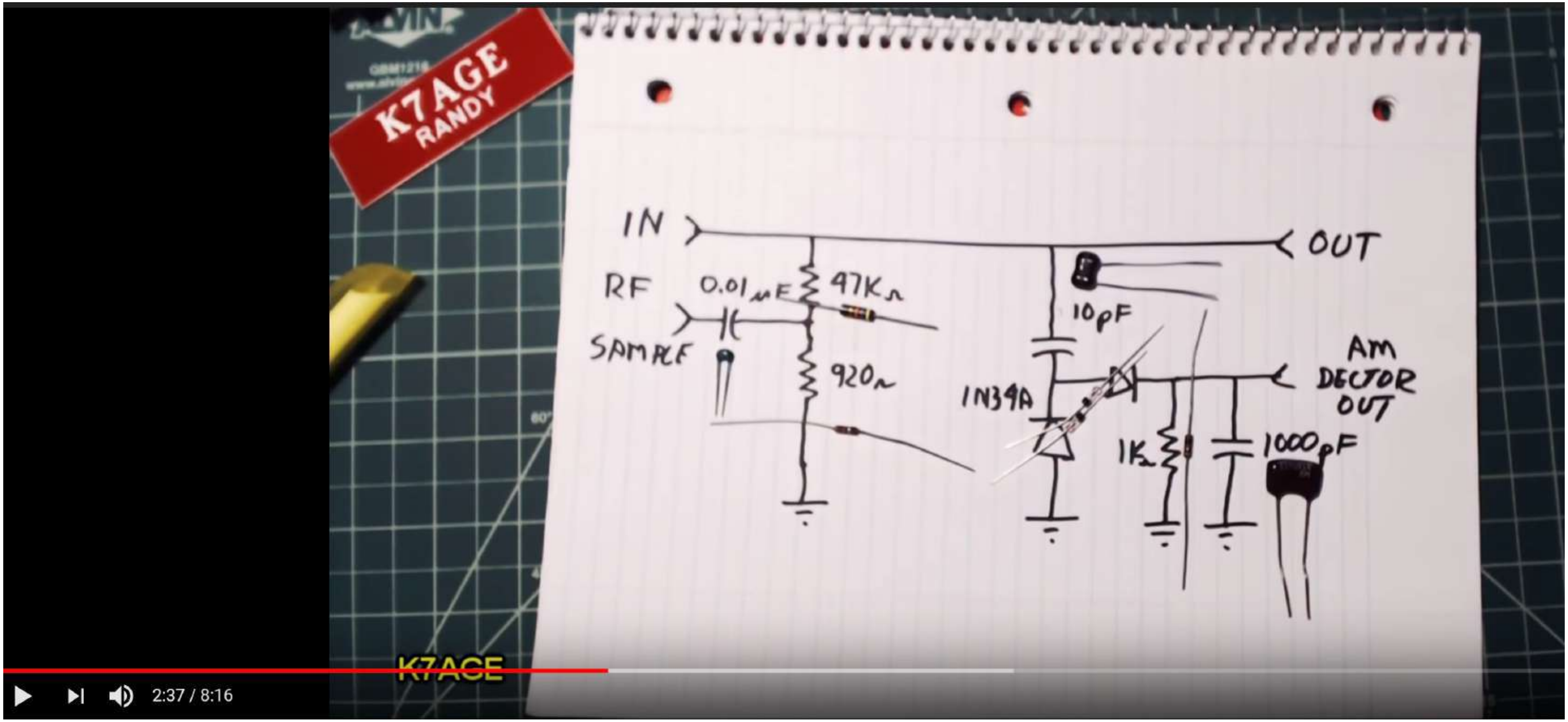

FT-747
NAR
ATT
NB
MOX
ON AIR
3.679.6 00
HF TRANSCEIVER
FT-747GX
POWER
MIC
PHONES
MODE
VFO
MR
SPLIT
AF SQL
MIC DRIVE
SSB Lab. Moni
24:39 / 44:29



#74 Quick Tip: Build a Variable RF Tap for your shack or lab



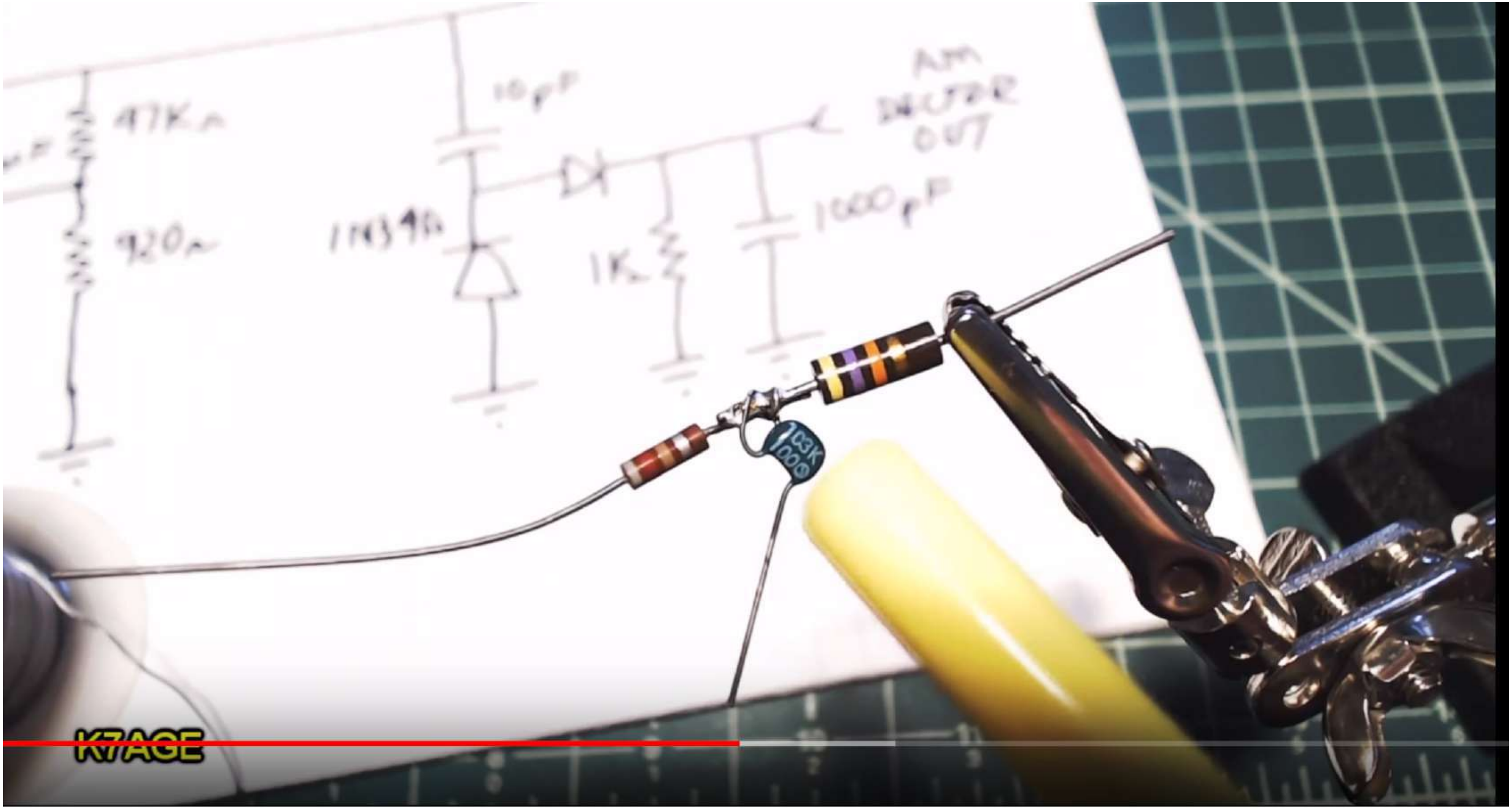
1000Ω J
1000Ω J
3053
Vcc
Gnd
80m
270 J

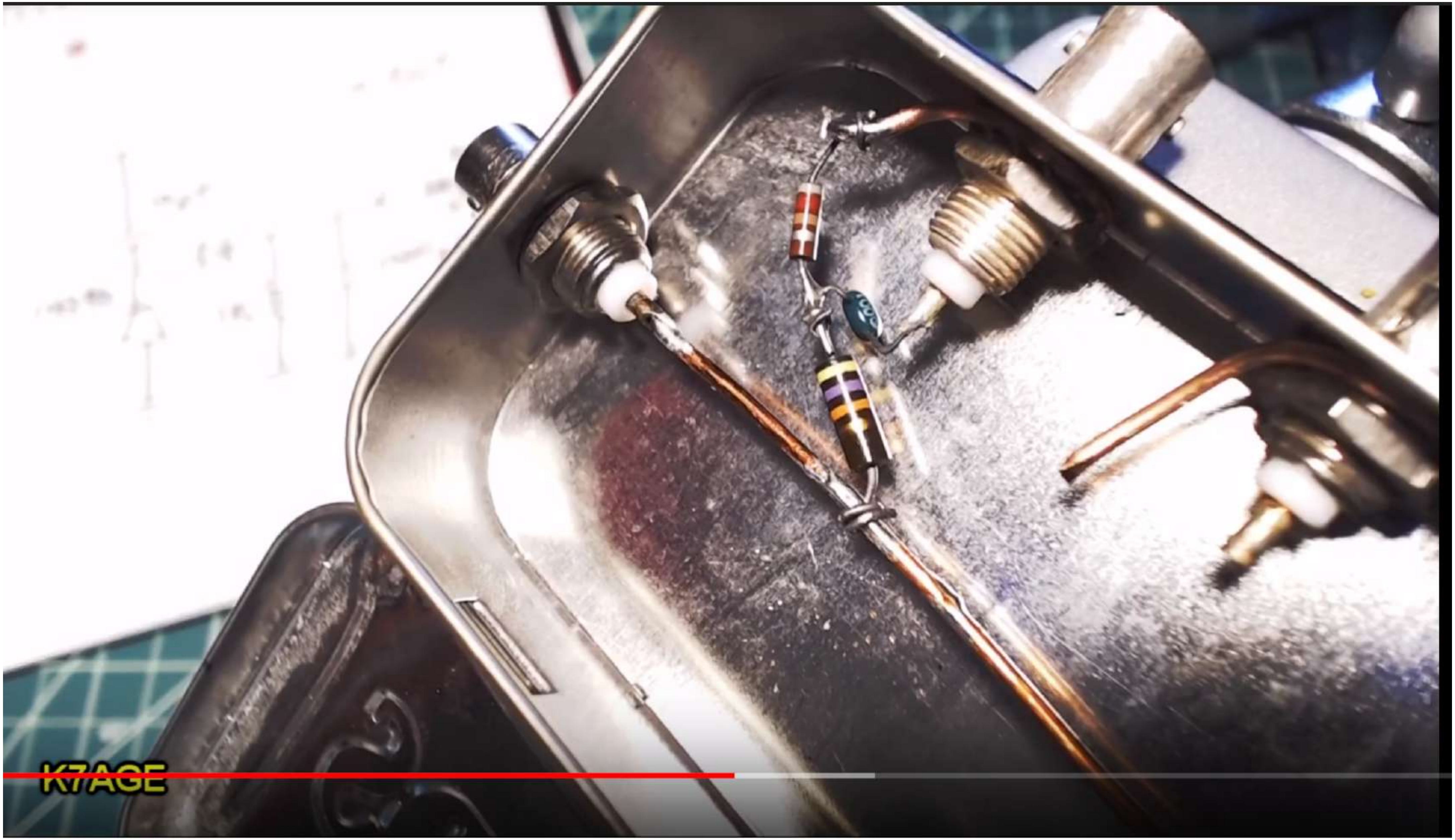


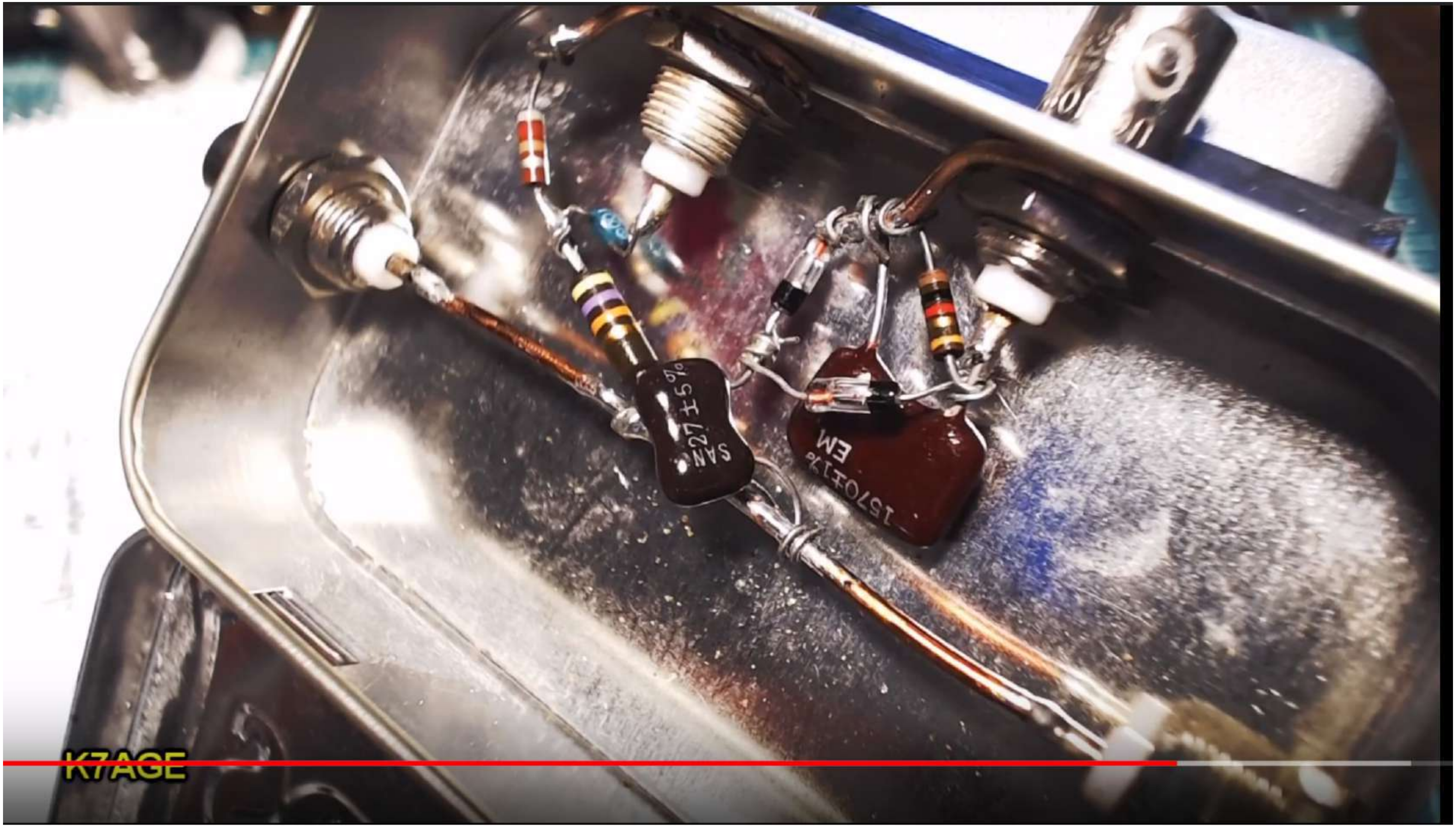
How To Build An RF Sampler Box

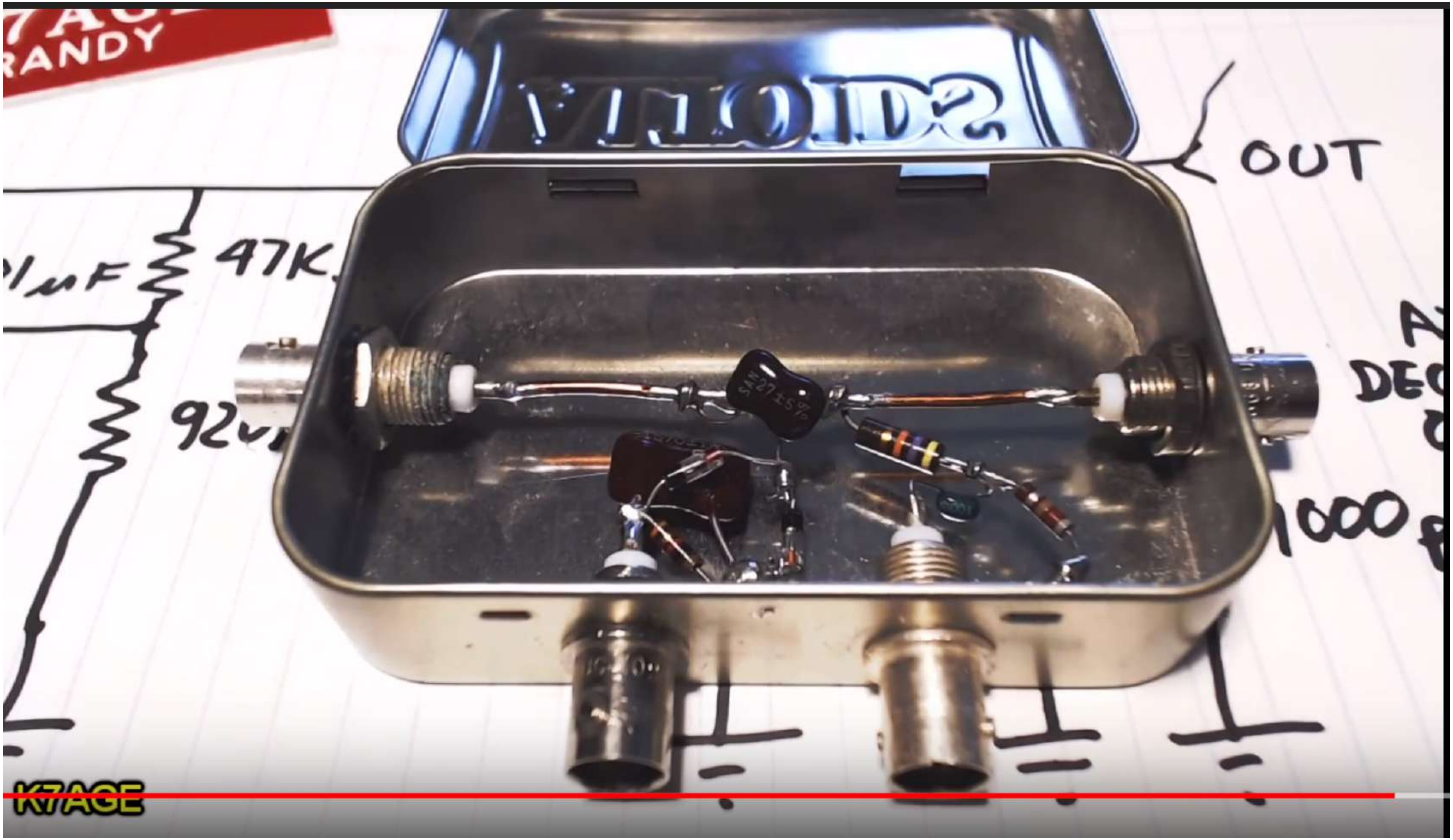

K7AGE
RANDY
The Original Celebrated
ALTOIDS
CURIOUSLY STRONG MINTS
100% Natural
PEPPERMINT
K7AGE

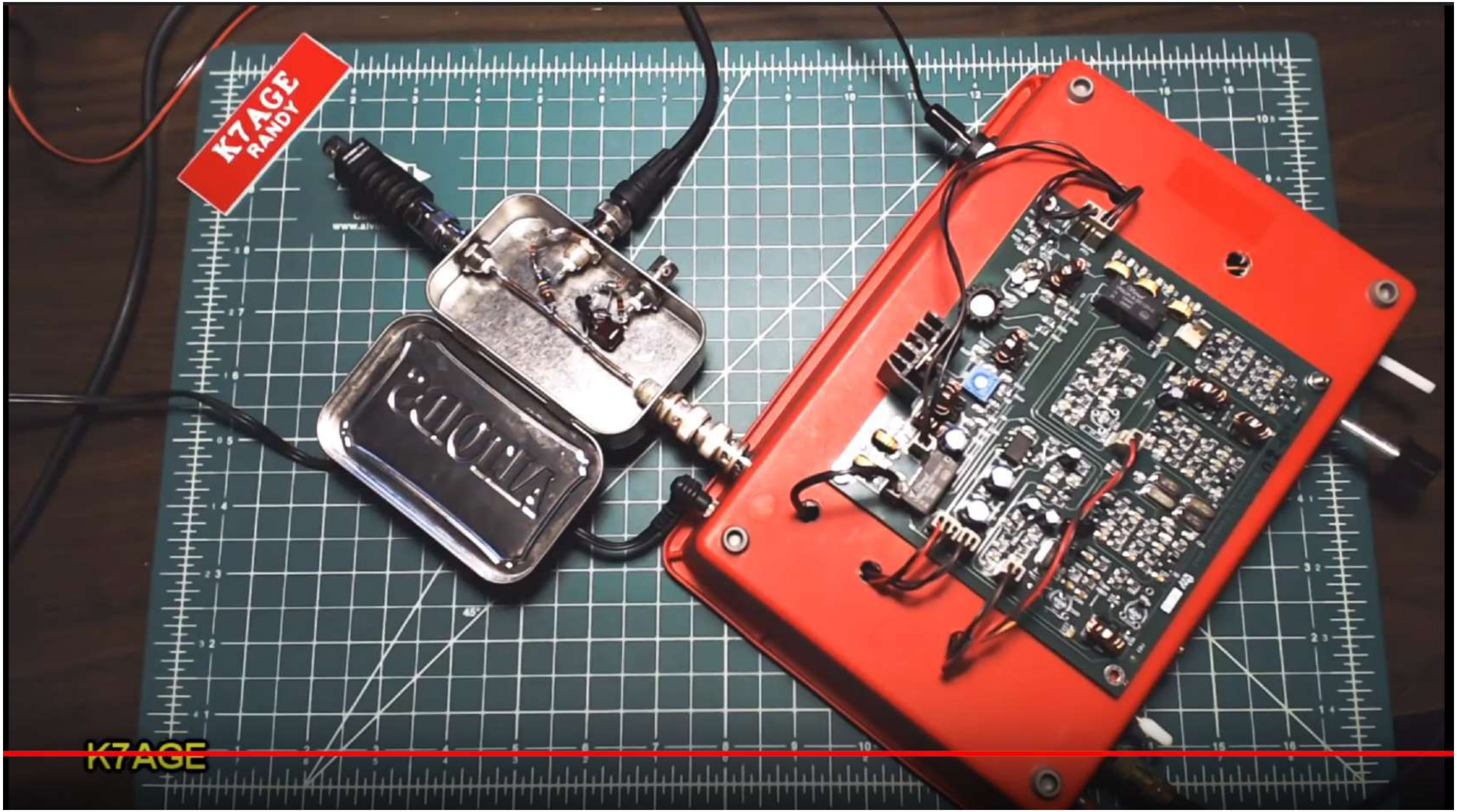

K7AGE
RANDY
ALVIN
ALTOIDS
K7AGE

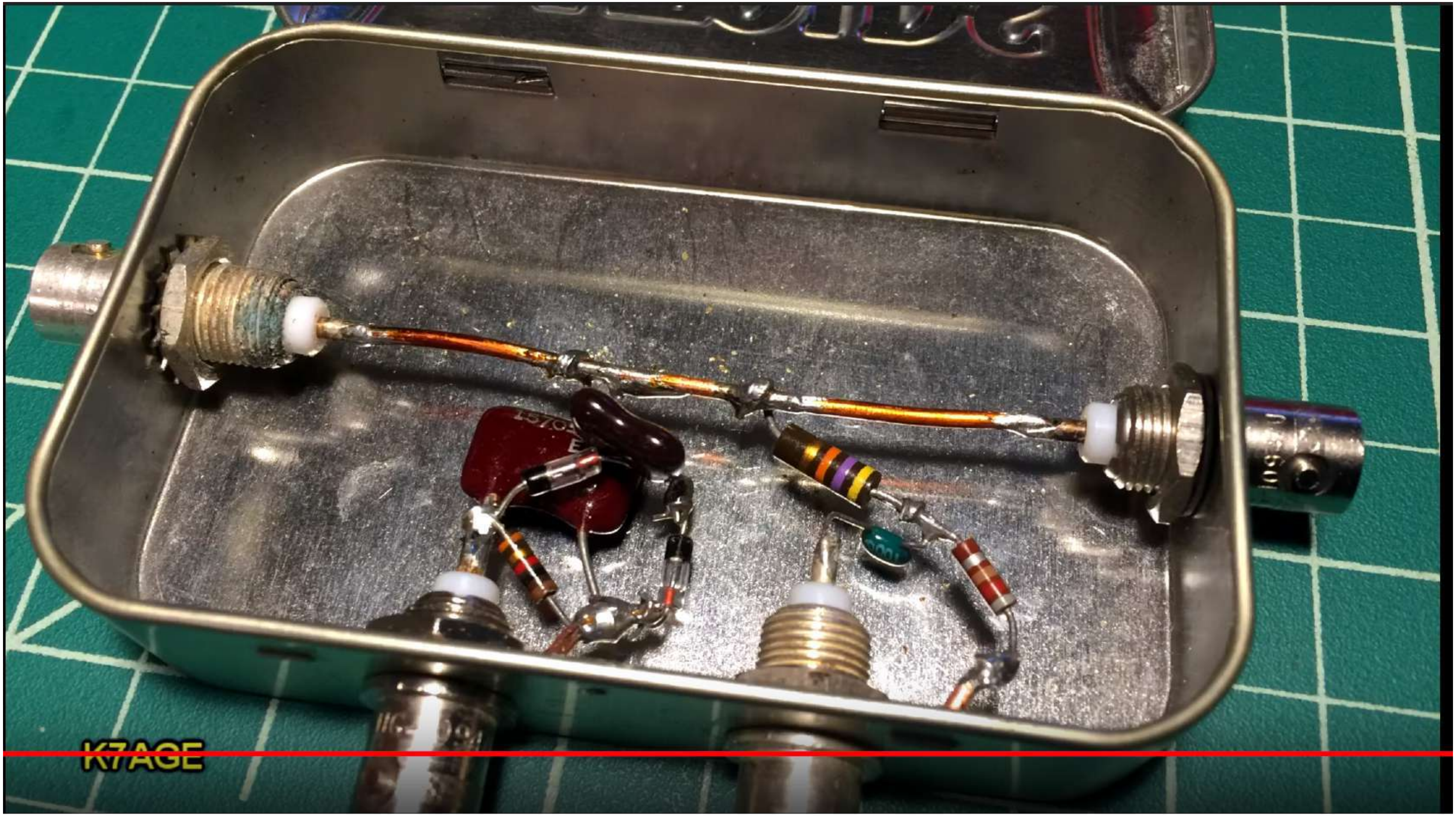

47KΩ
10pF
1N34A
1KΩ
1000pF
AM
OUT
103K
K7AGE


K7AGE

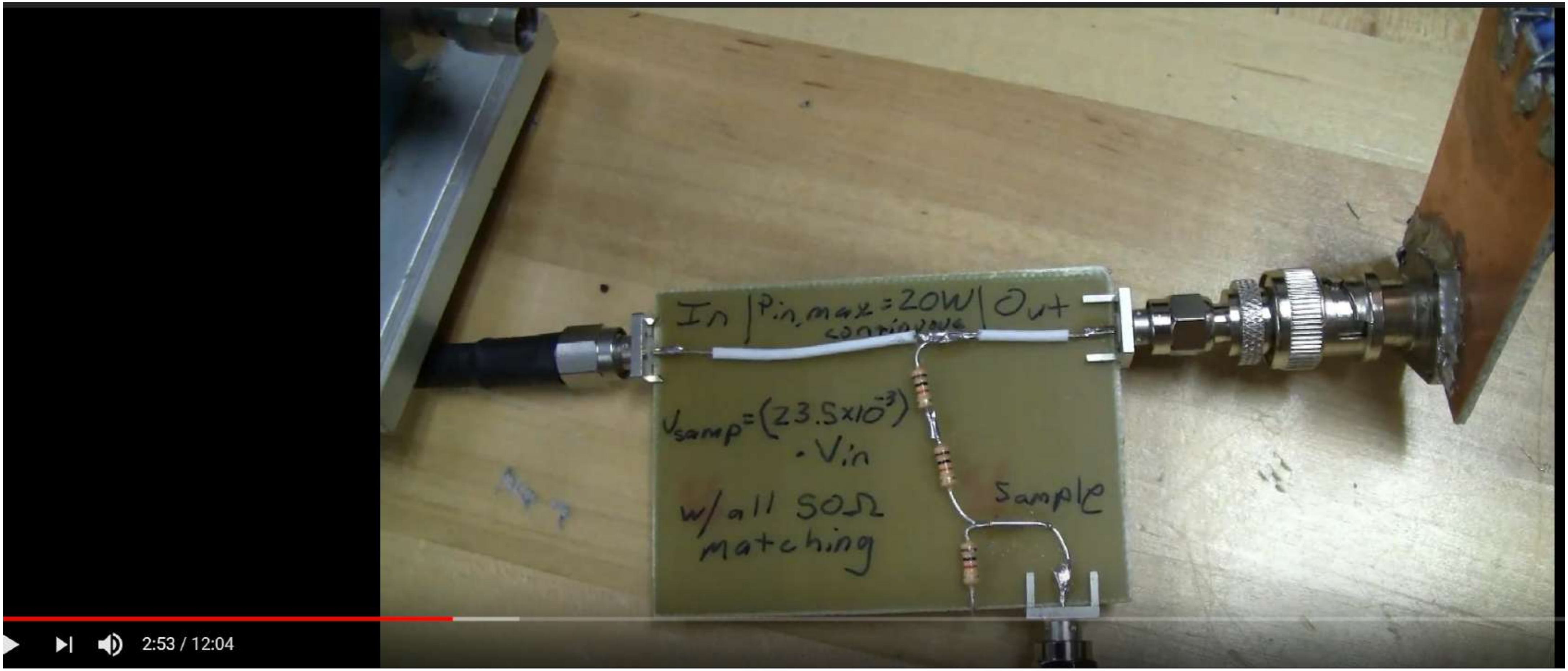

K7AGE


RANDY
OUT
47K
1000
K7AGE


K7AGE
RANDY
ALTOIDS
K7AGE

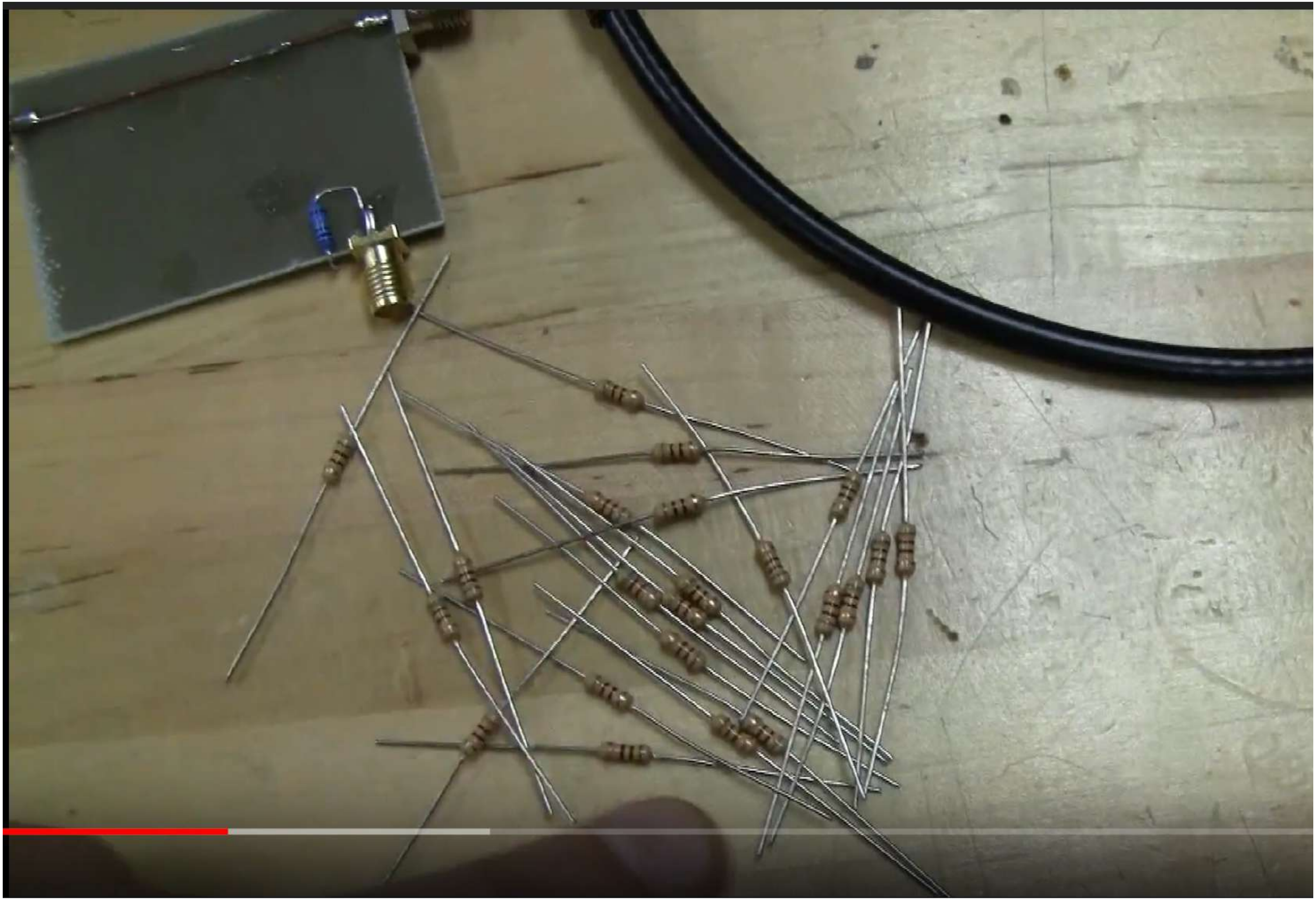

K7AGE

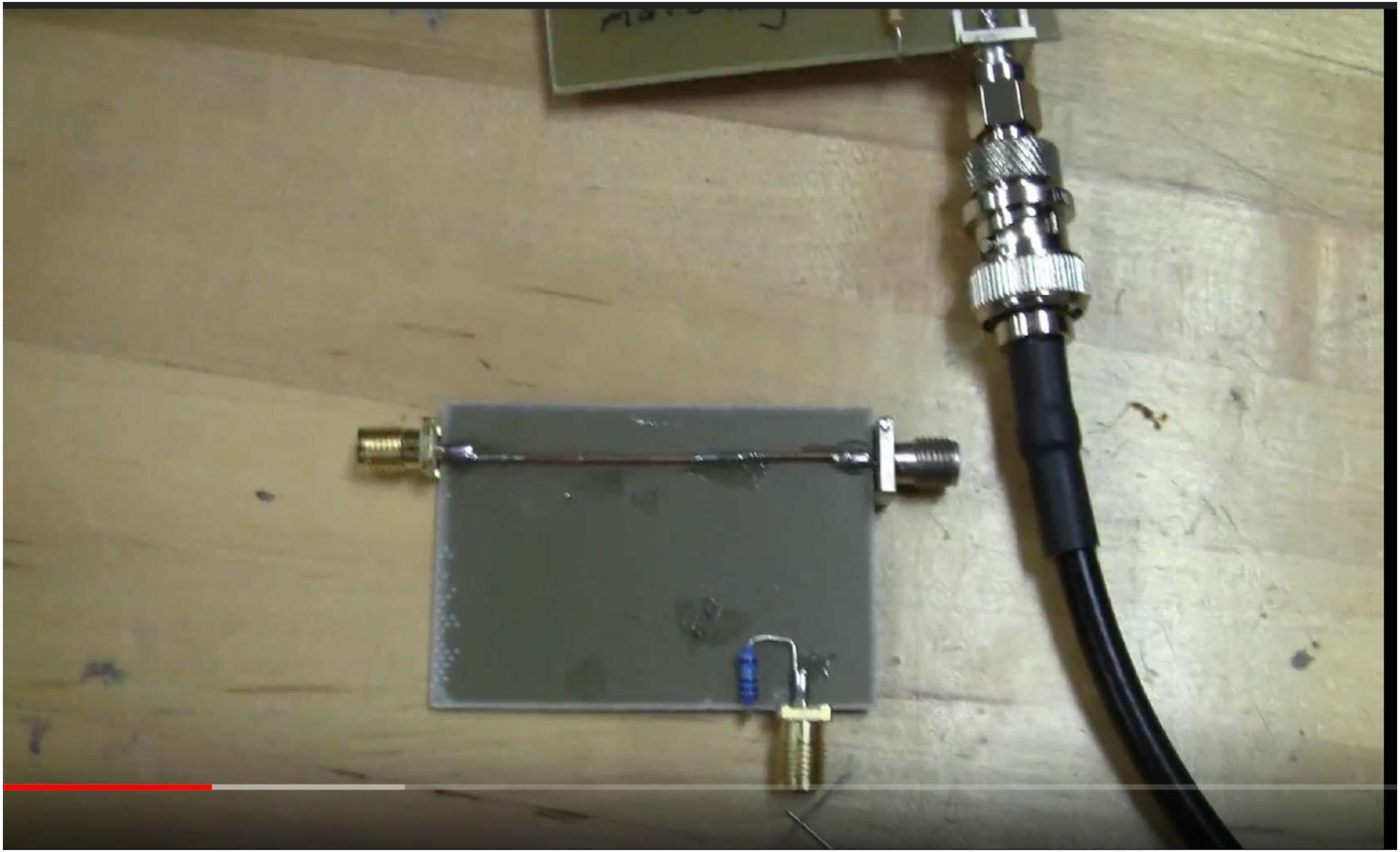

K7AGE

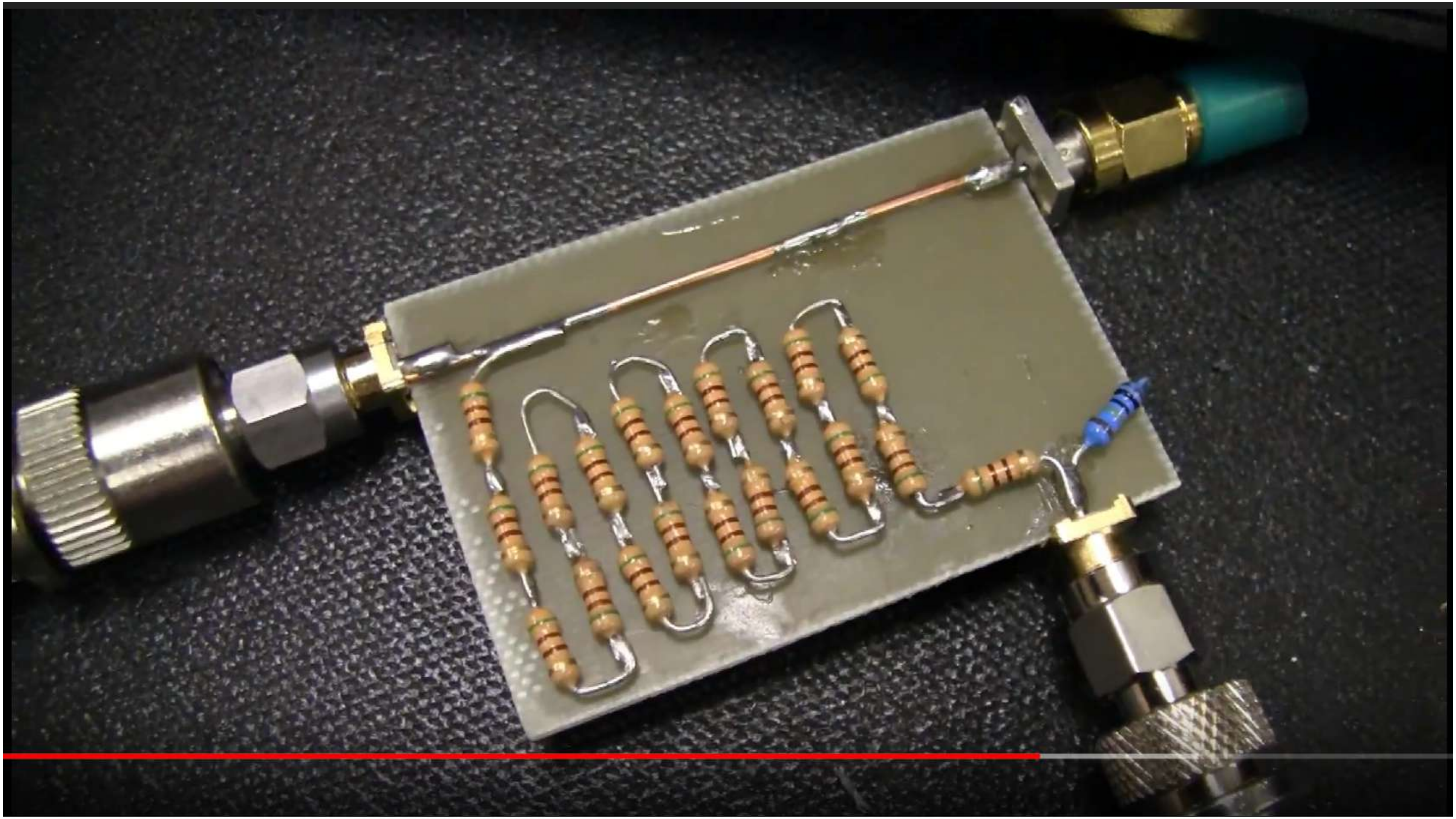


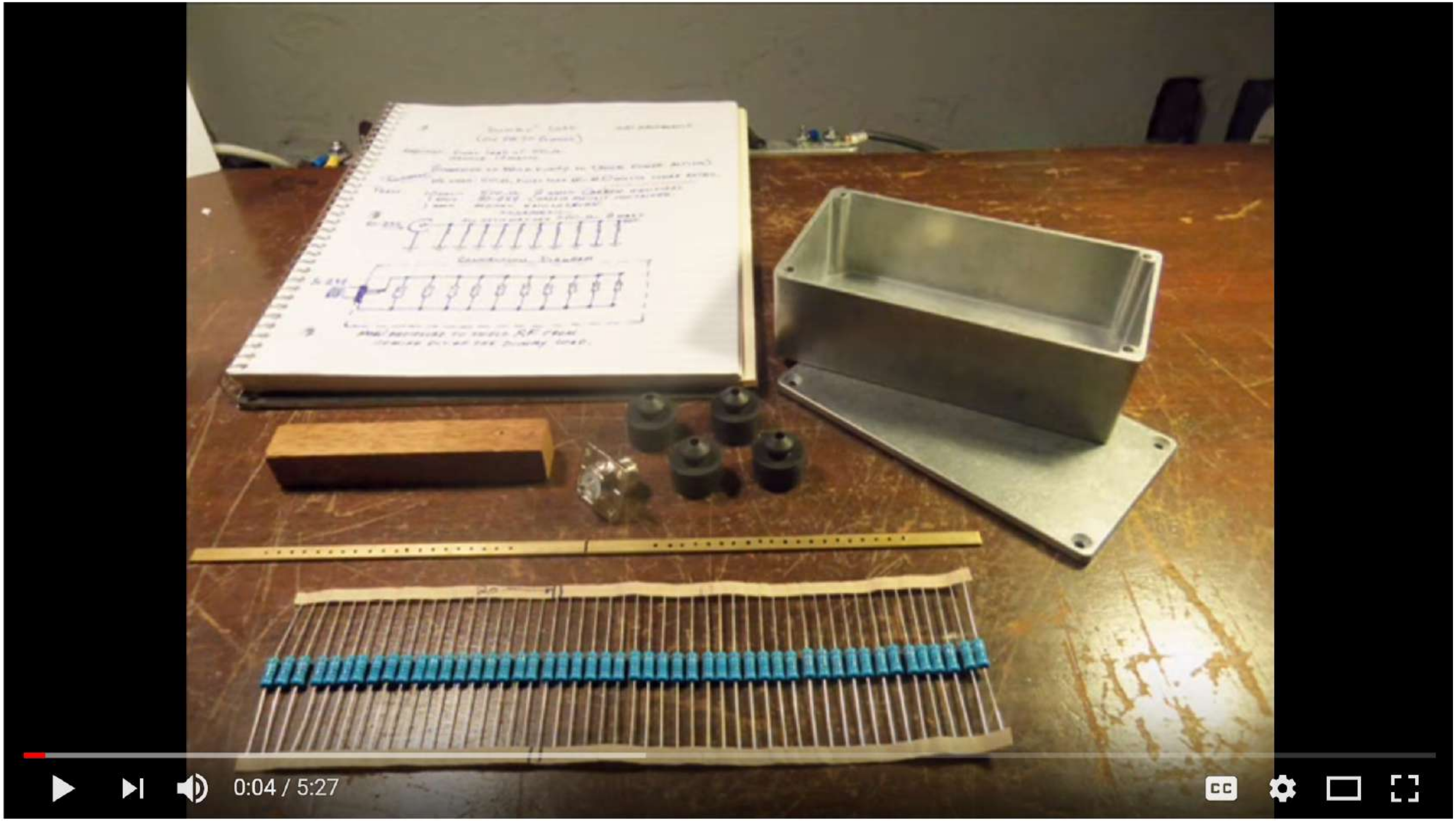
Up next

Building an RF Signal Sampler for Oscilloscope Measurements

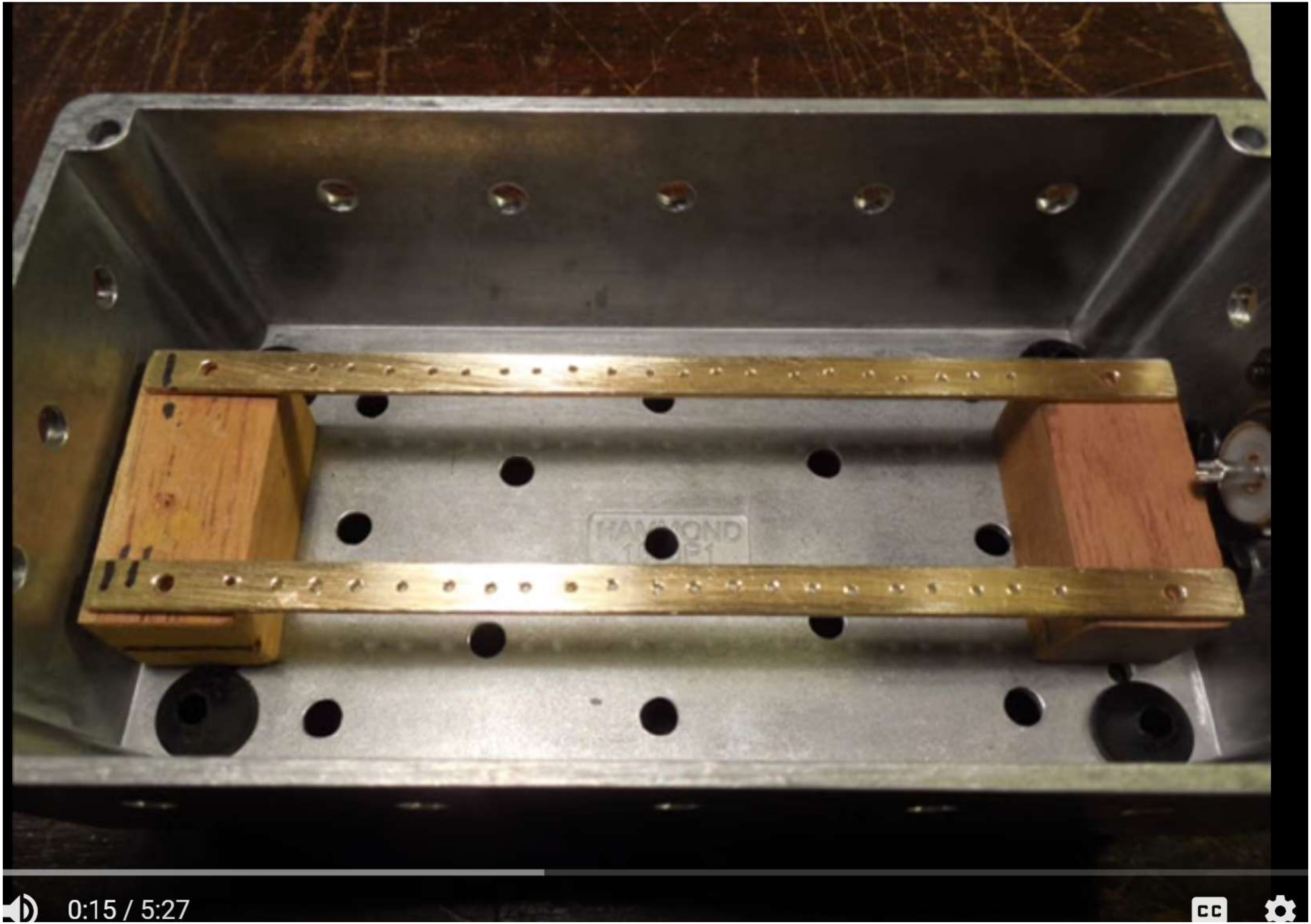


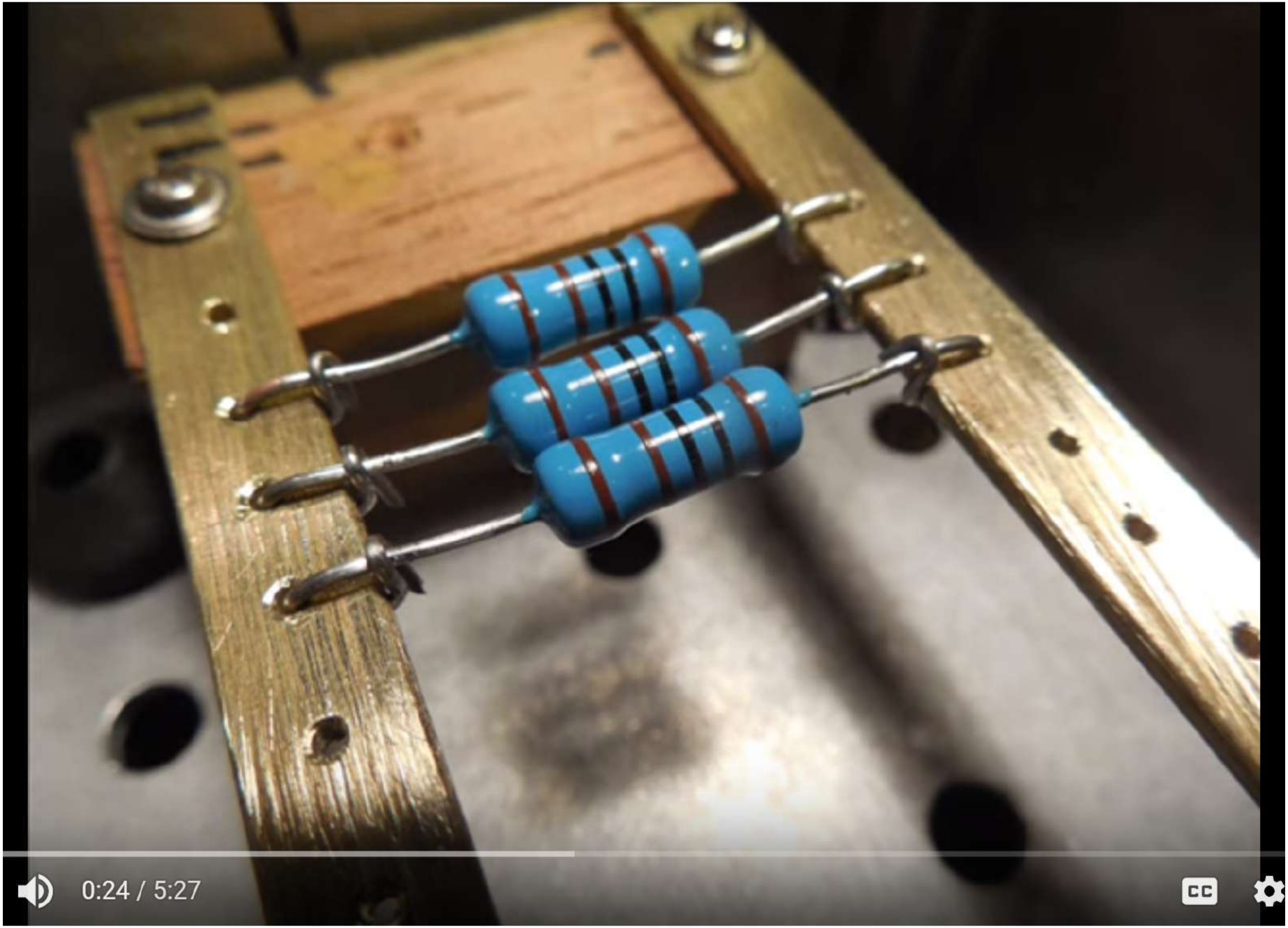


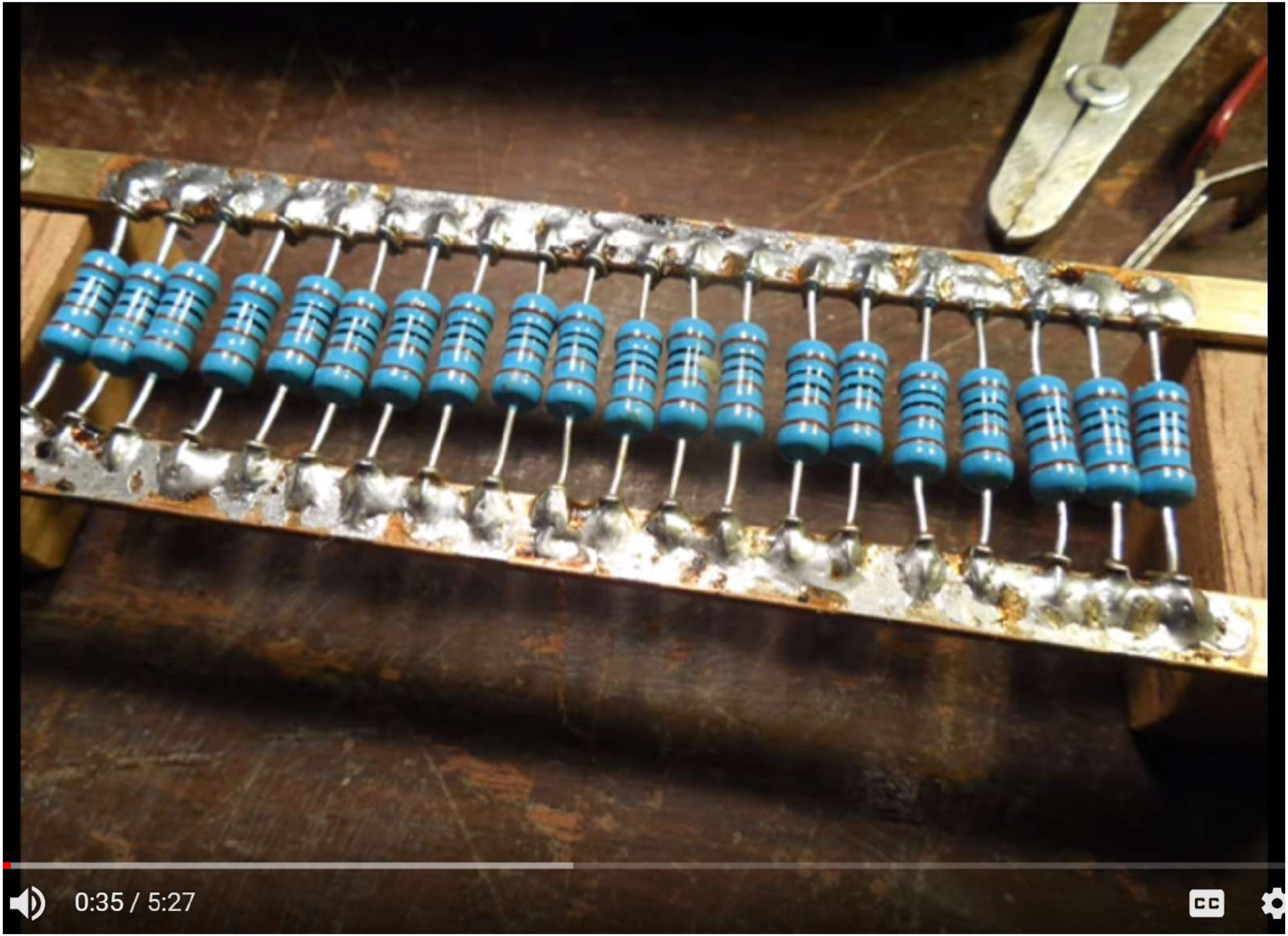




RF Dummy Load


0:15 / 5:27
CC


0:24 / 5:27


0:35 / 5:27

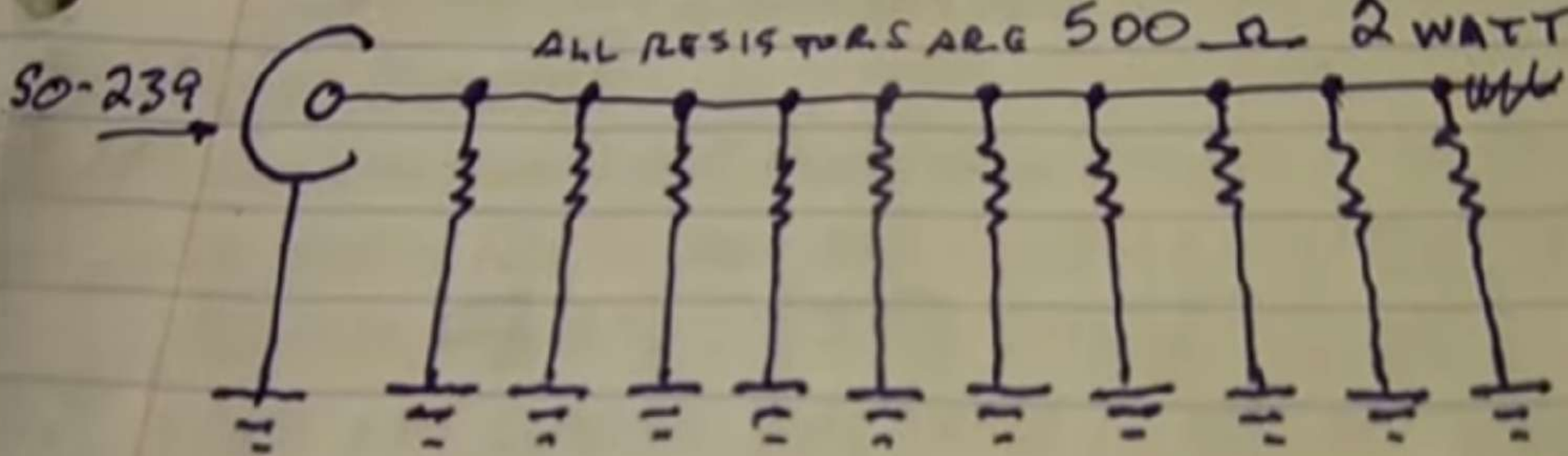
NEVER USE WIRE

PARTS: 10 each 500 Ω 2 WATT CARBON RESIST

1 each SO-239 CHASSIS MOUNT CONTAINE

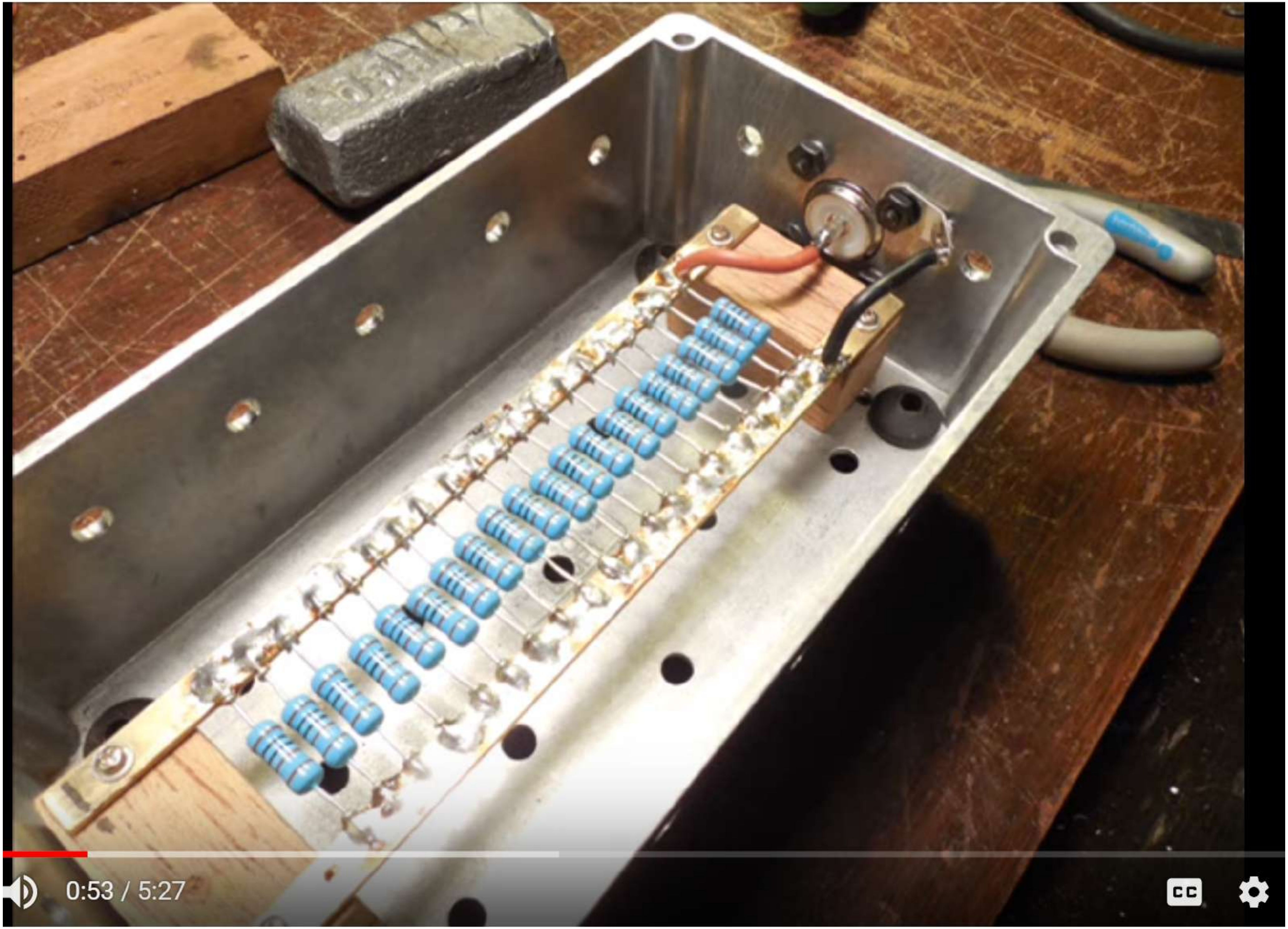
1 each METAL ENCLOSURE

SCHEMATIC

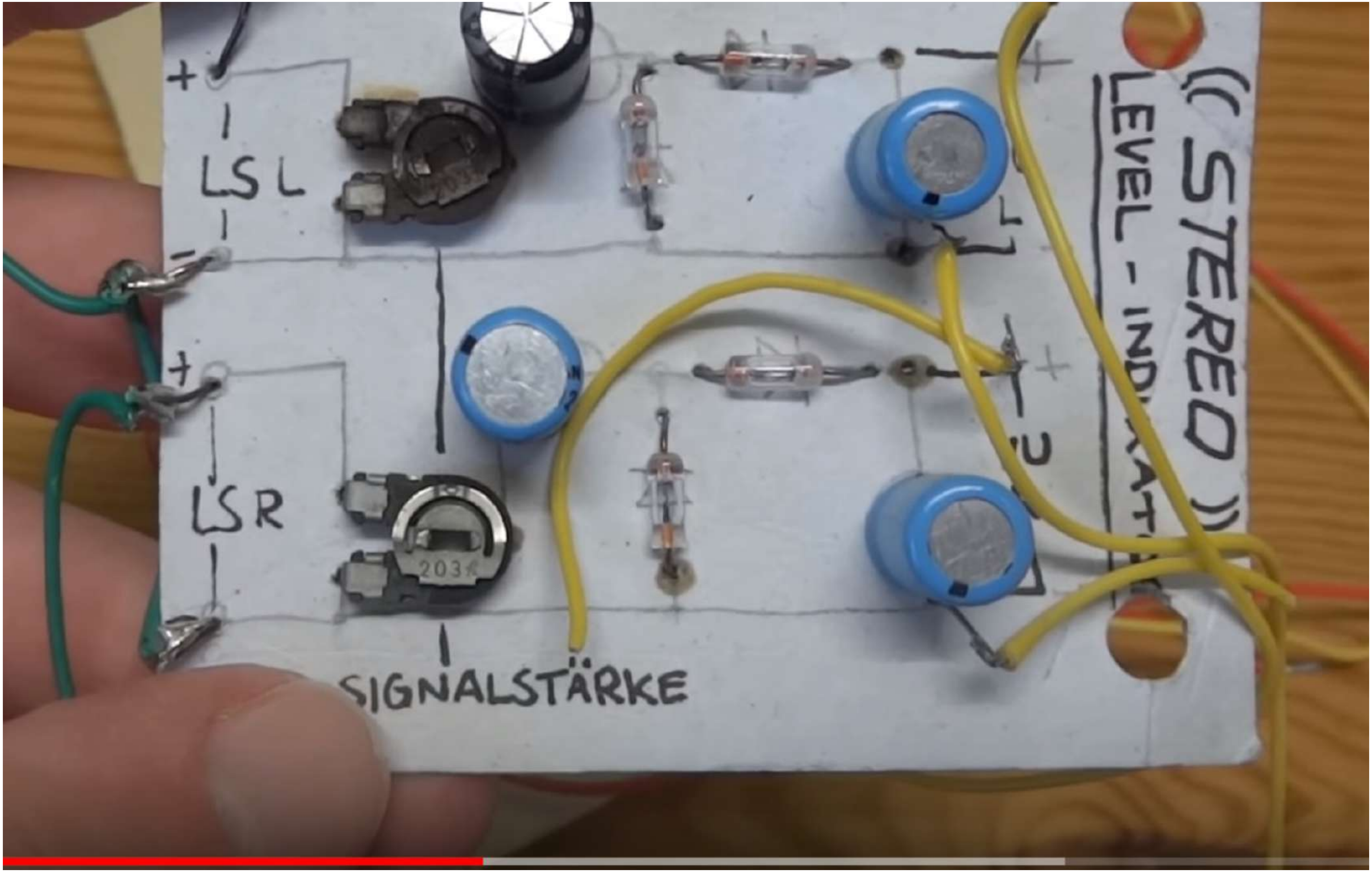


CONNECTION DIAGRAM

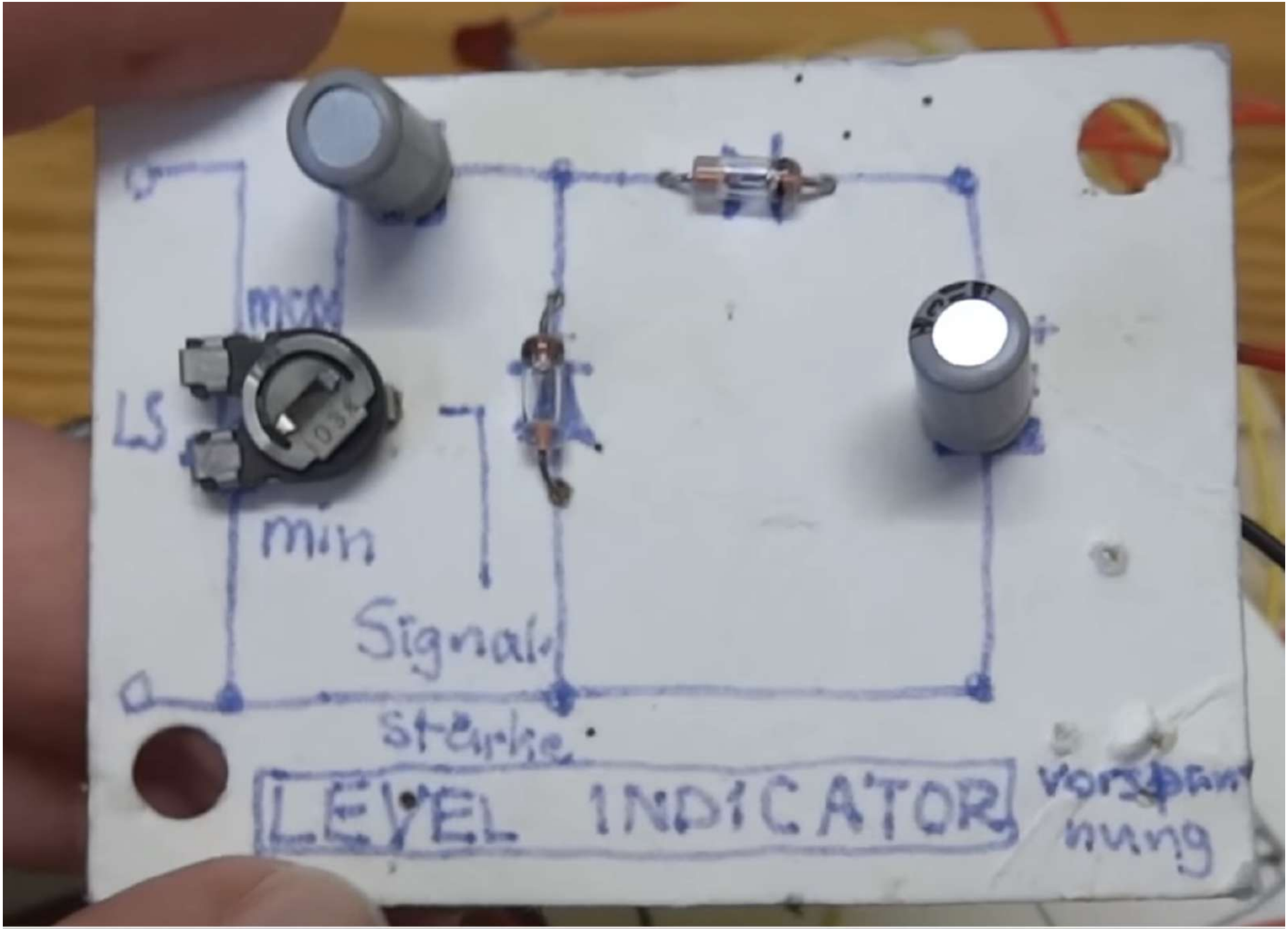
2:23 / 5:27

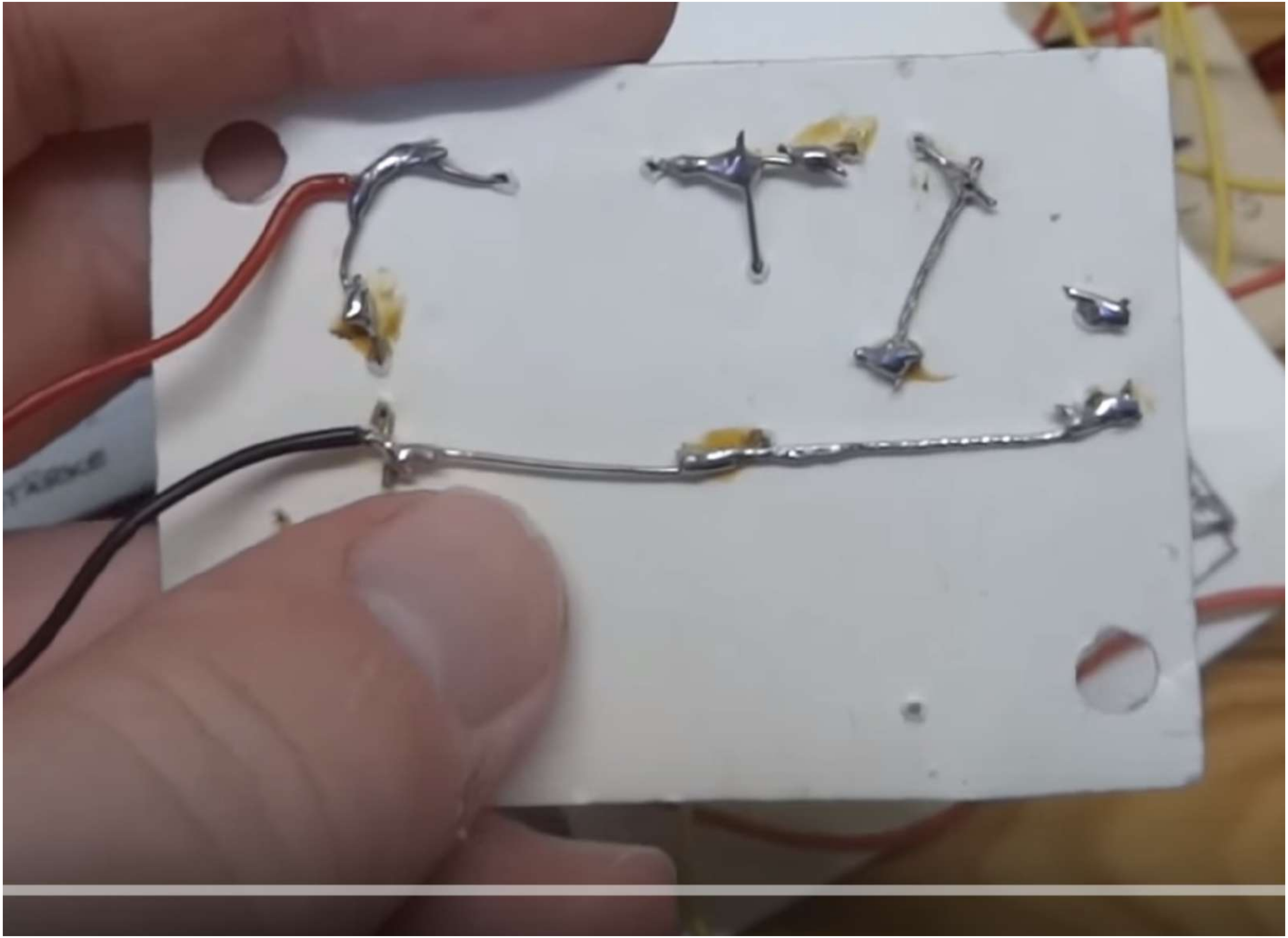

0:53 / 5:27

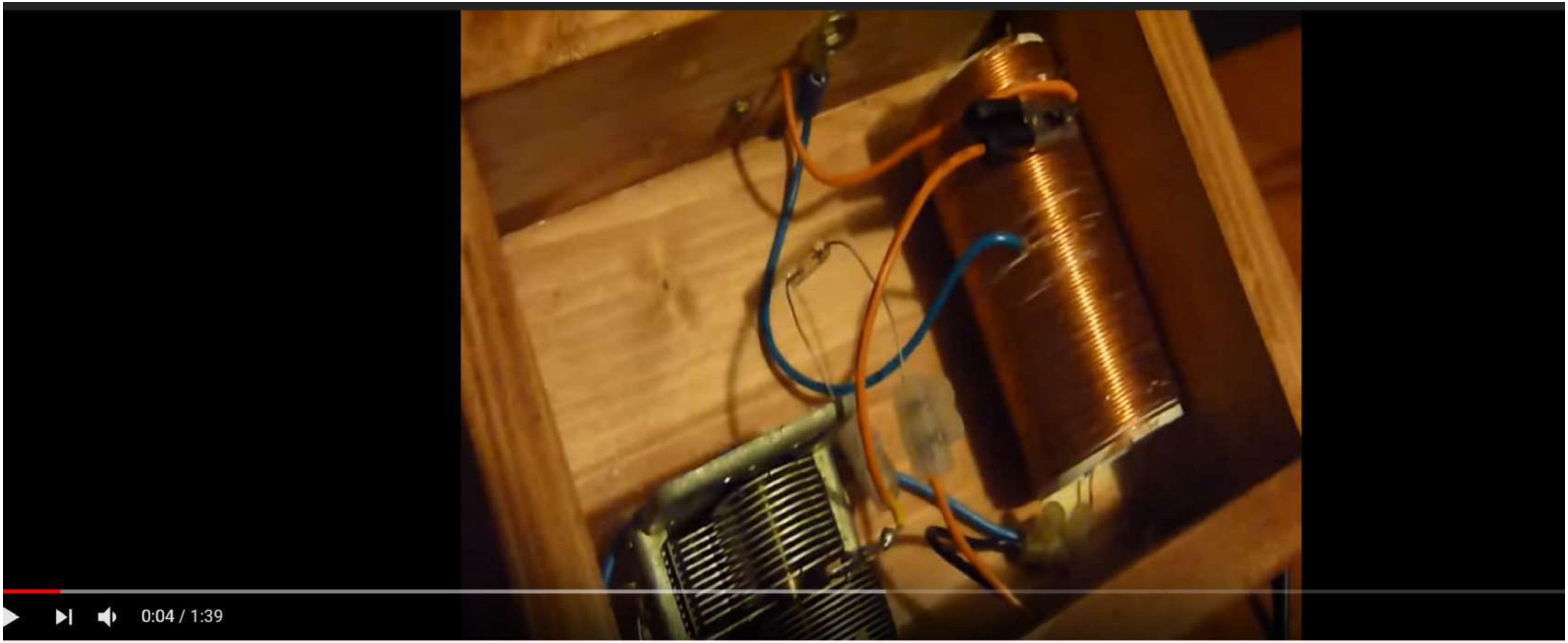
Dummy" LOAD
(FOR HW-20 PAWNEE)
RESISTANCE IN PARALLEL
DUMMY LOAD
50 OHMS
20 WATTS
3:47 / 5:27



LSL
LSR
SIGNALSTÄRKE
((STEREO))
LEVEL - INDIKATOR

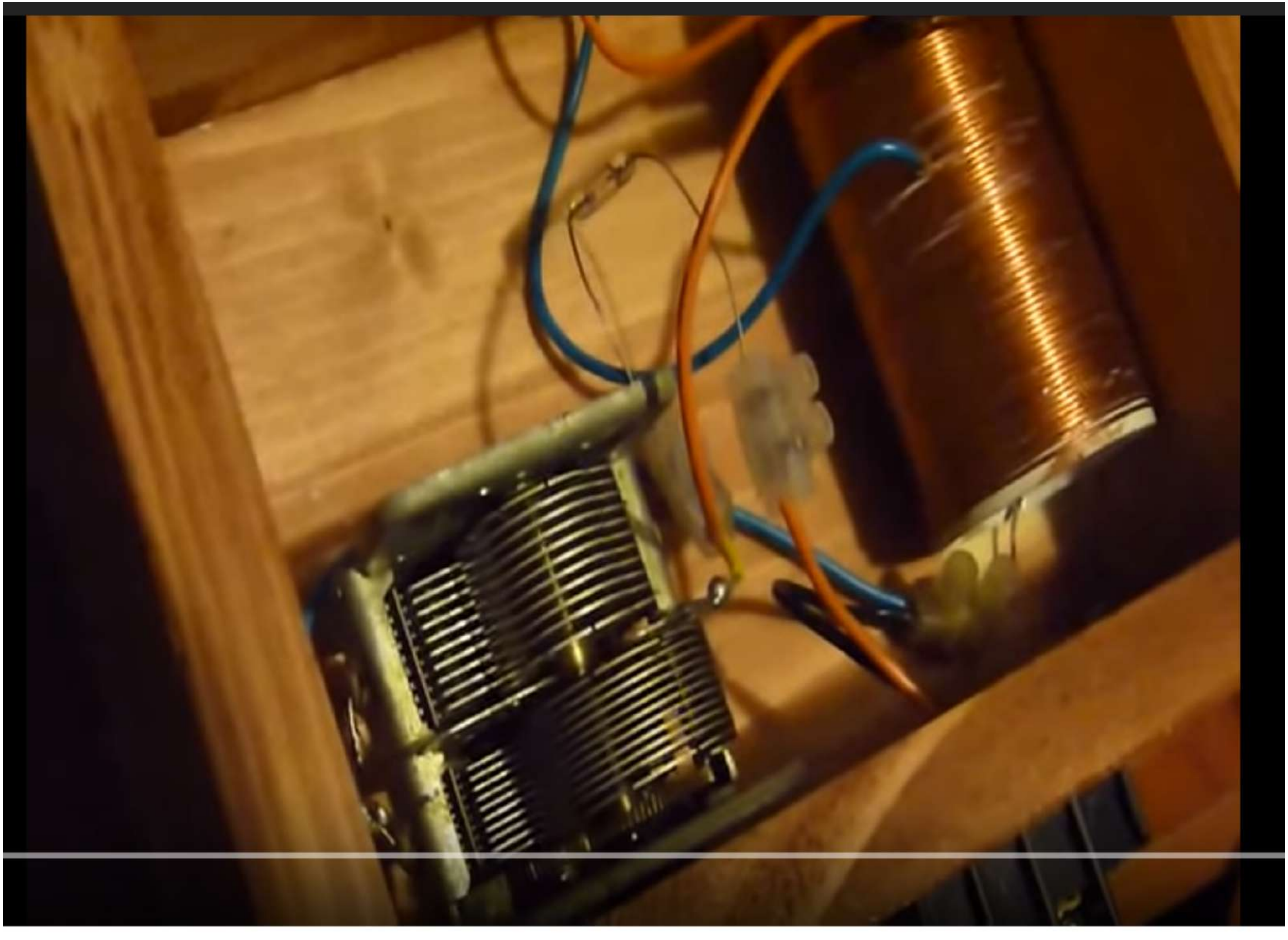

max
LS
min
Signal-
stärke
LEVEL INDICATOR
Vorspannung

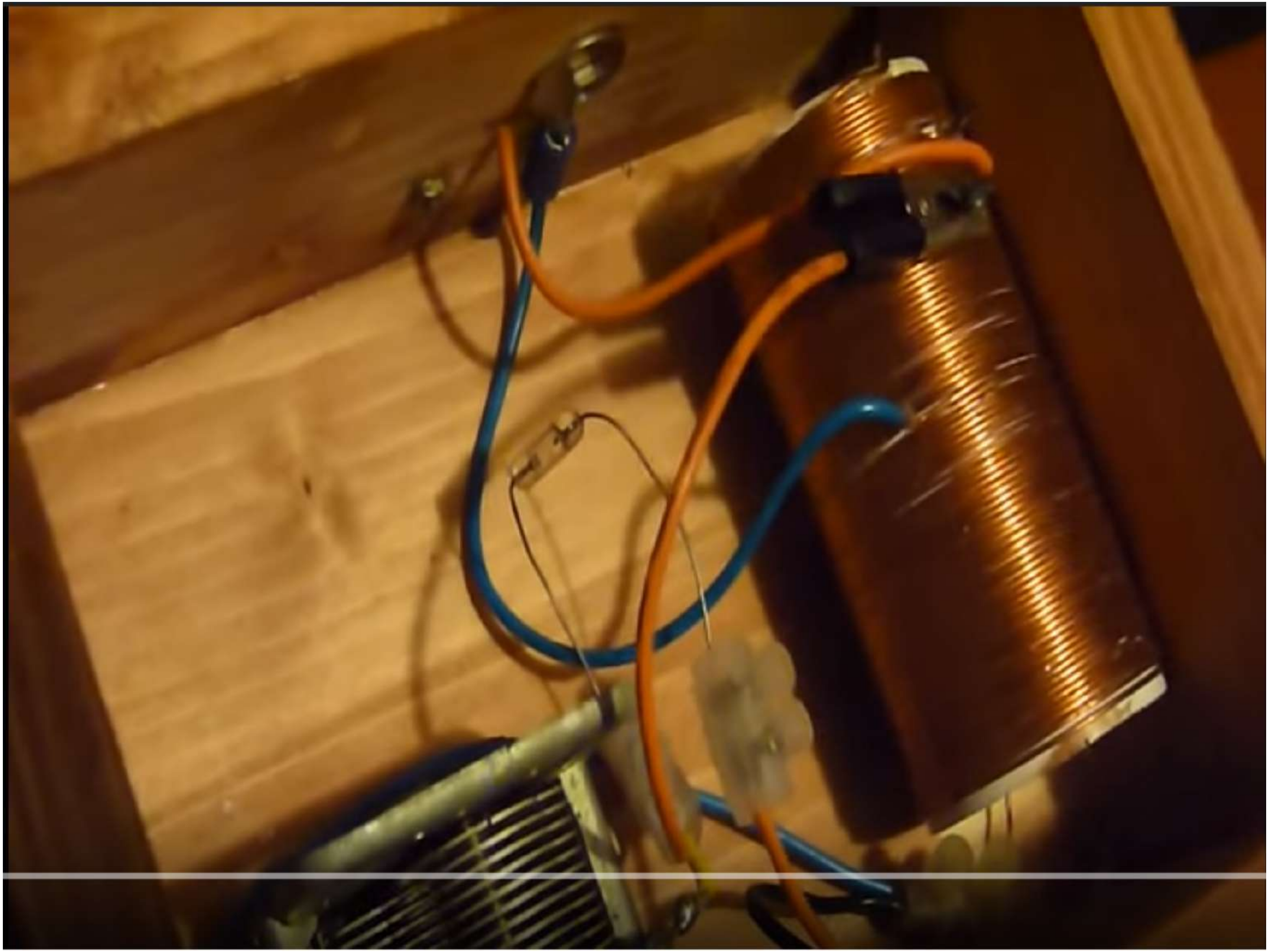


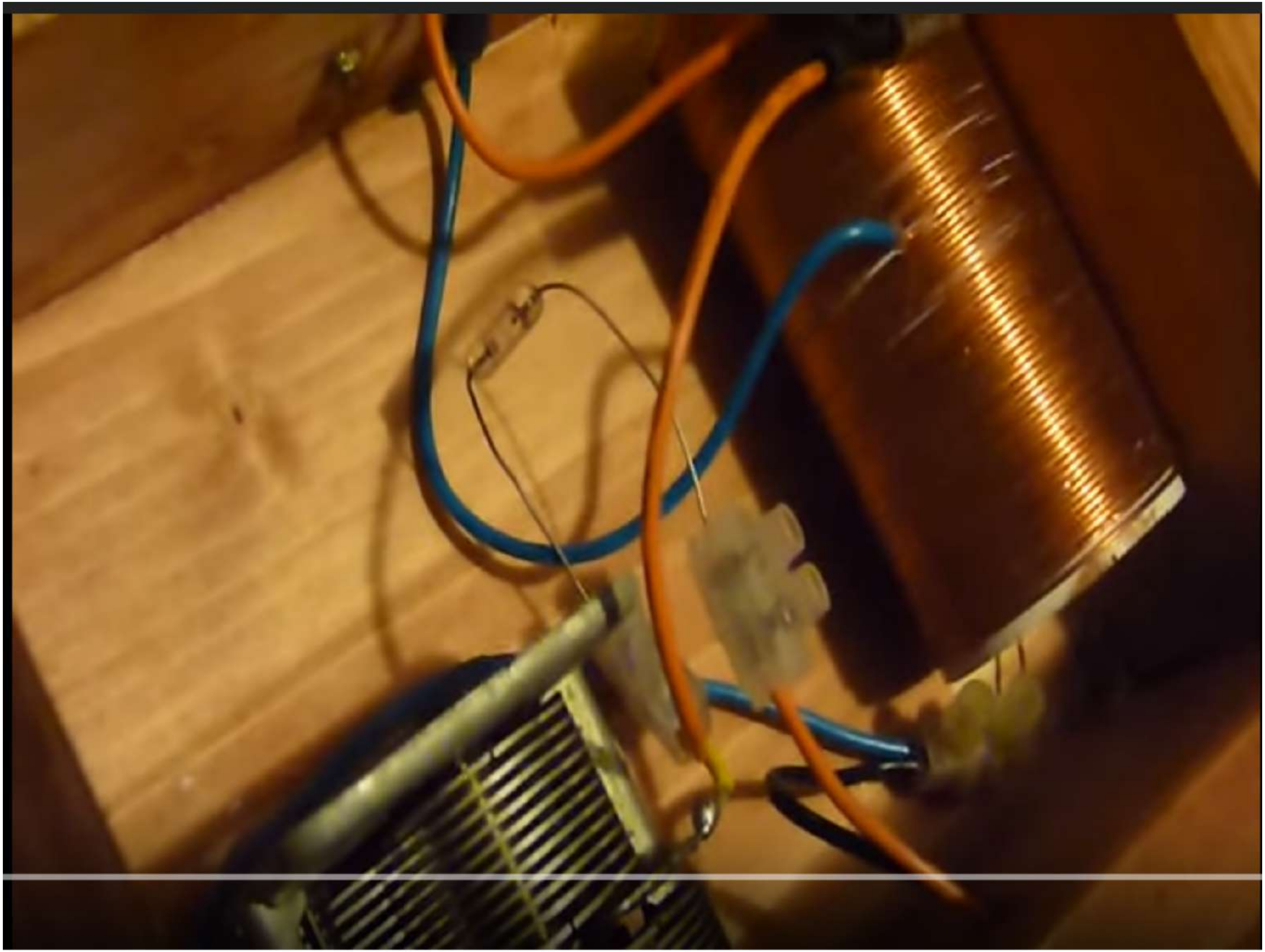


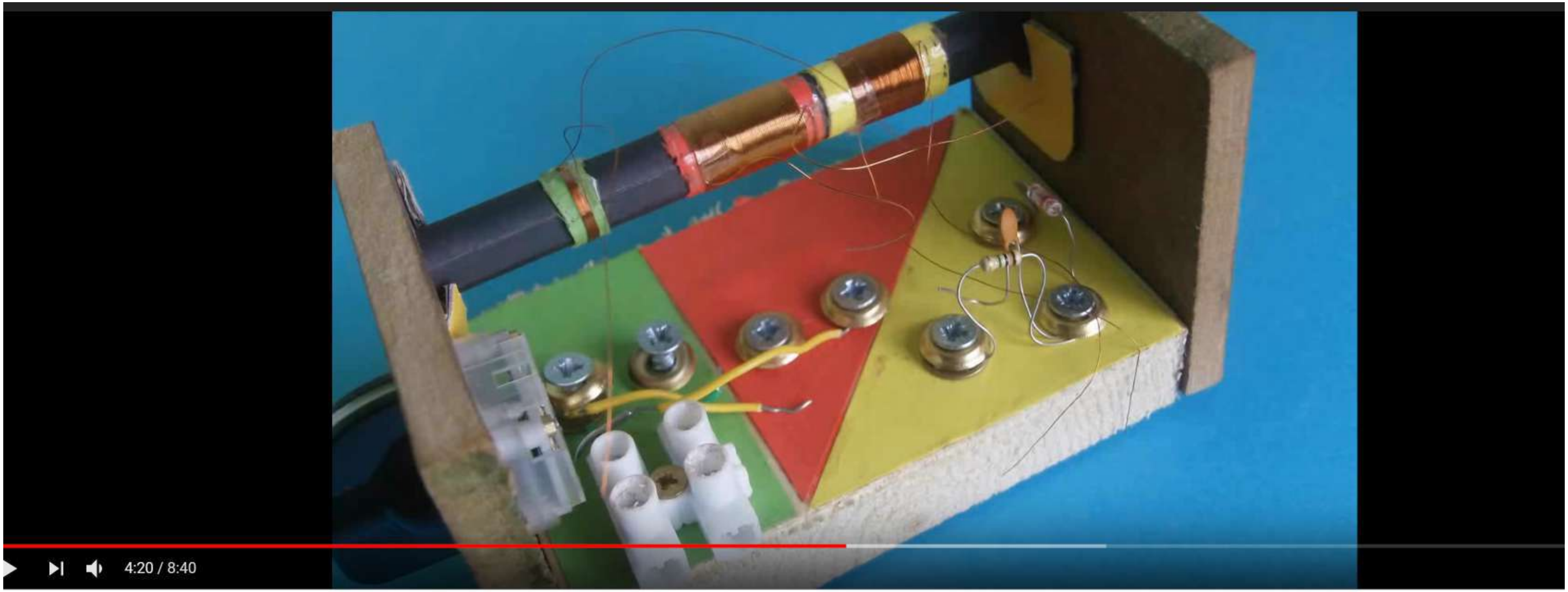
Up next

Radio a galena





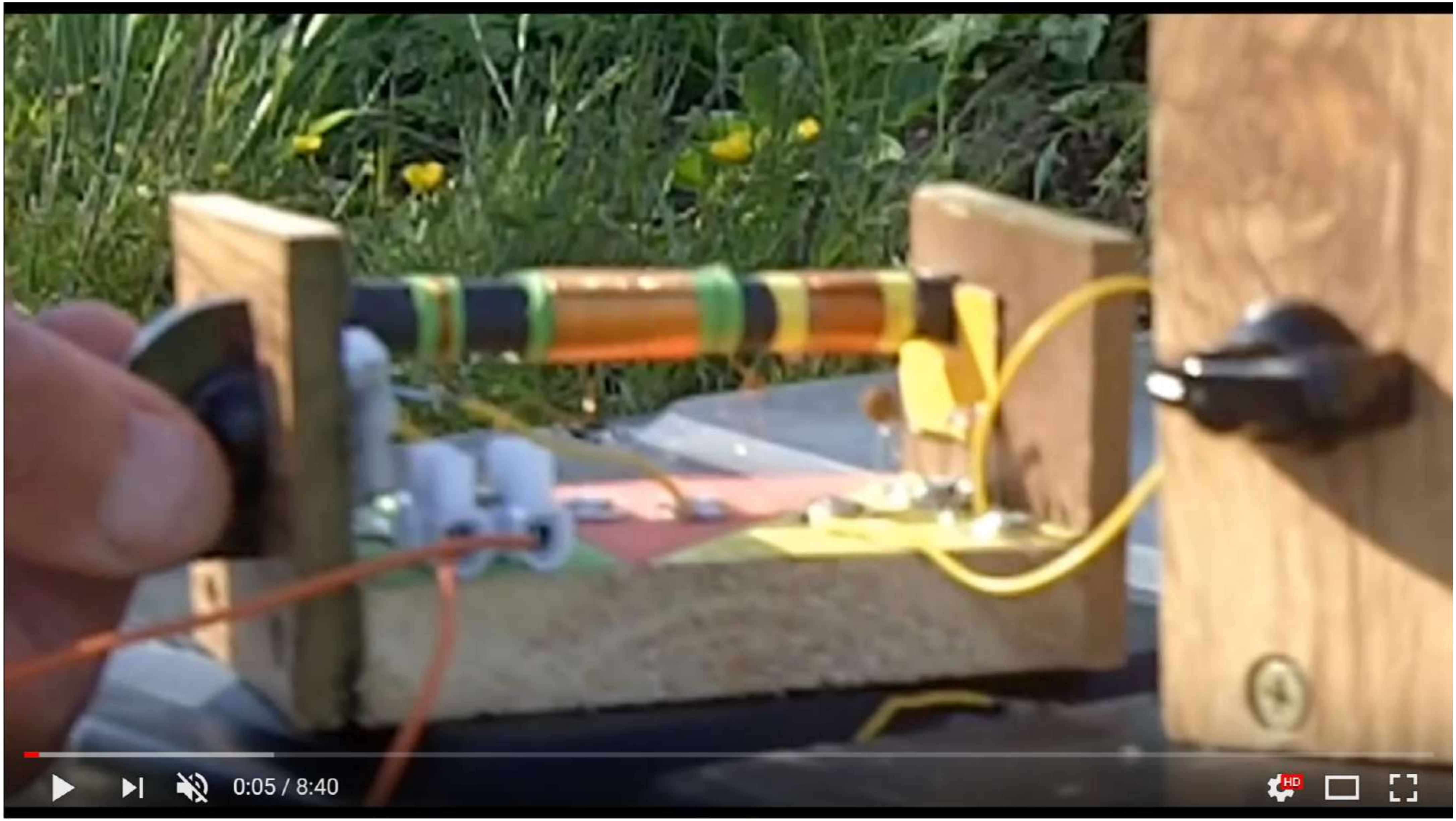


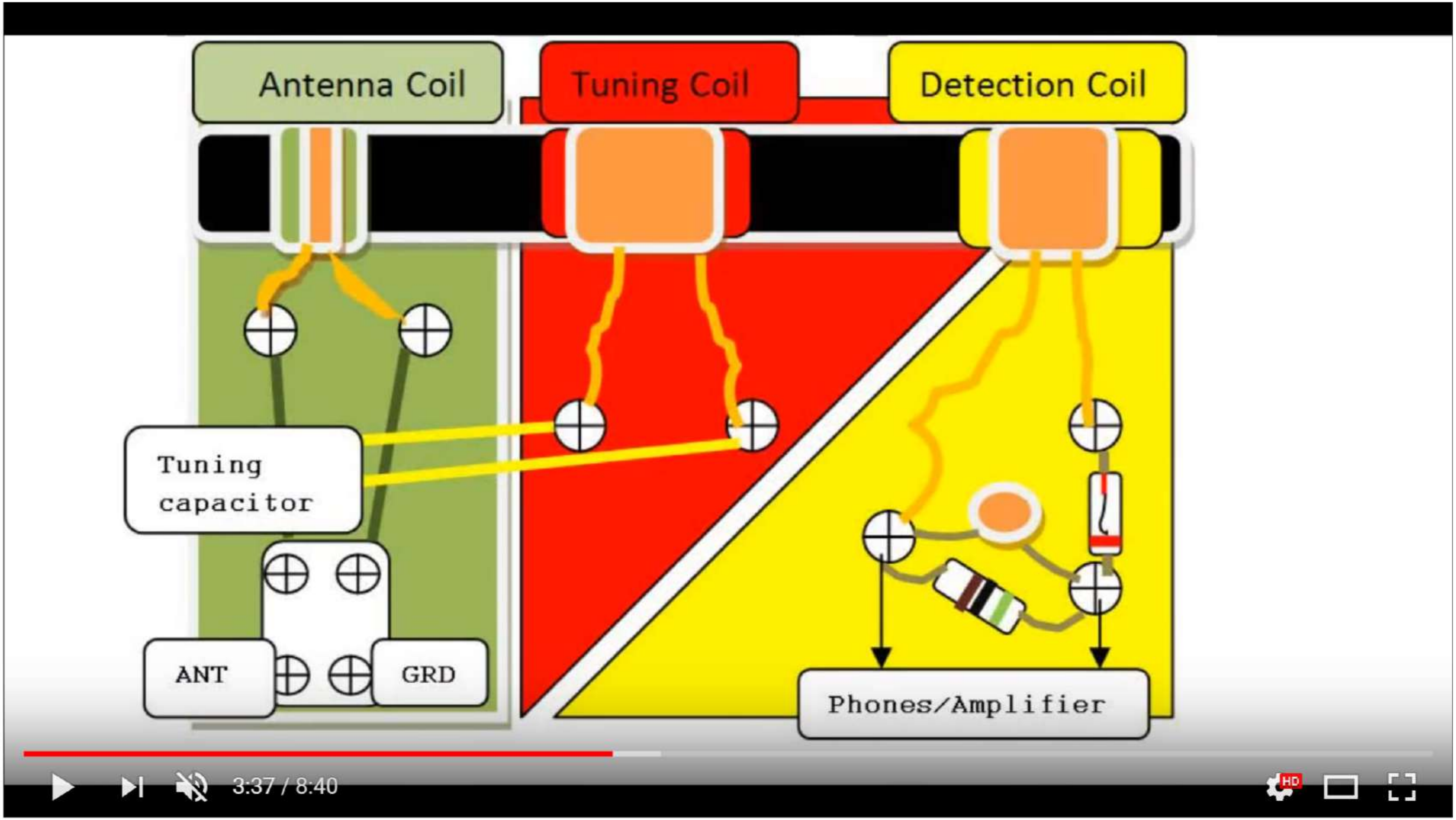


Making a Crystal Radio (How to make a Crystal Radio)

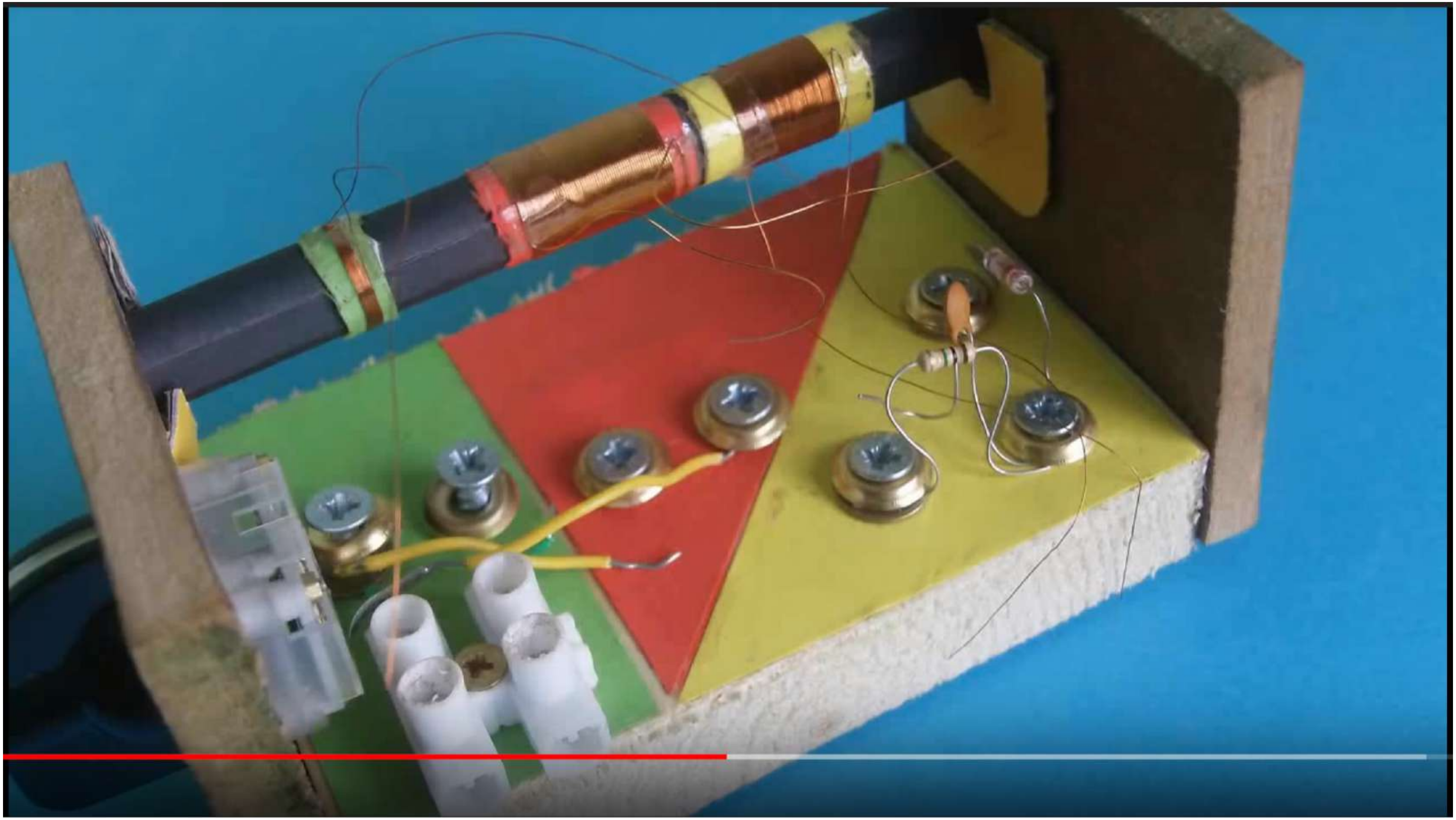
Up next

AU


0:05 / 8:40
HD

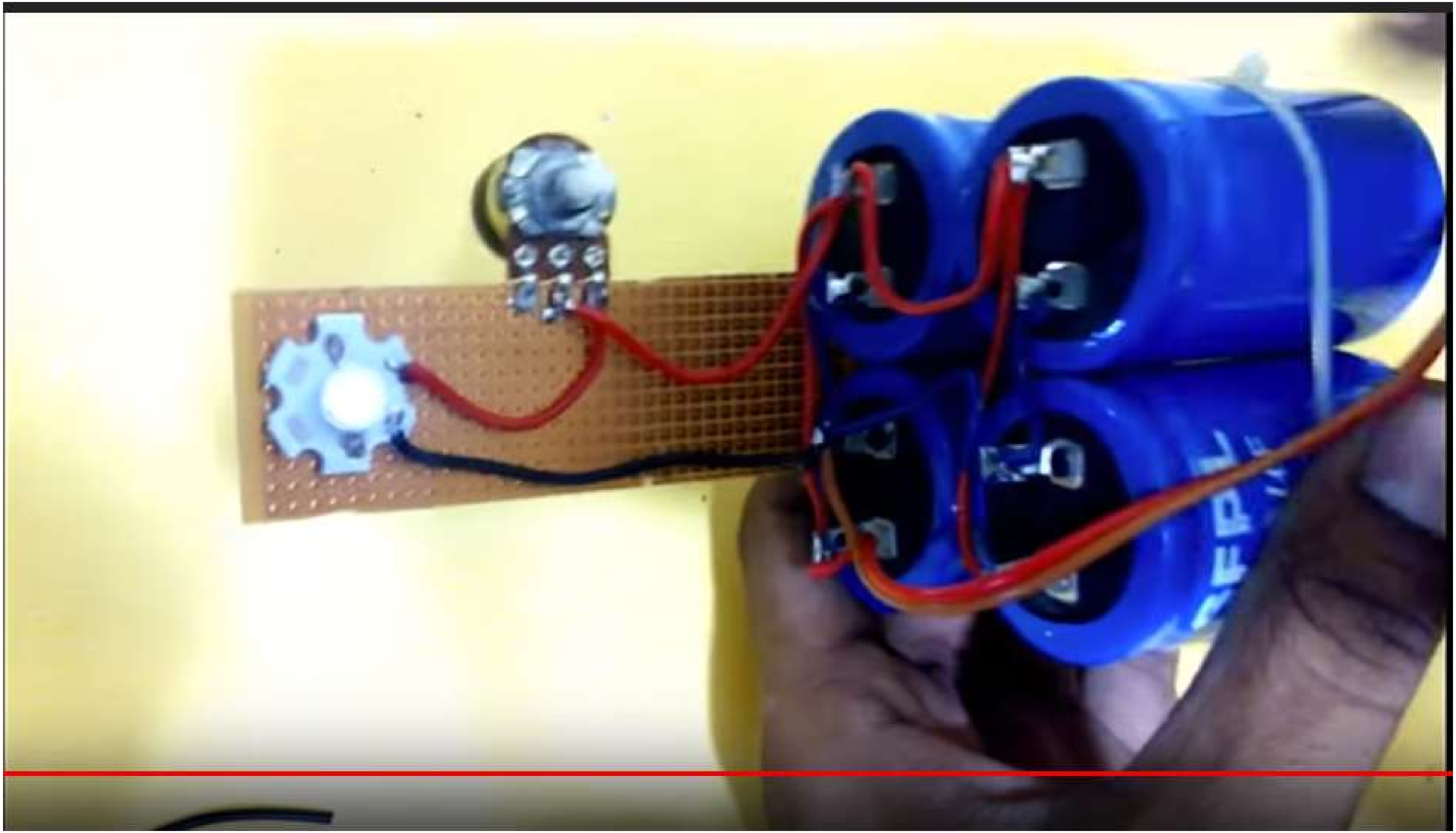


Antenna Coil
Tuning Coil
Detection Coil
Tuning capacitor
ANT
GRD
Phones/Amplifier
3:37 / 8:40
HD



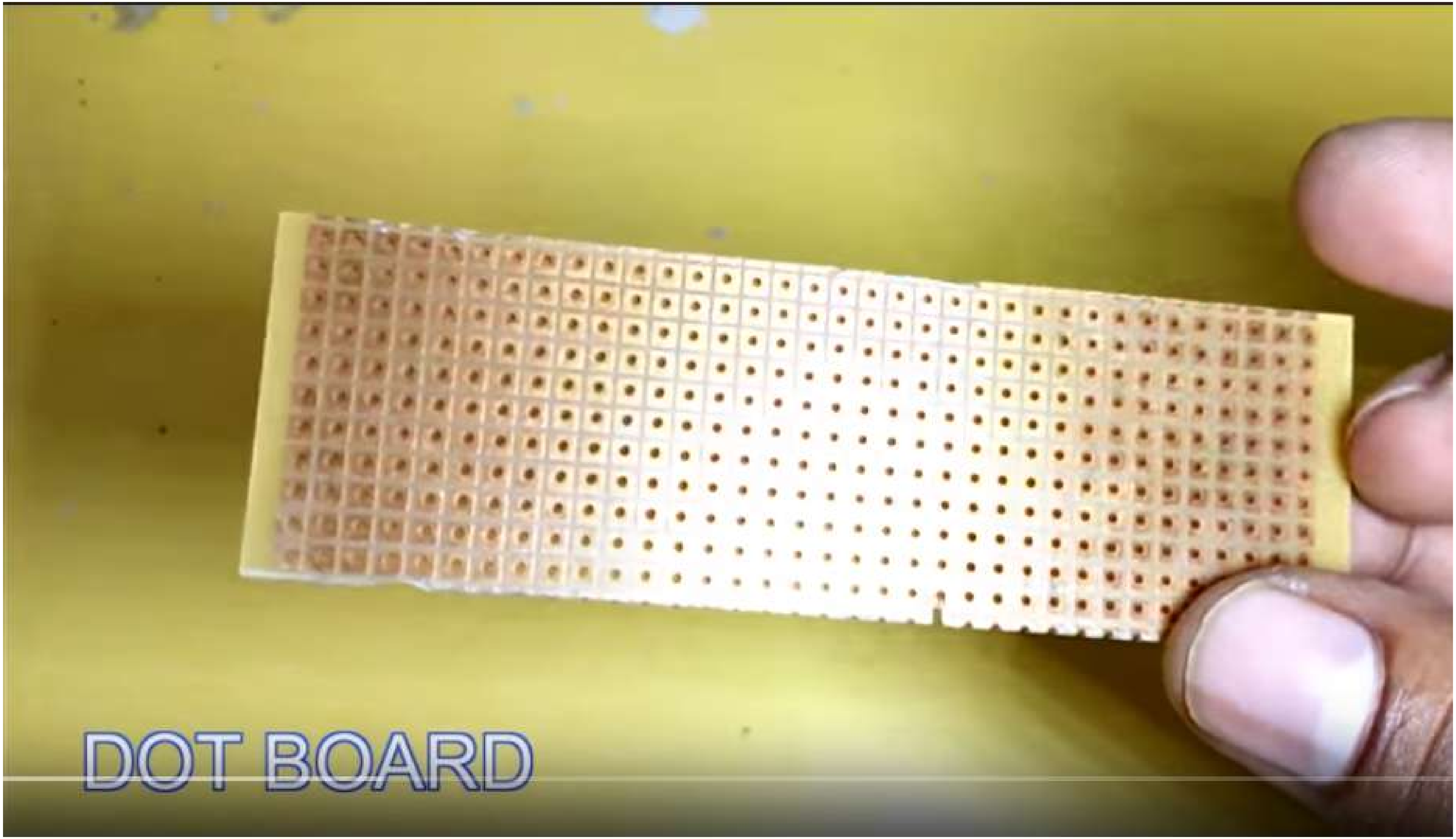

fix tip of coil end to
base with tape

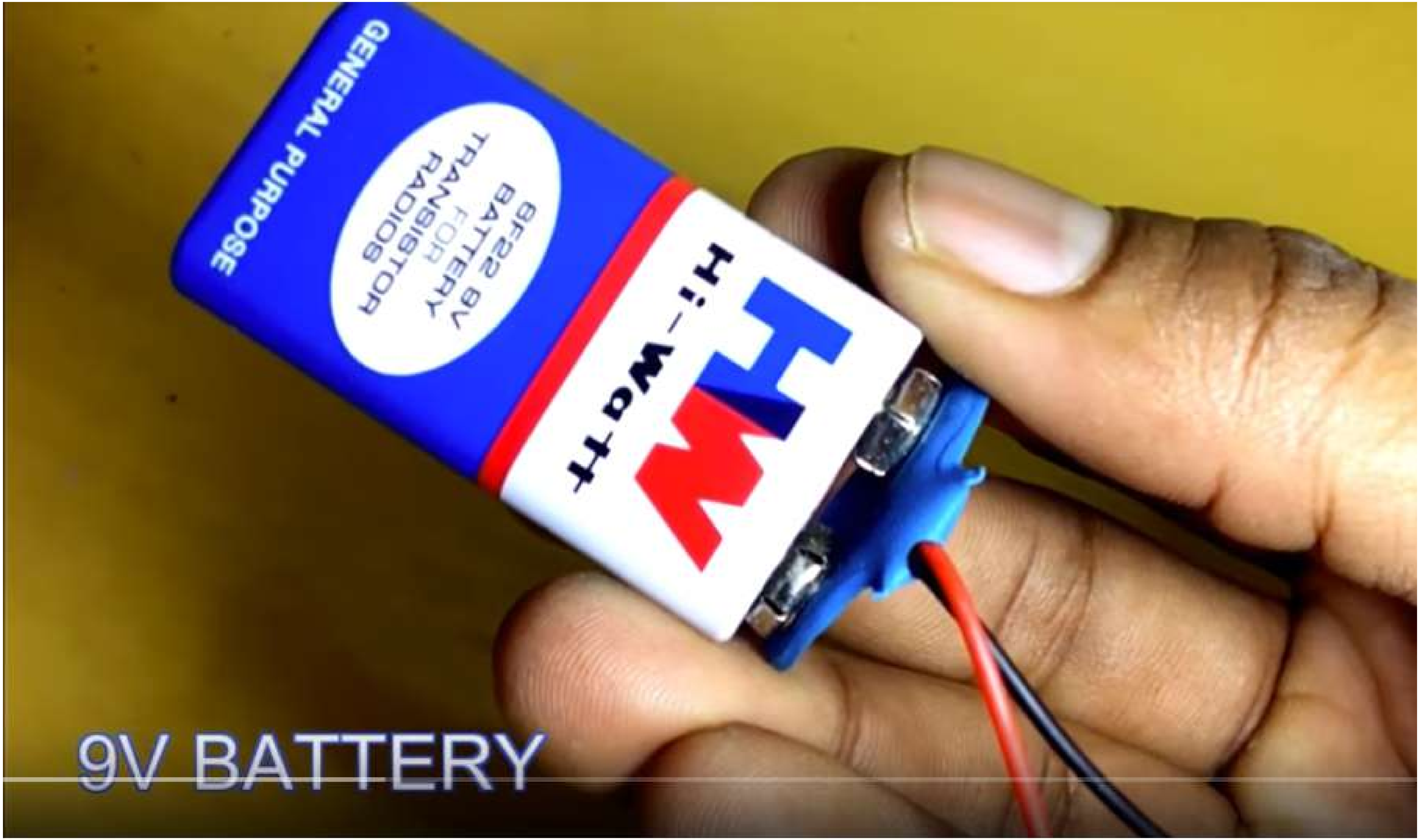

inspired by
Making a Transistor Radio
Ladybird Books
1972



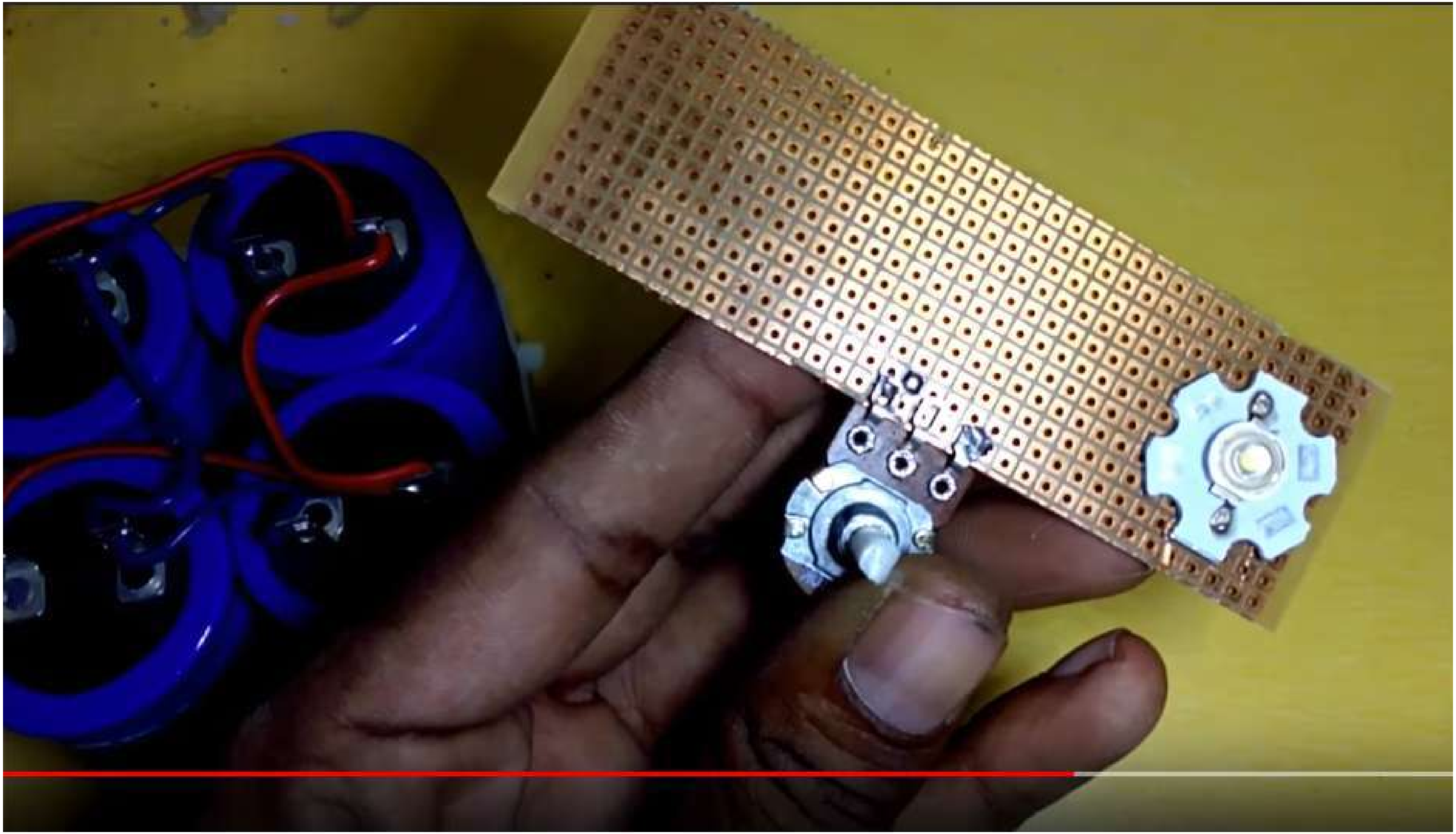

5000μF
50 vdc
105°C
-10 + 10%
(Black Neg.)
5000MFD/50V

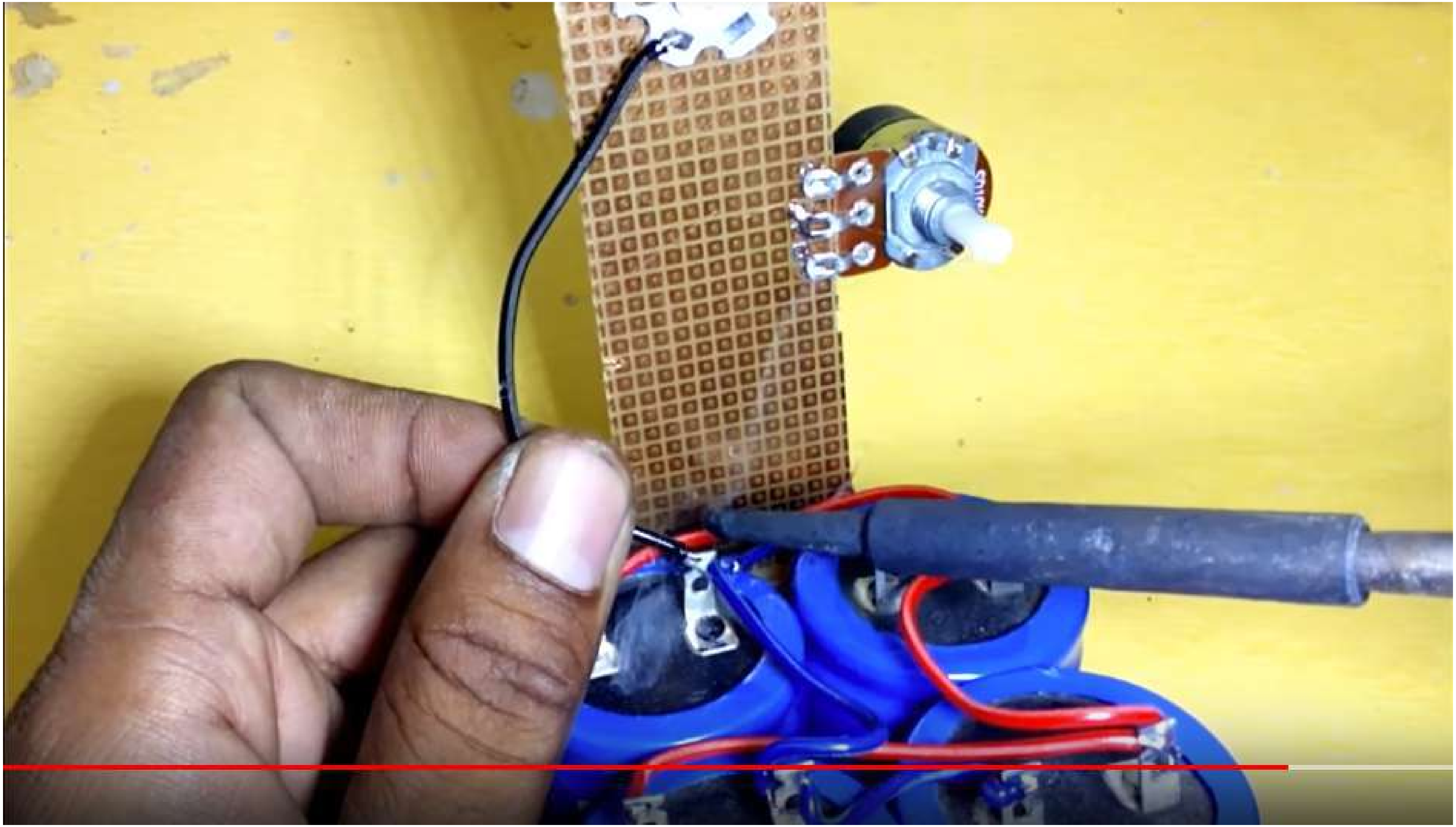

10K V.C

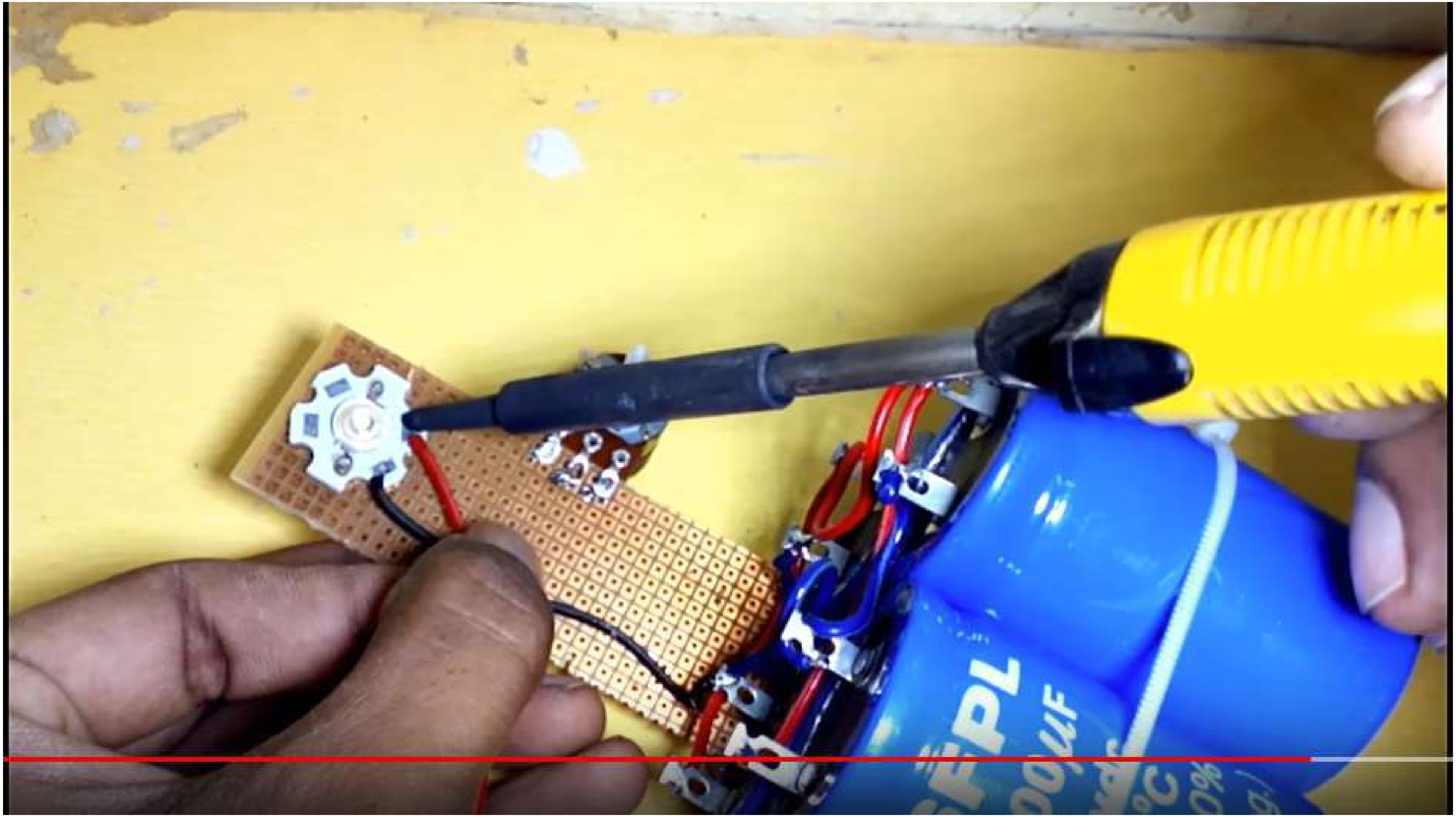

DOT BOARD

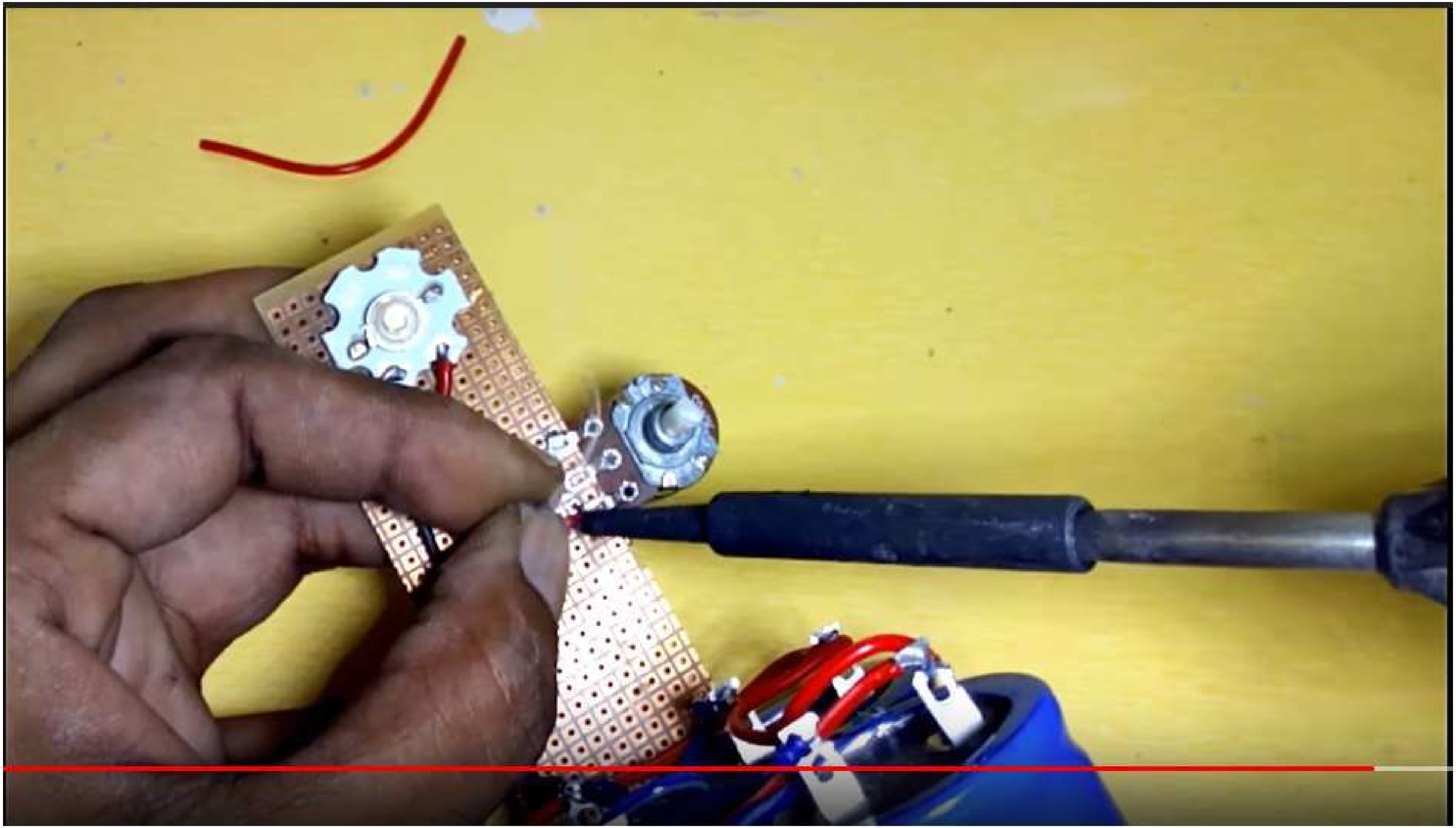

GENERAL PURPOSE
6F22 9V
BATTERY
FOR
TRANSISTOR
RADIOS
Hi-Watt
9V BATTERY

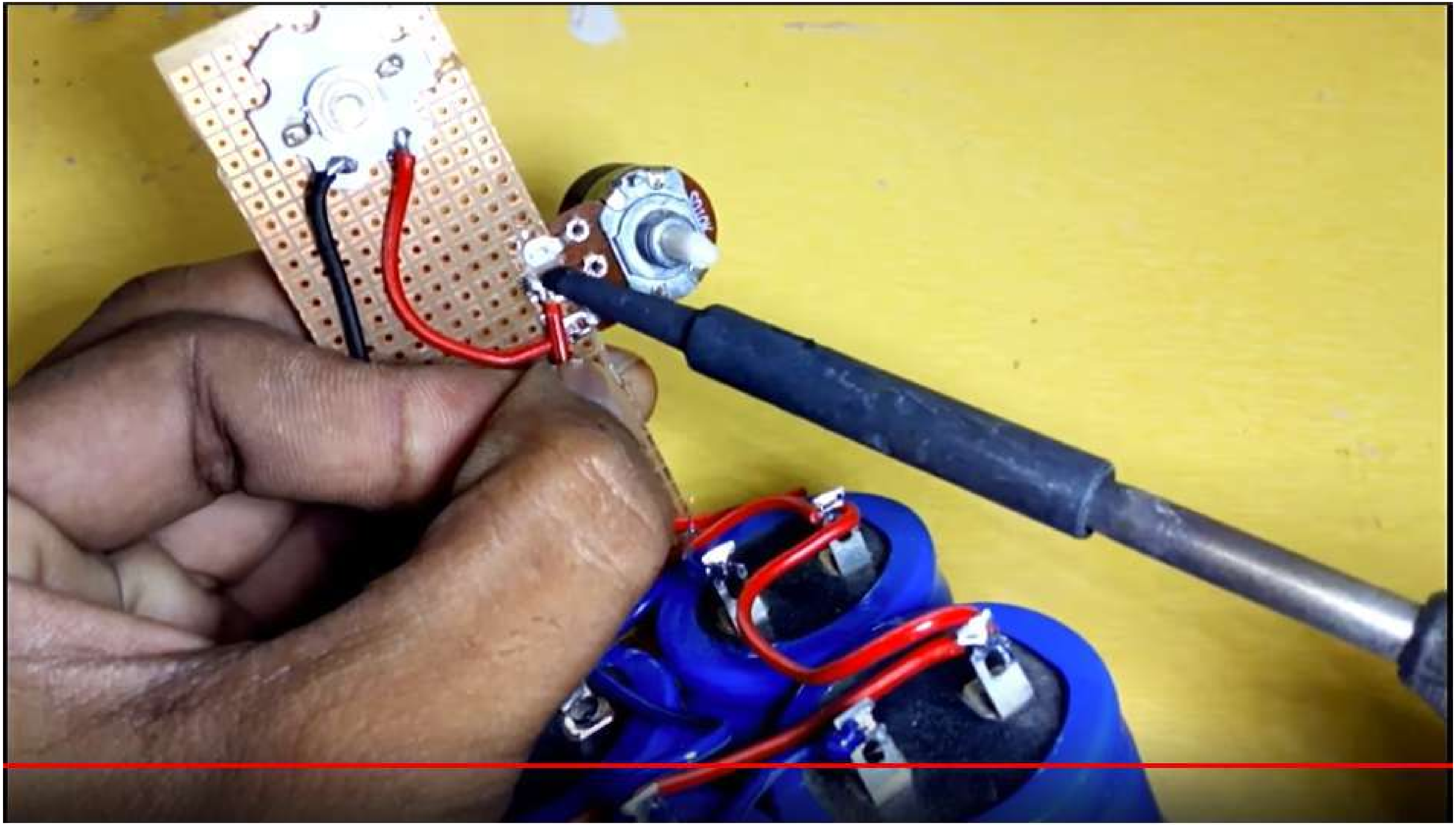

3V LED

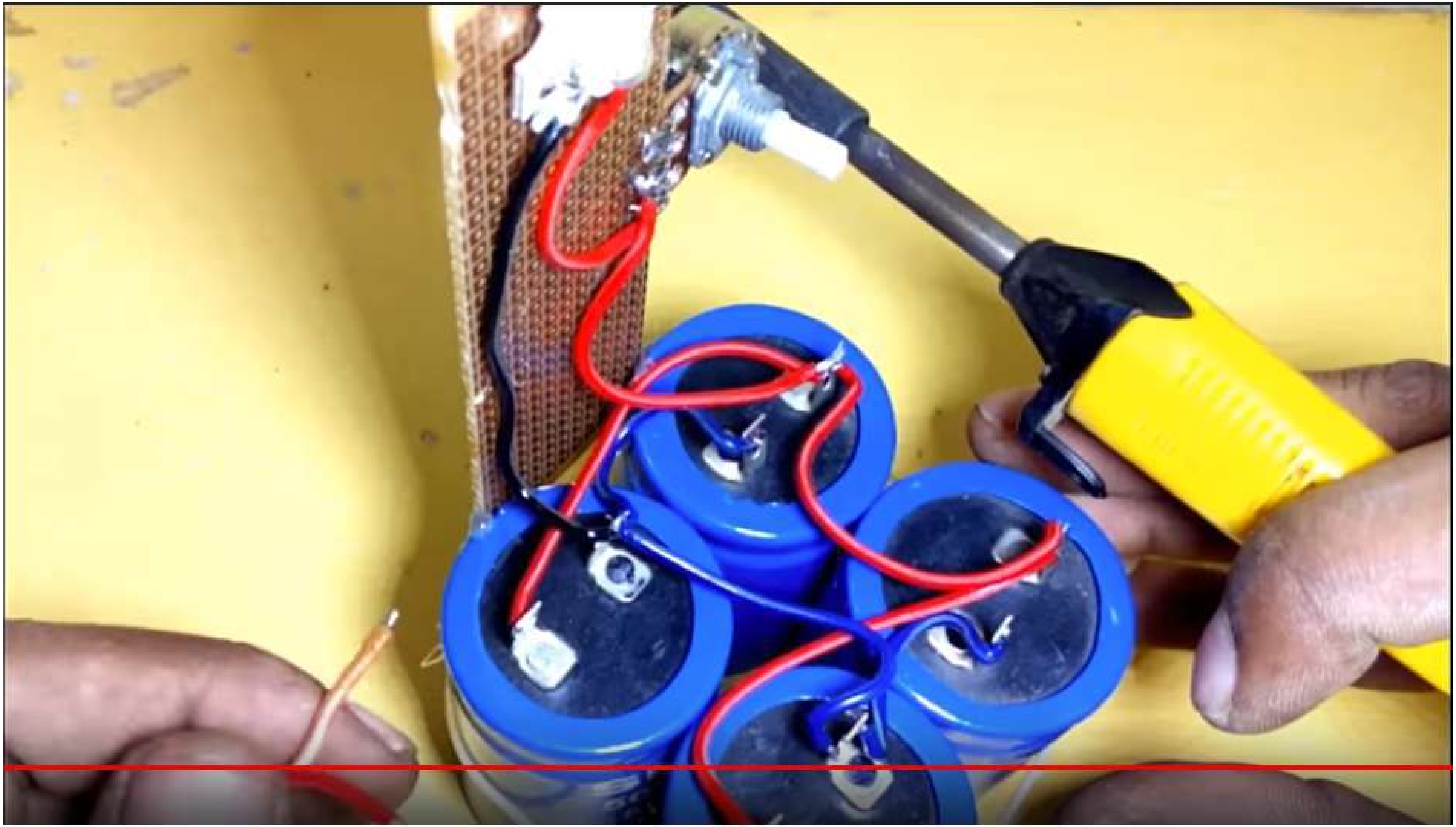


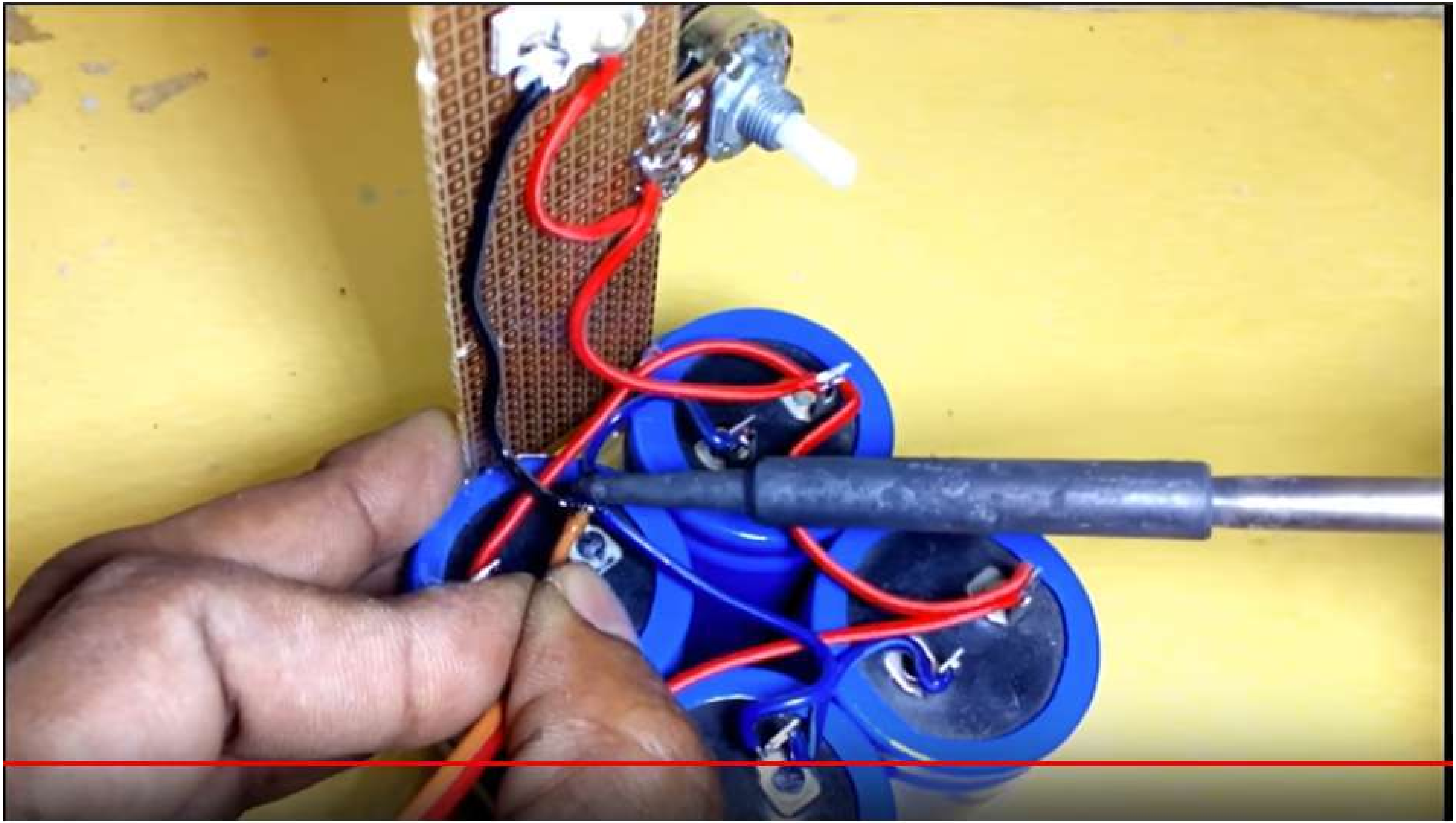


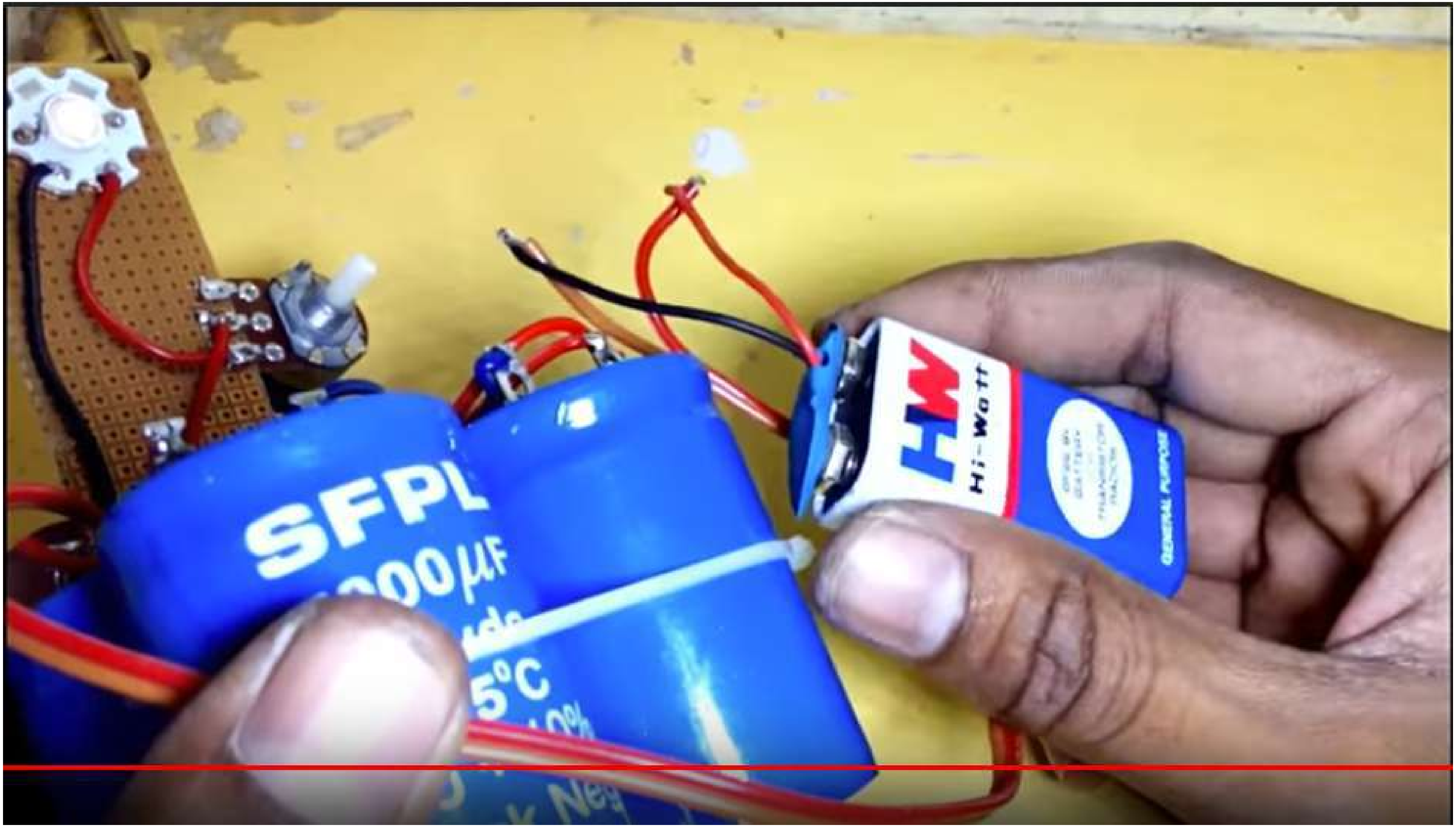


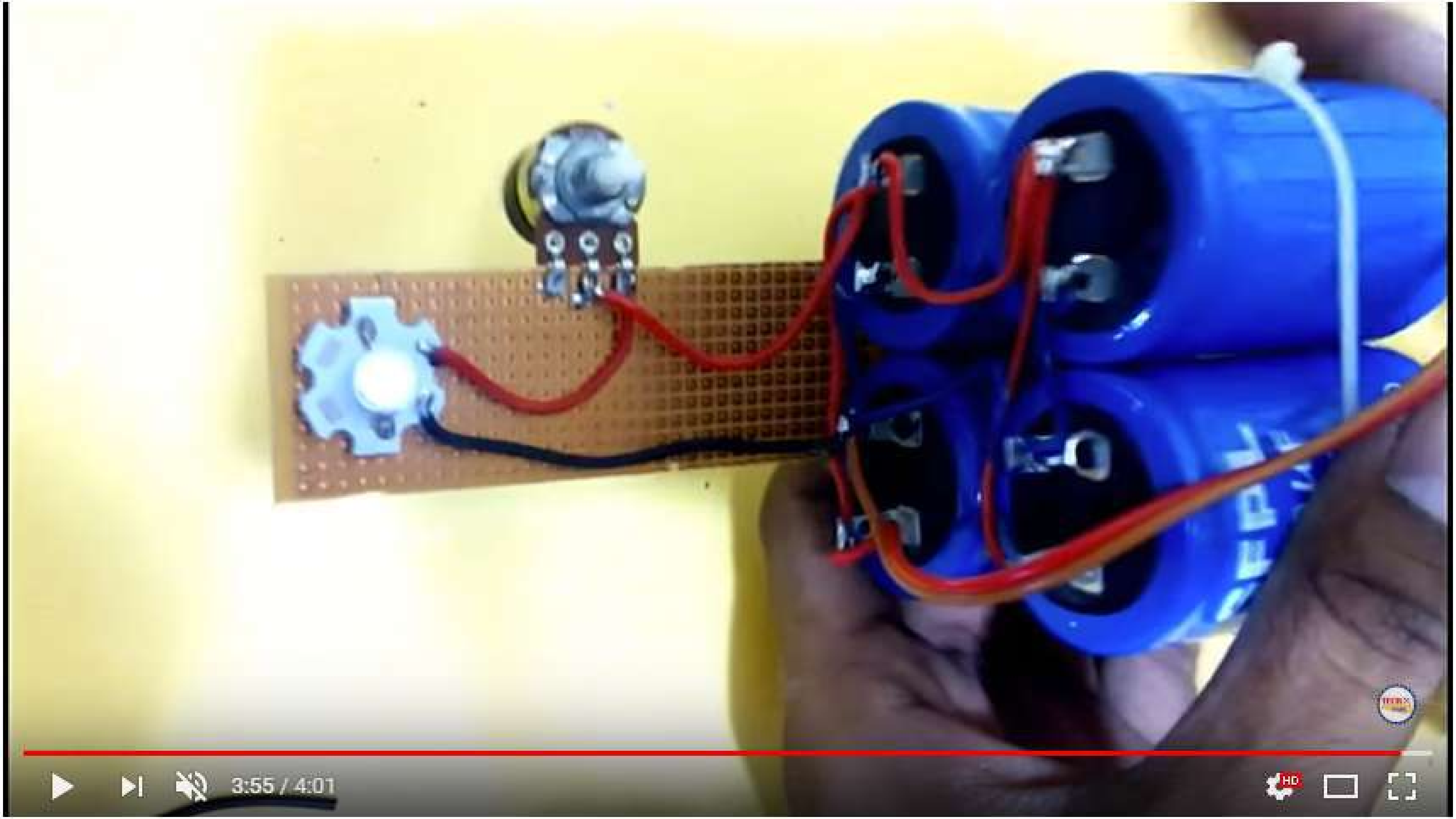




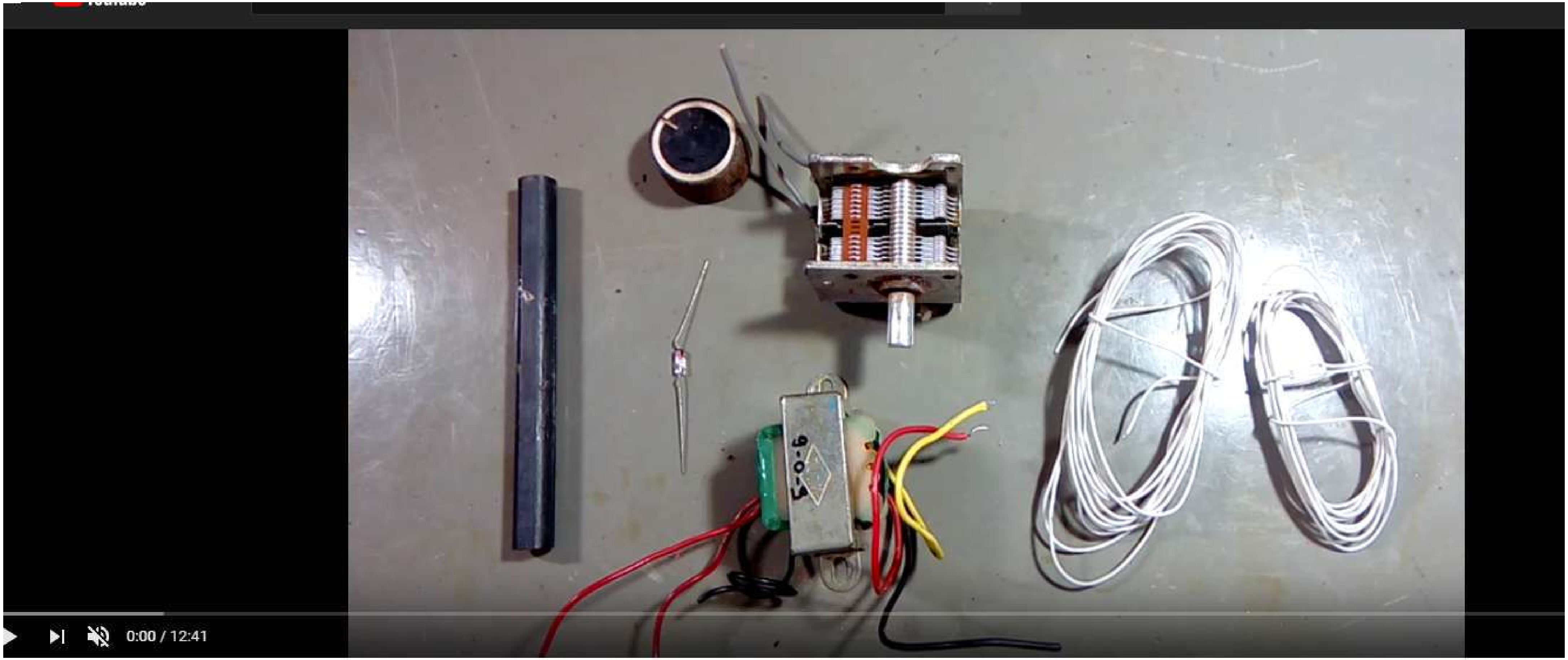




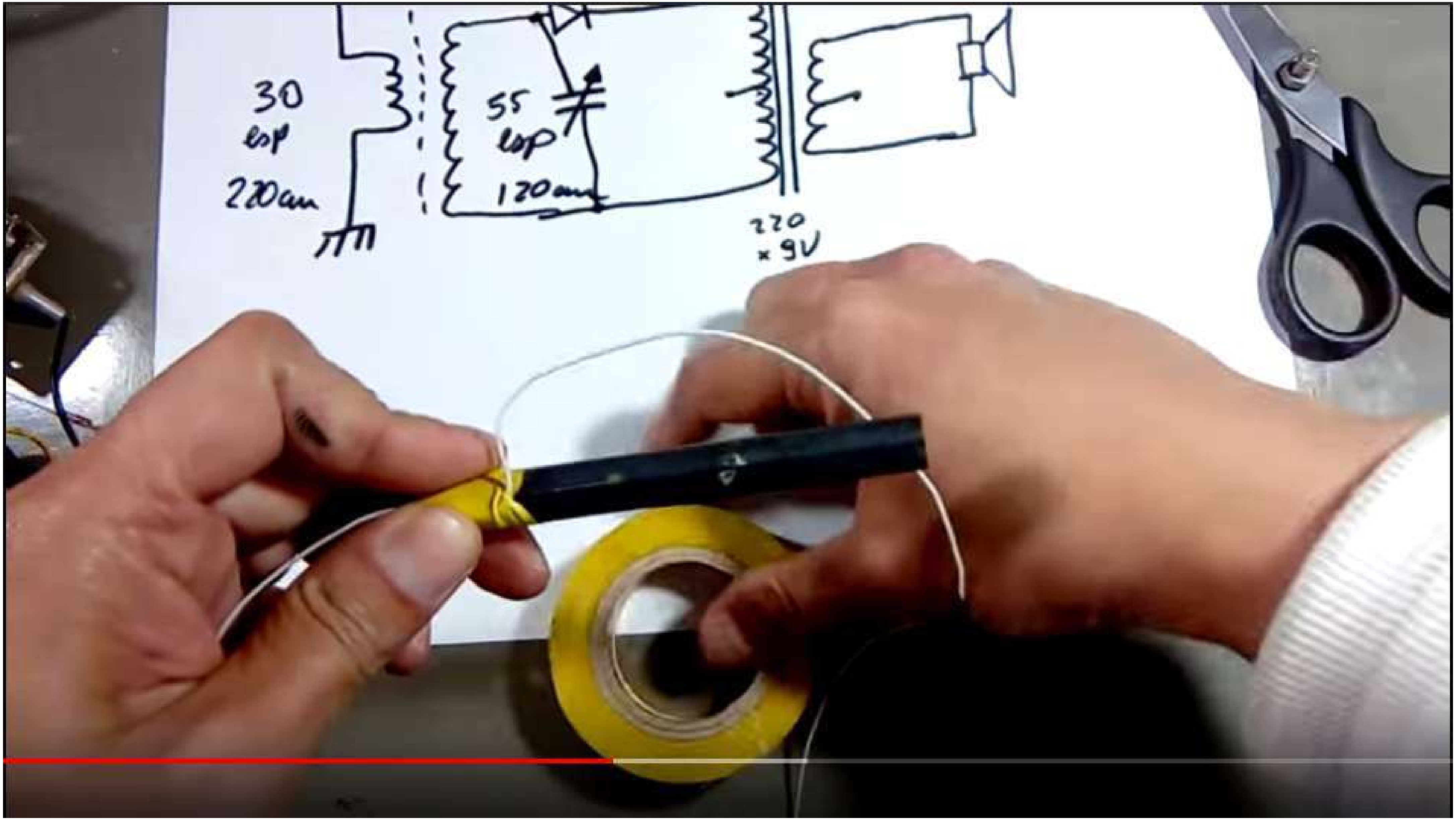

SFPL
Hi-Watt

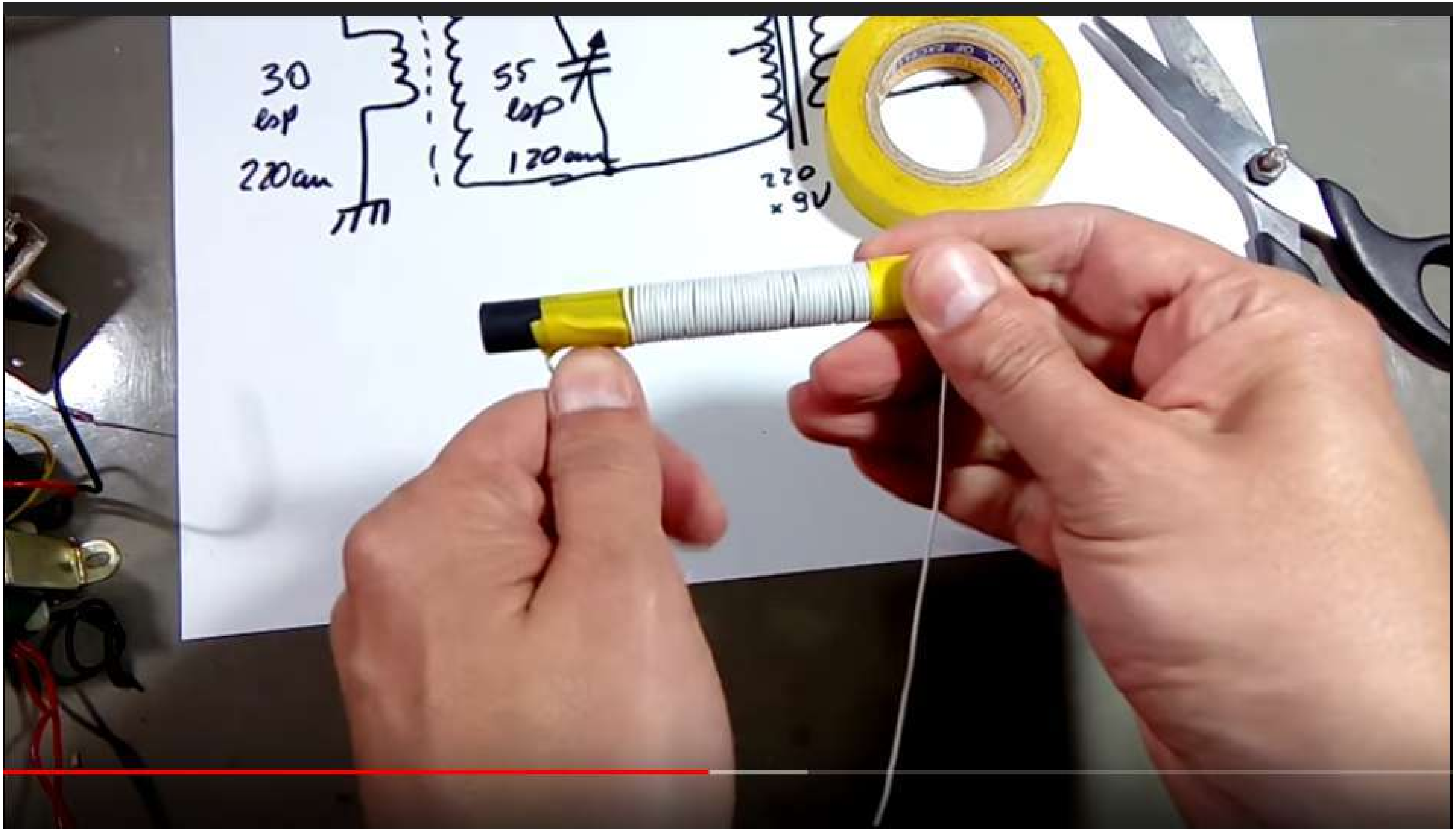


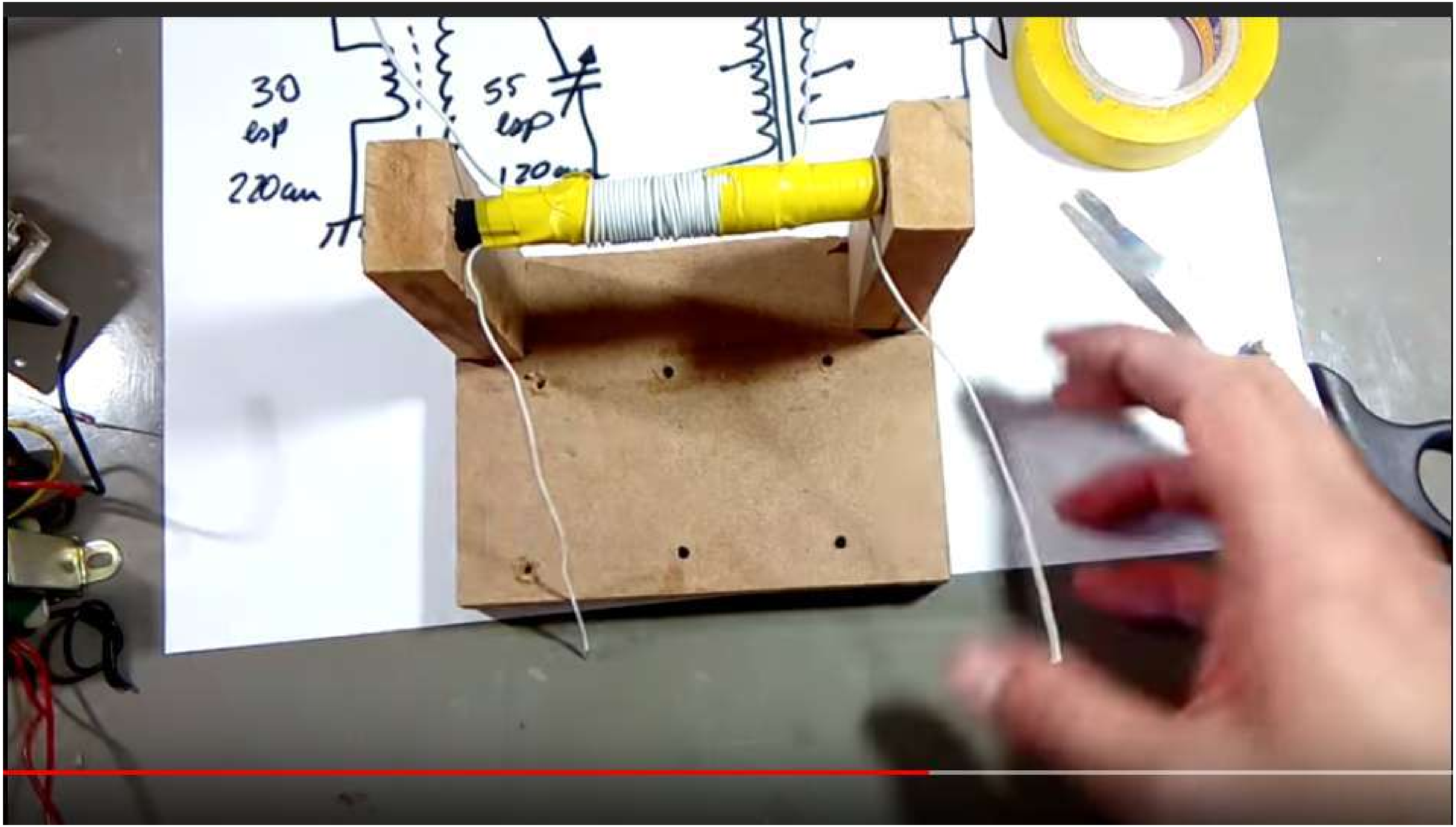
Real free energy using capacitor 1000% working

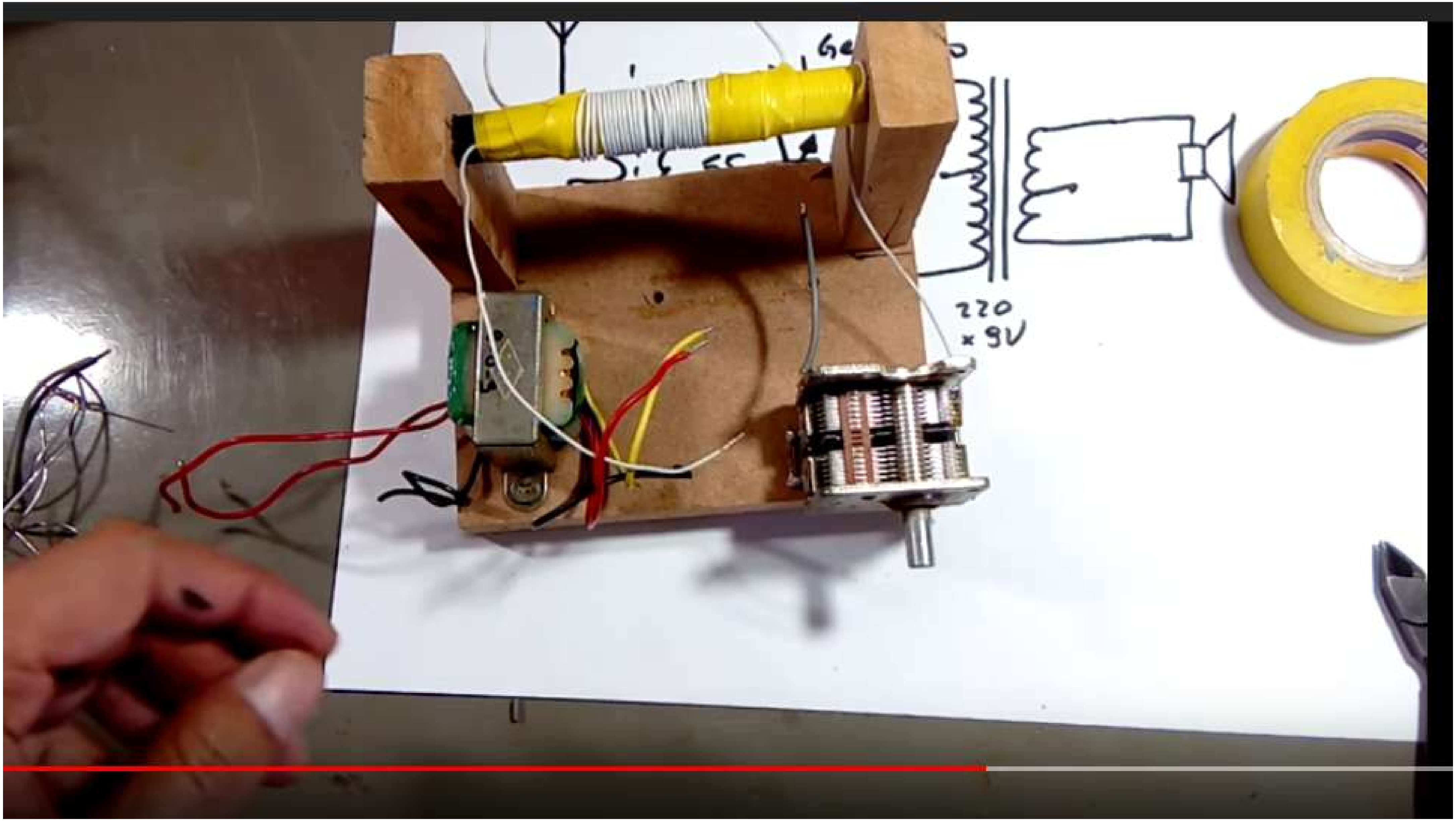


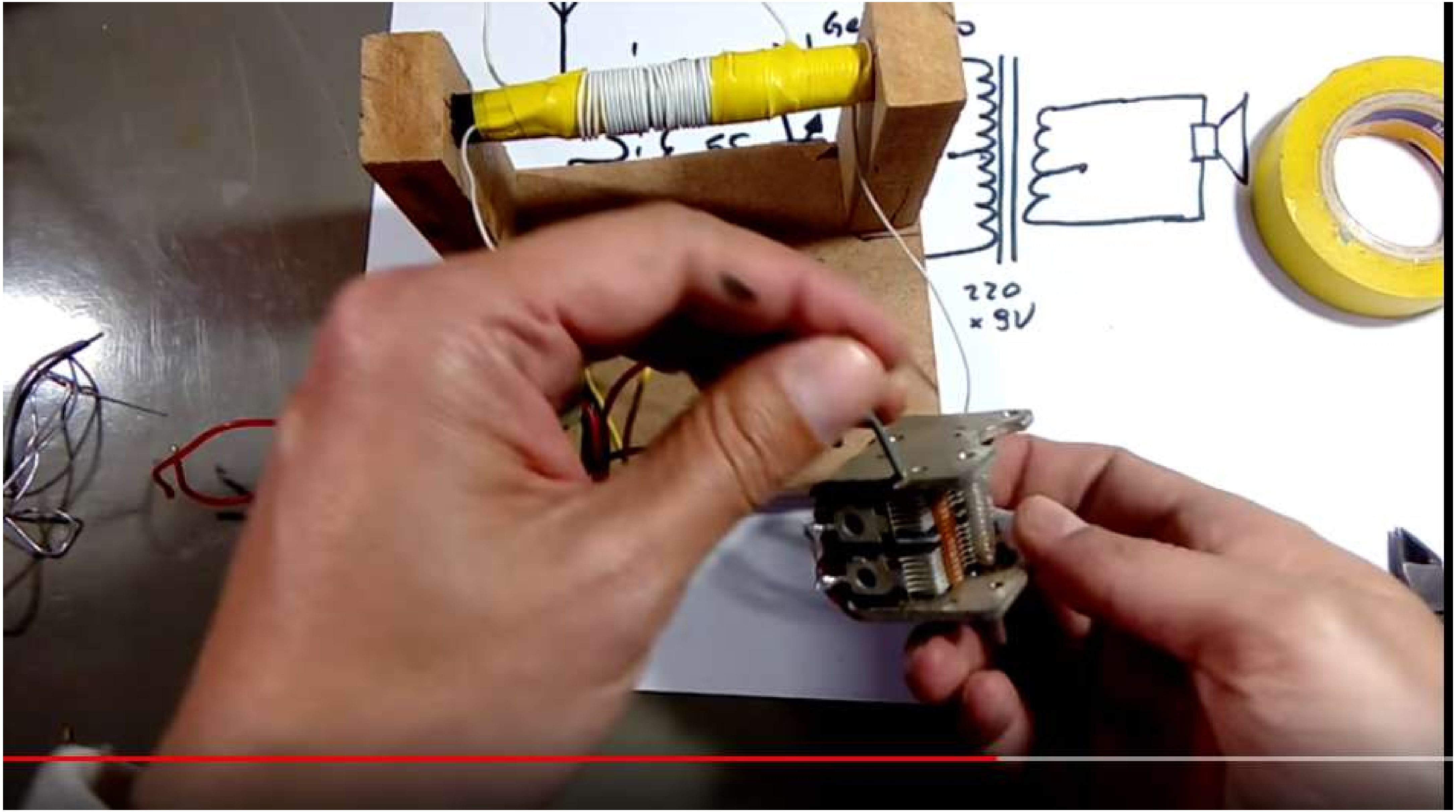
Montagem de um rádio AM a cristal de Germânio

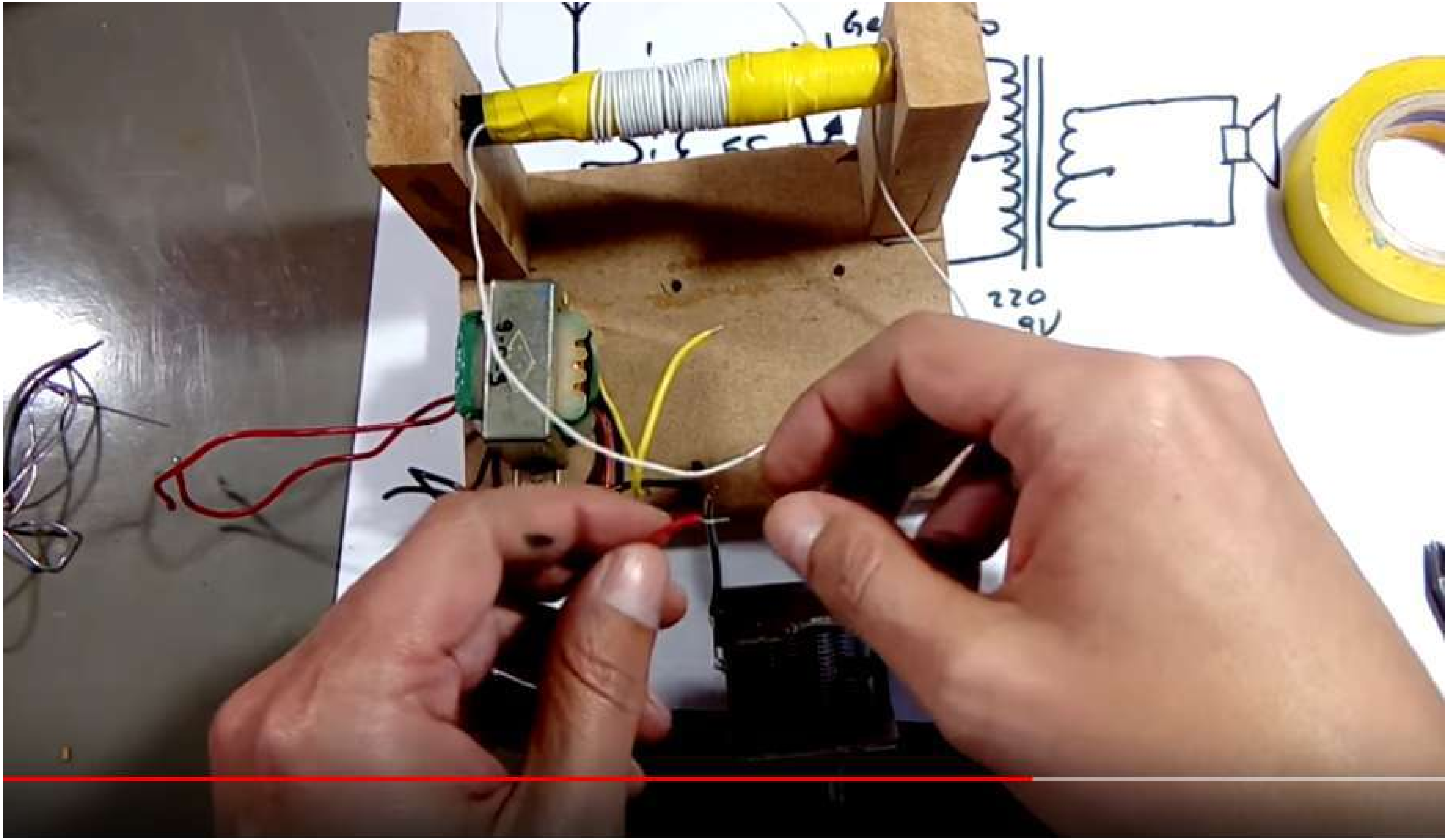

30
esp
220cm
55
esp
120cm
220
x 9V

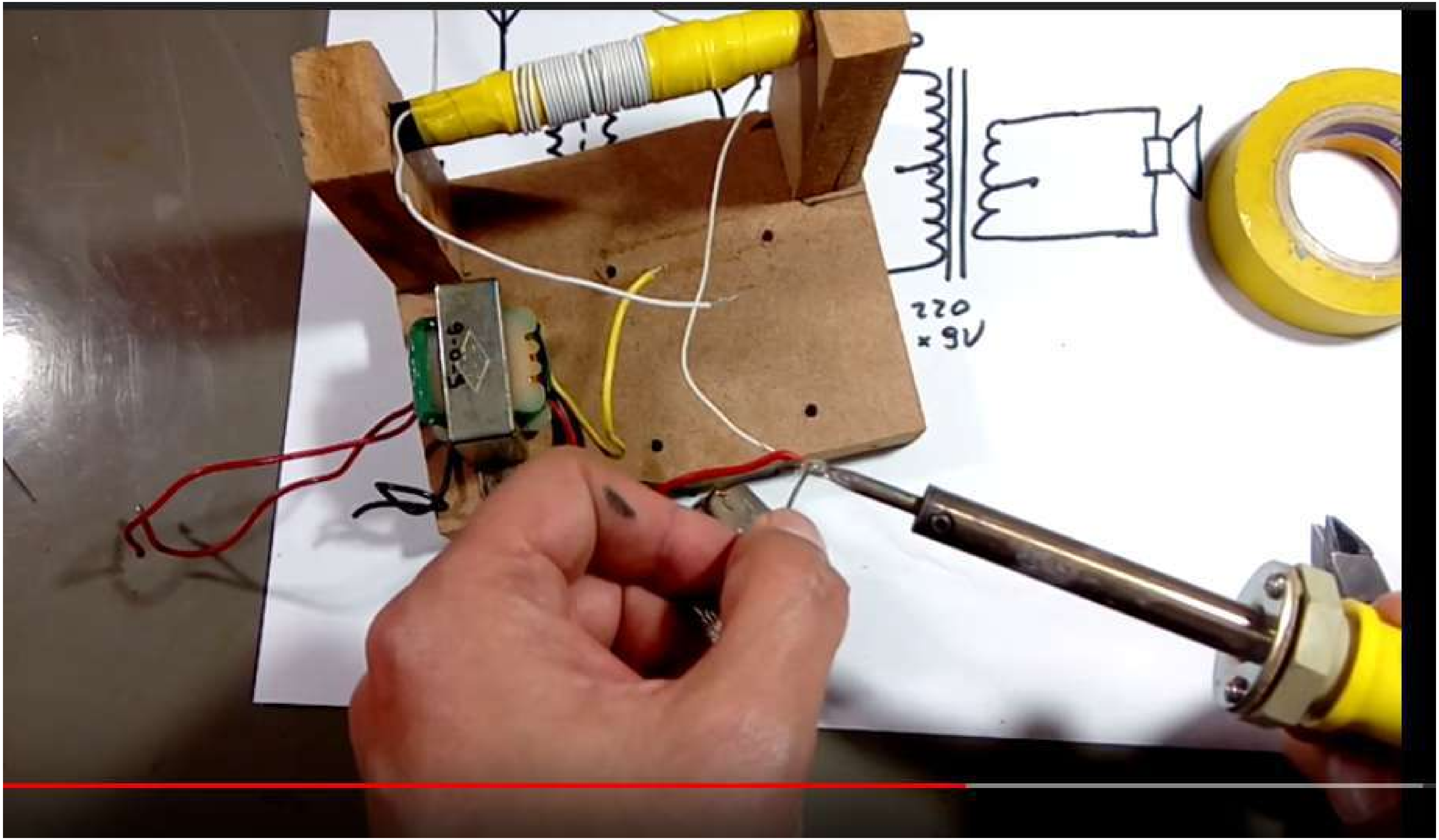

30
esp
220 cm
55
esp
120 cm
220
x 9V


30
esp
220cm
55
esp
120cm

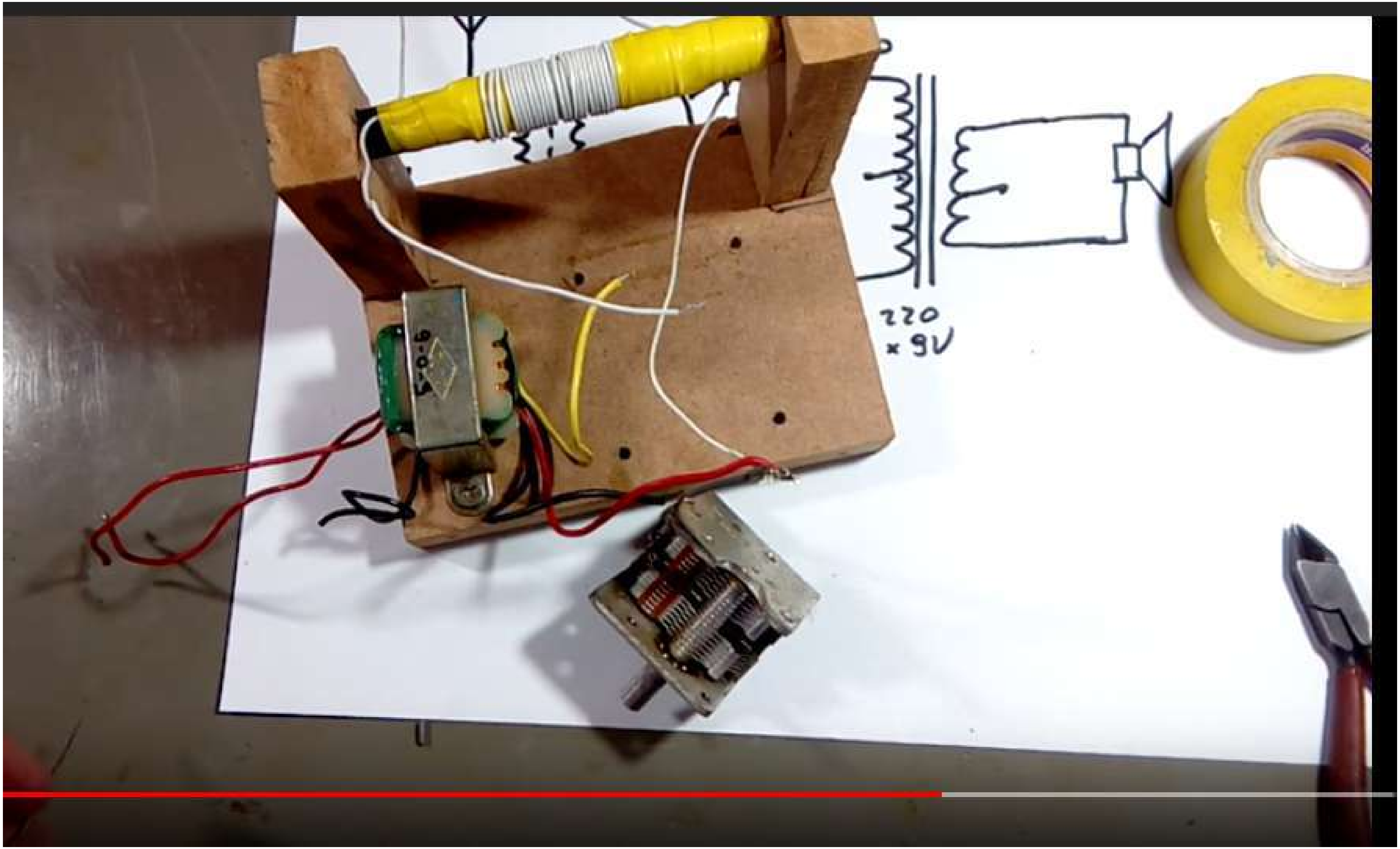

220
x 9V

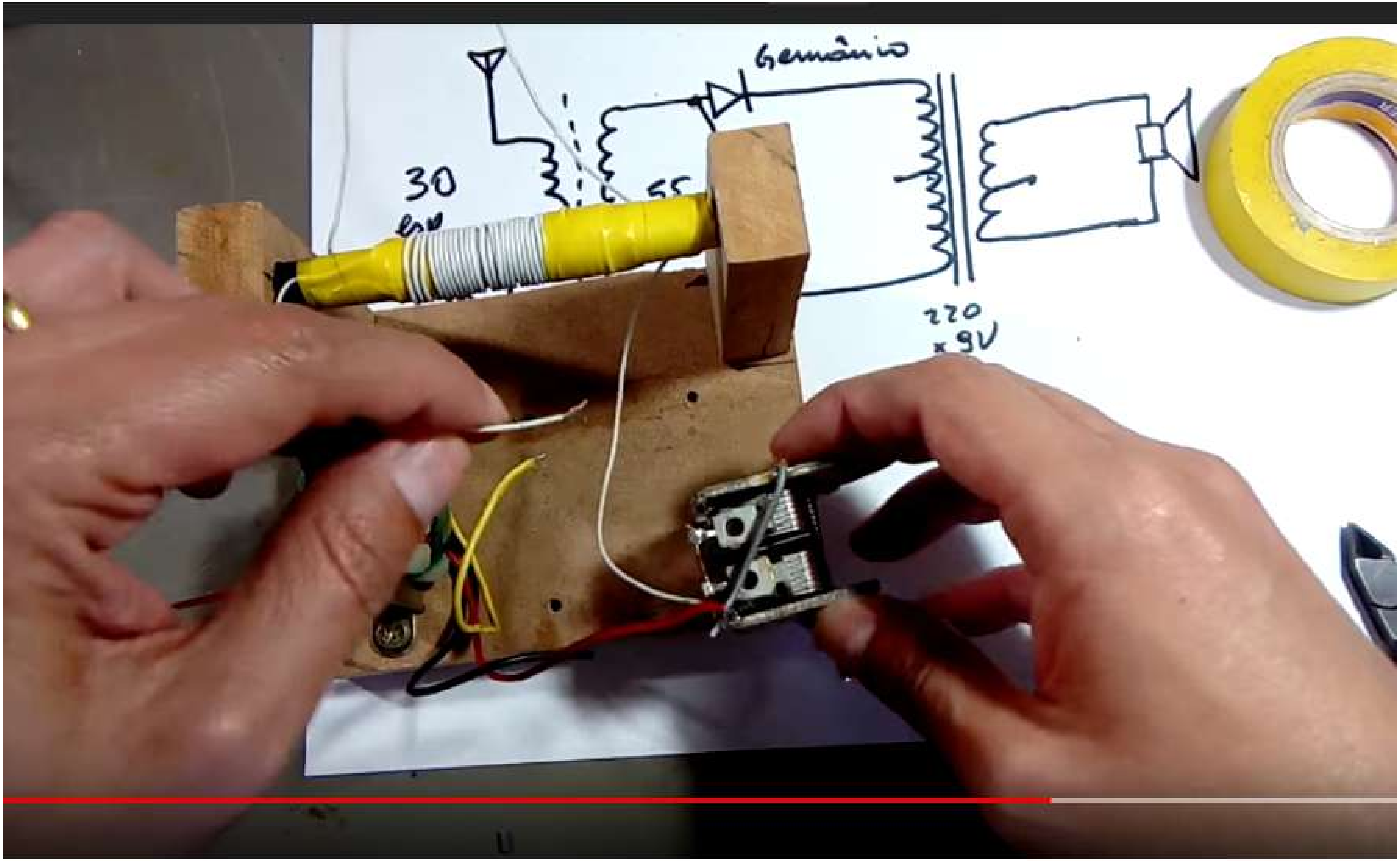

220
x 9V

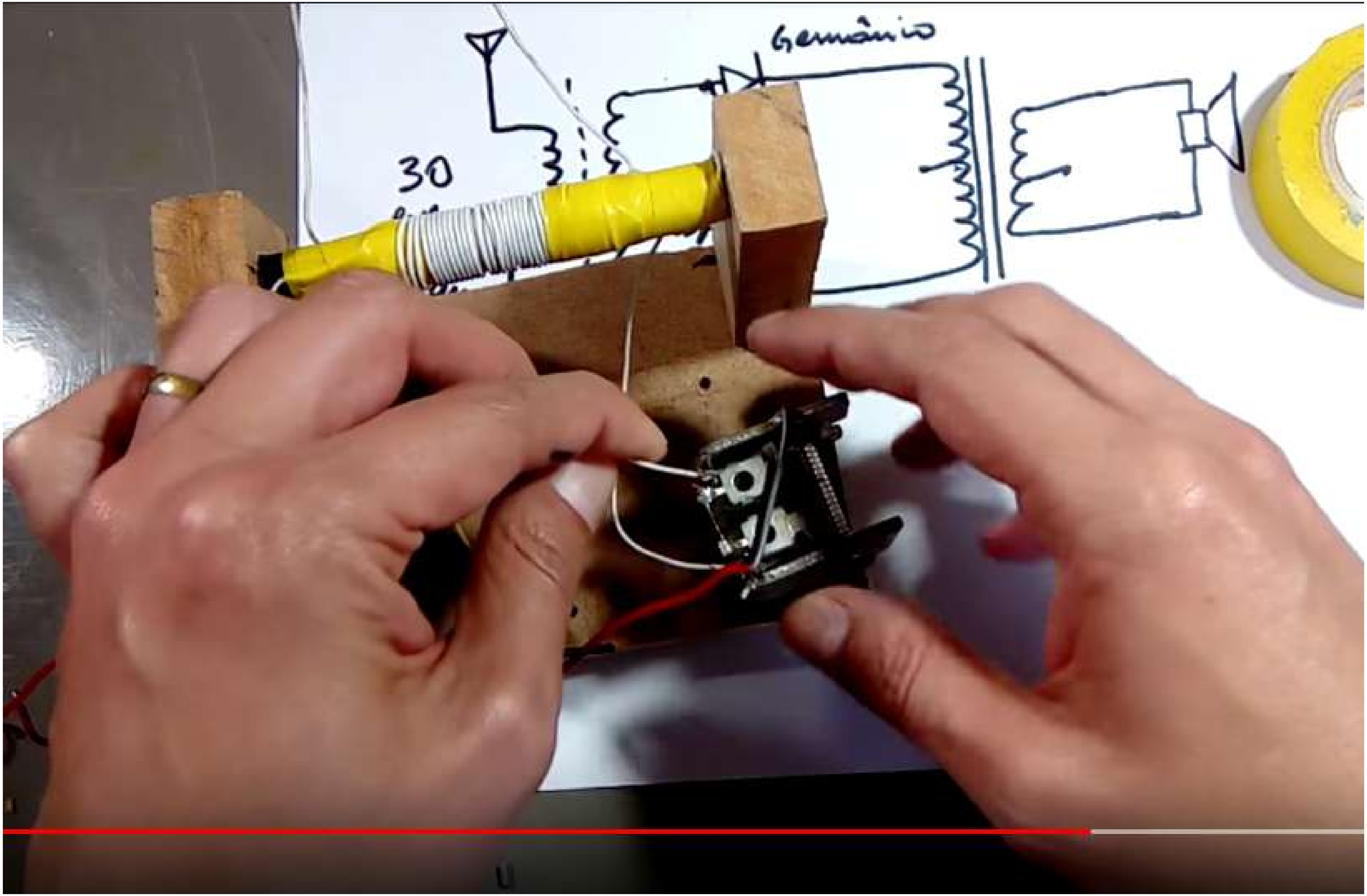

220
9V



220
x 9V


9-0-9
220
x 9V


Germânio
30
220
x9V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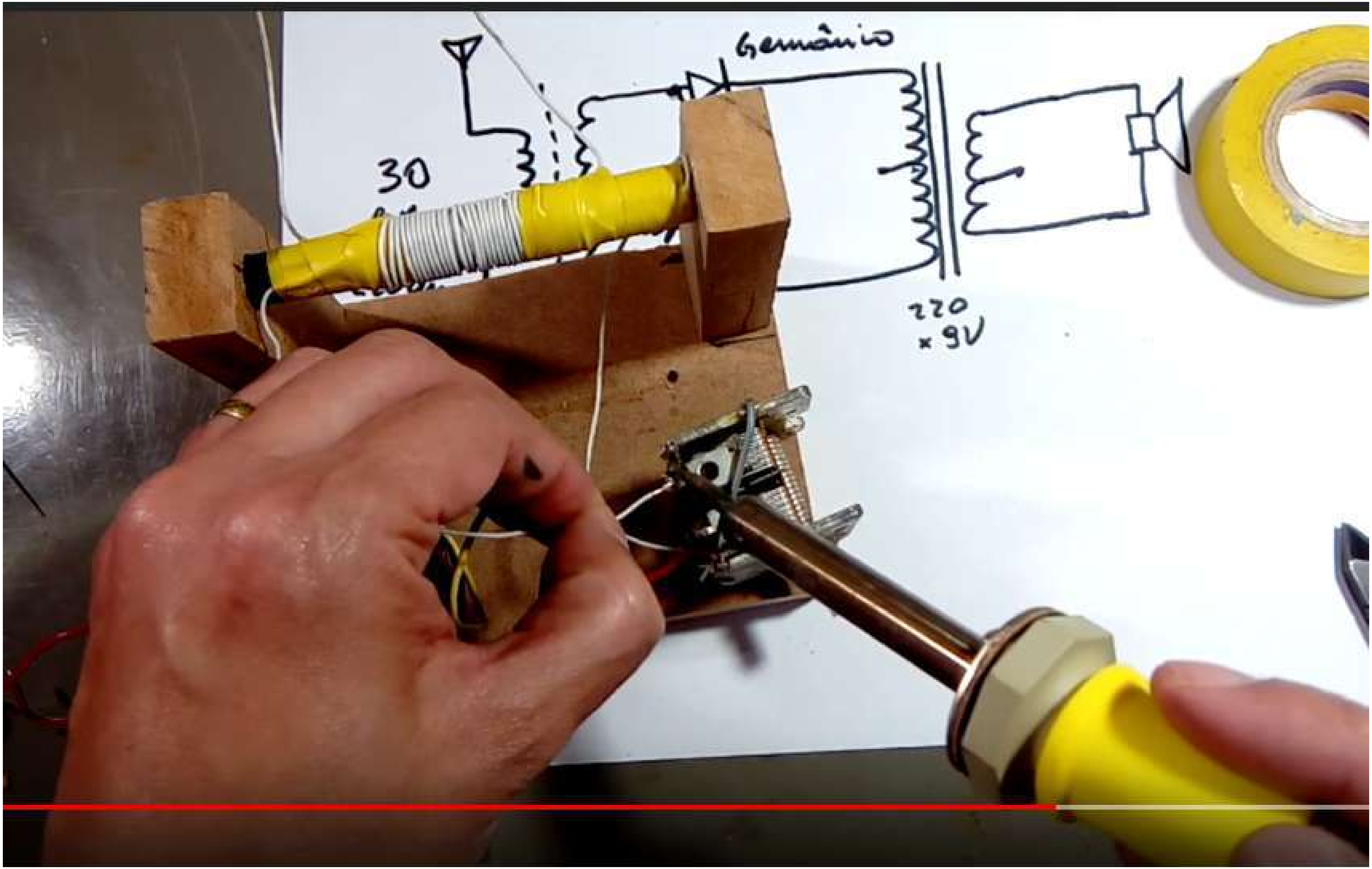
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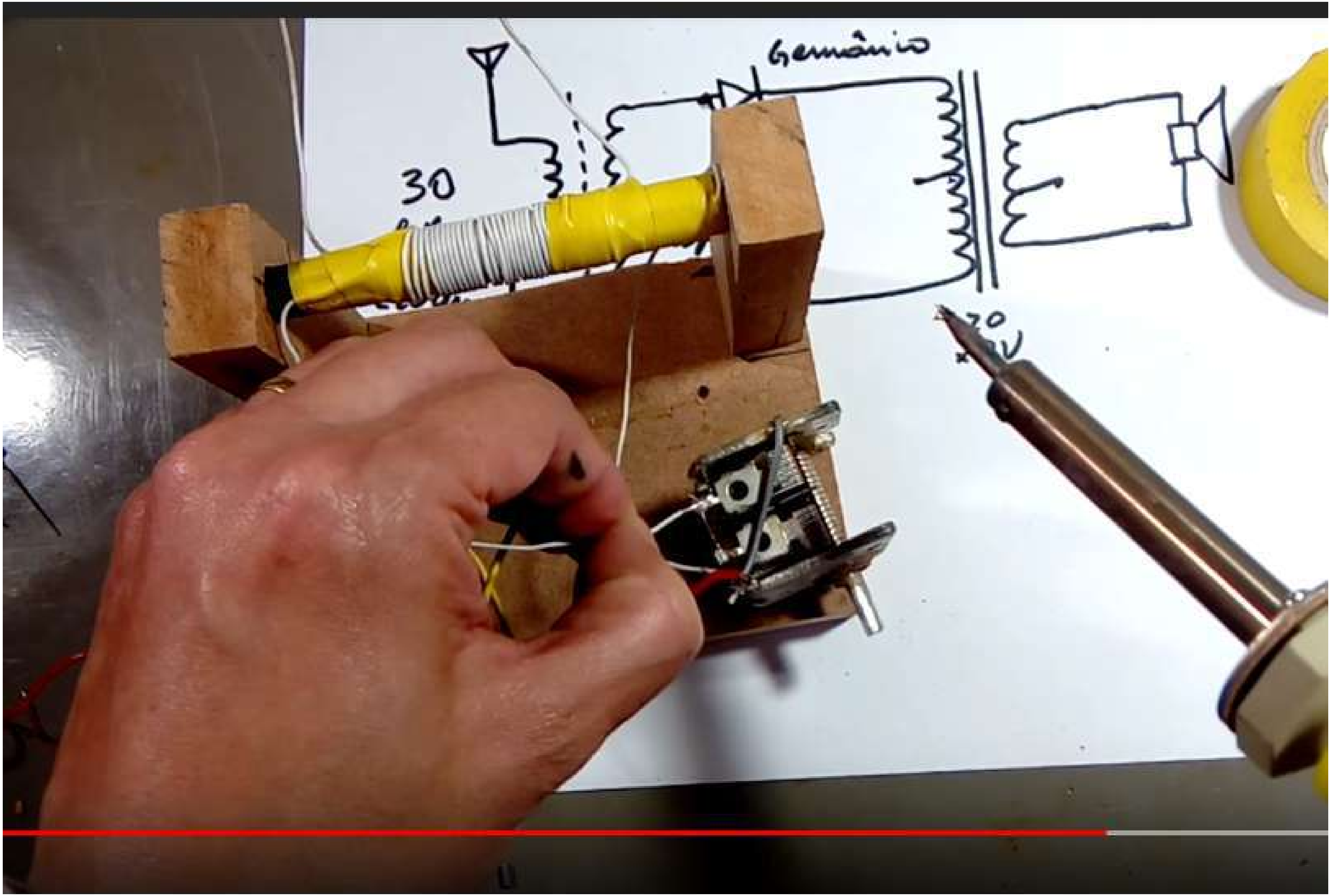
30
220
x 9V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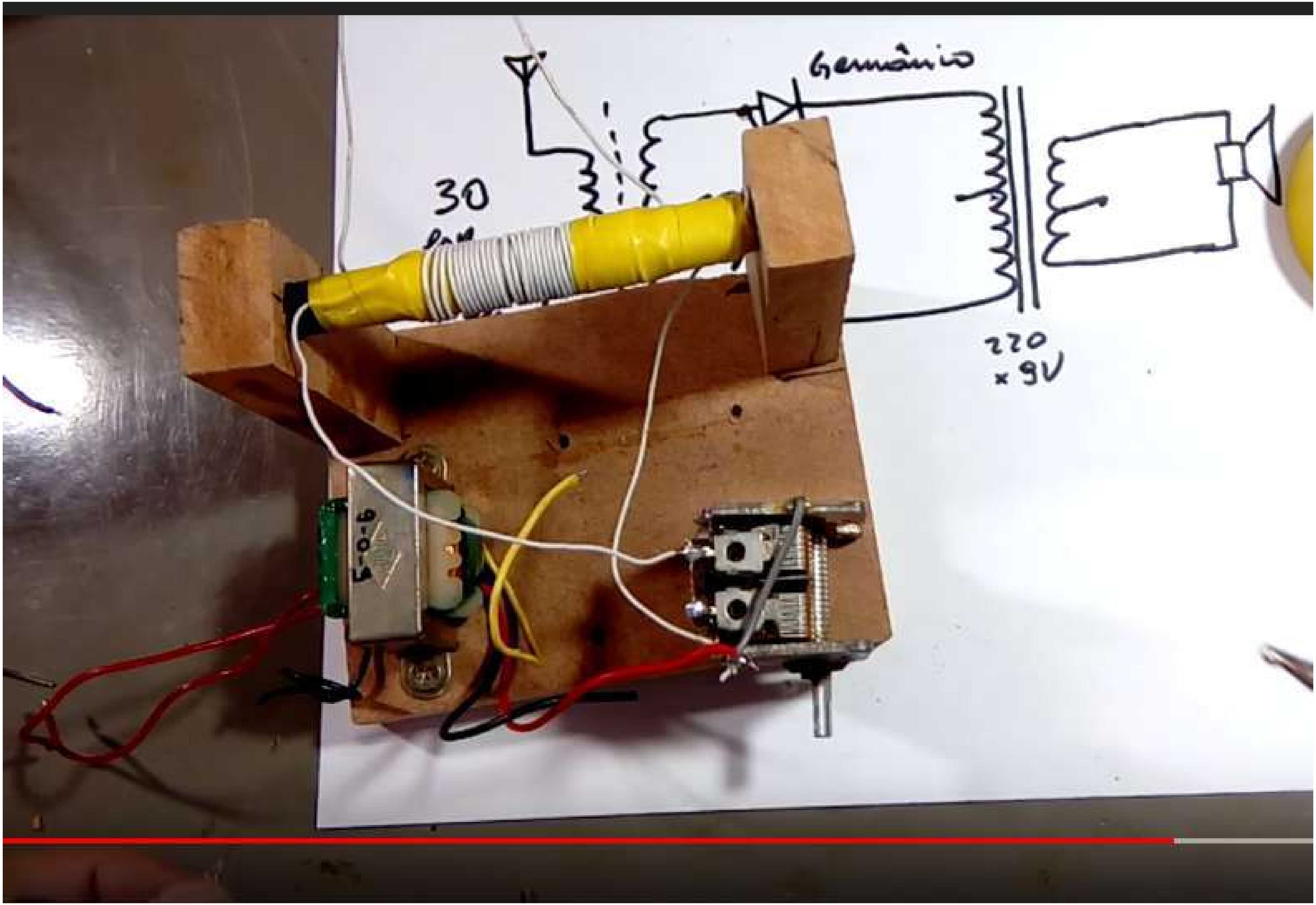
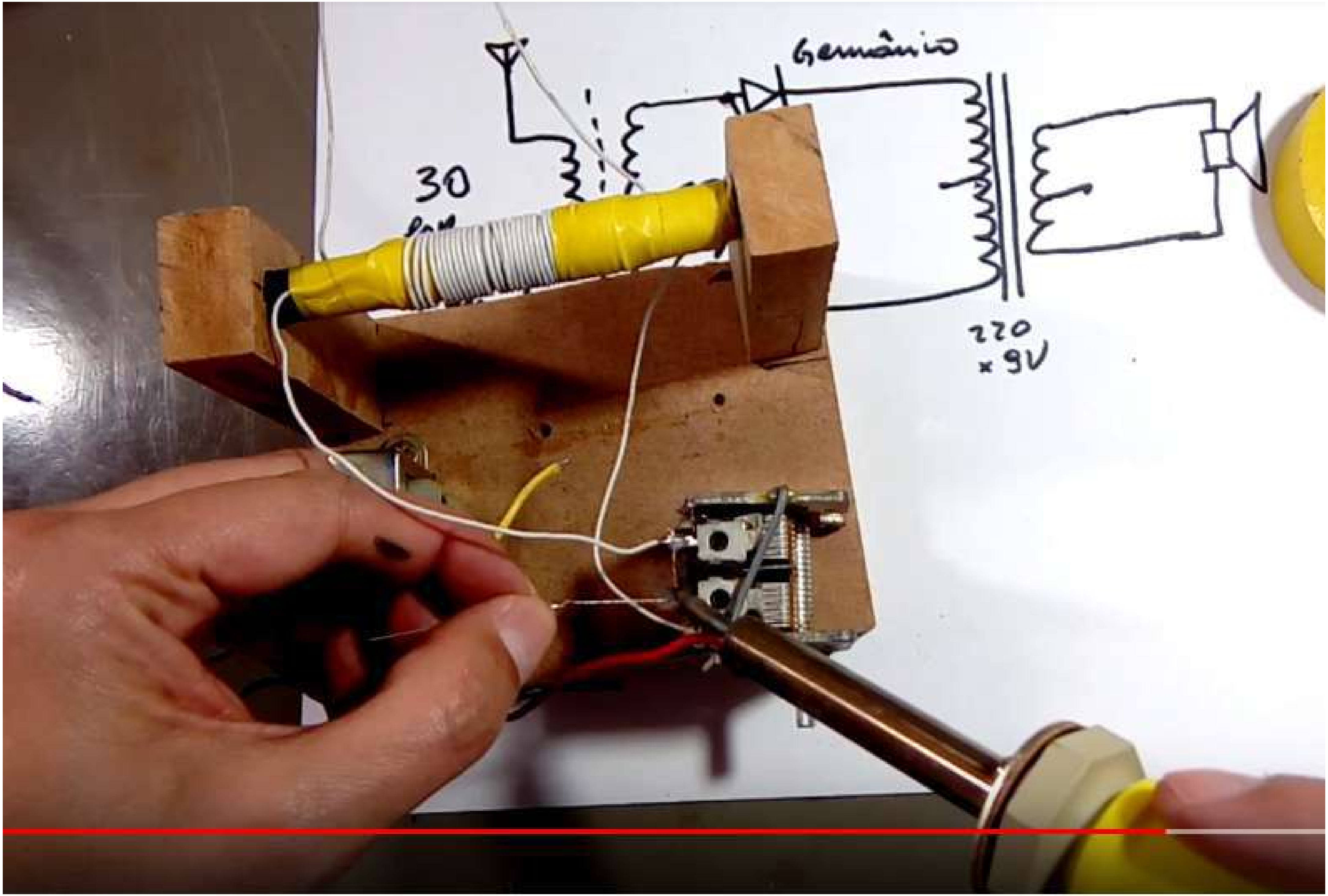
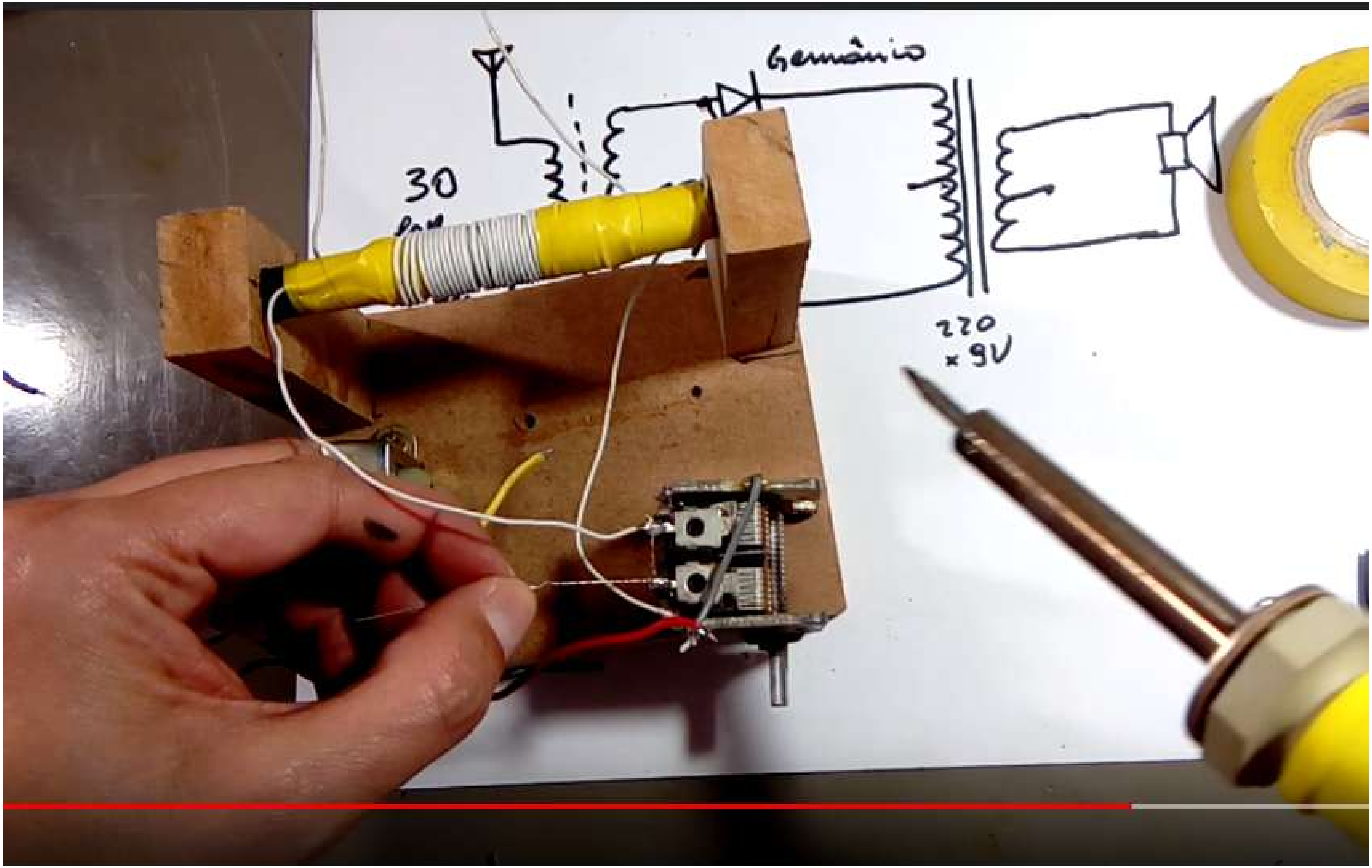


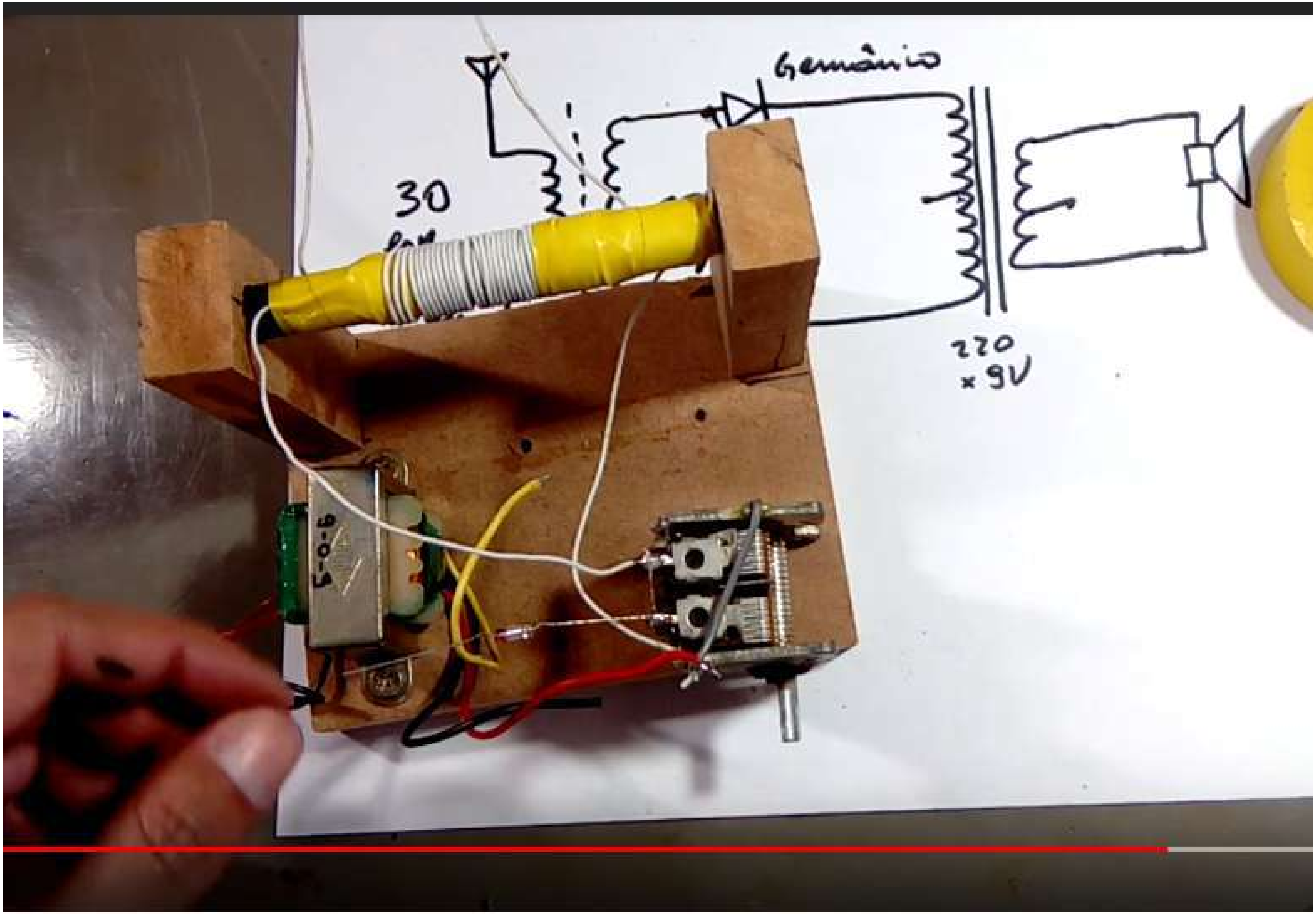
Germânio
30
220
x 9V

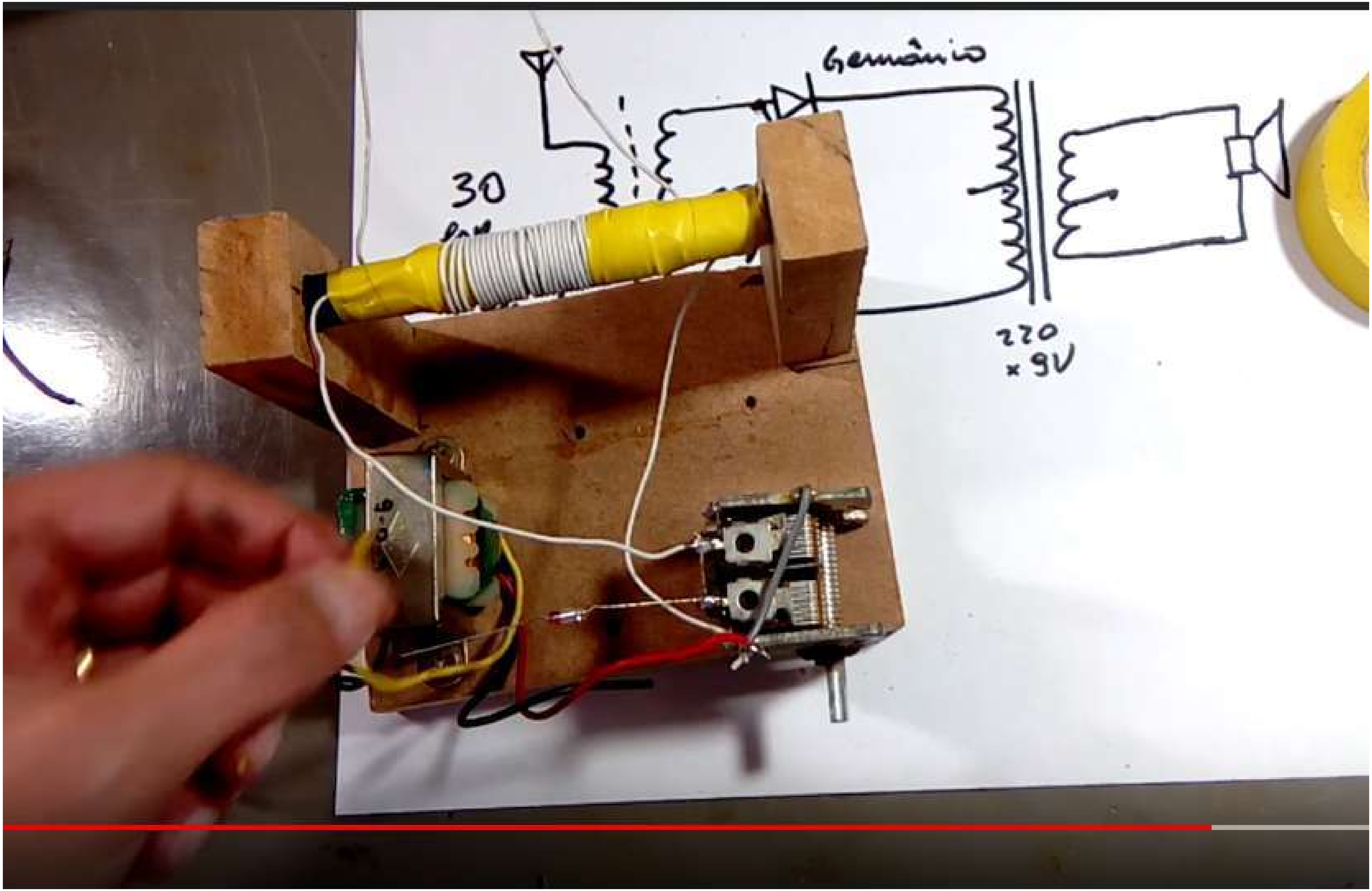


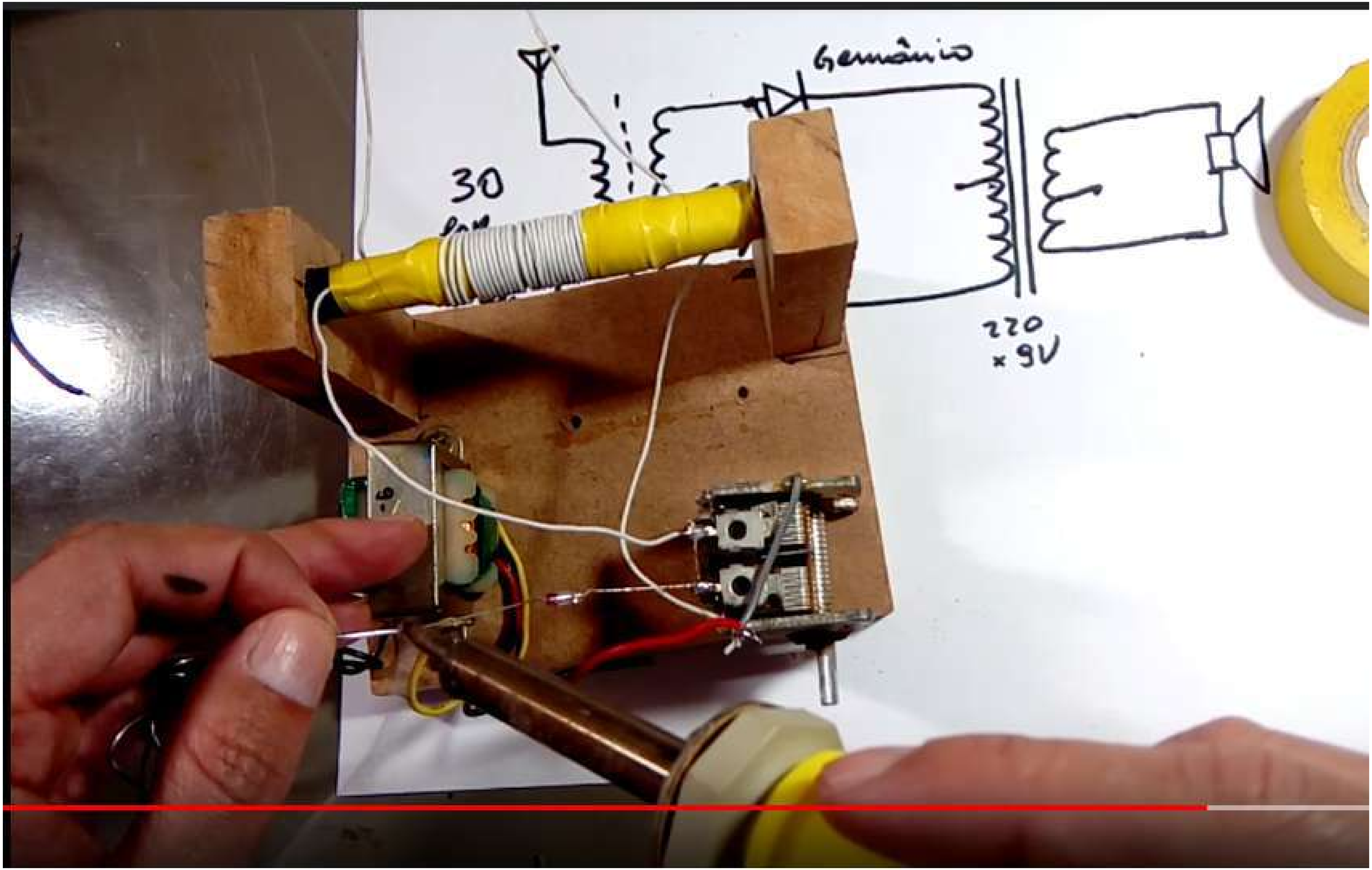
Germânio
30
220
x 9V



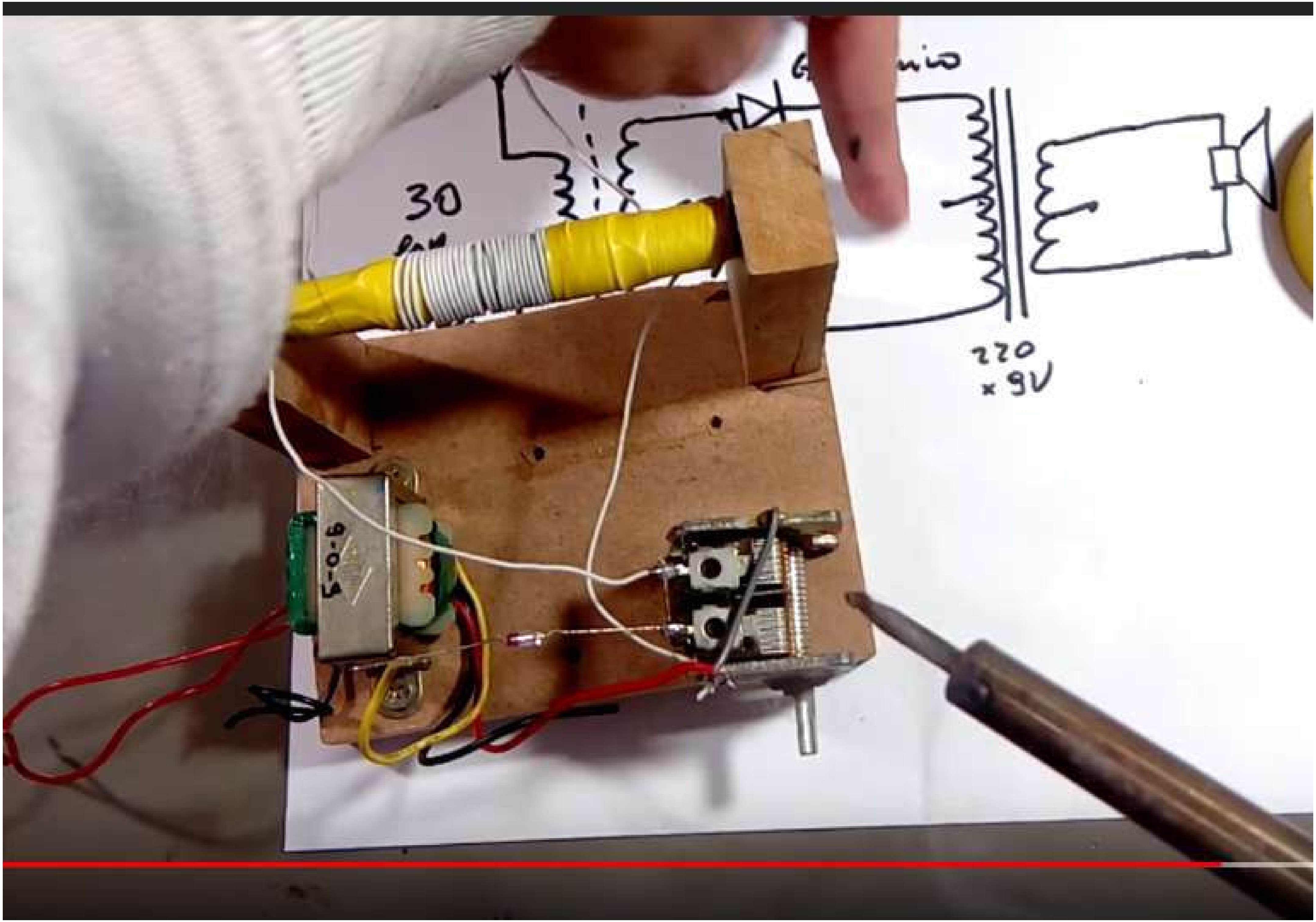
Germânio
30
220
x 9V


Germânio
30
220
x 9V
9-0-9


Germânio
30
220
x 9V



Germânio
30
220
x 9V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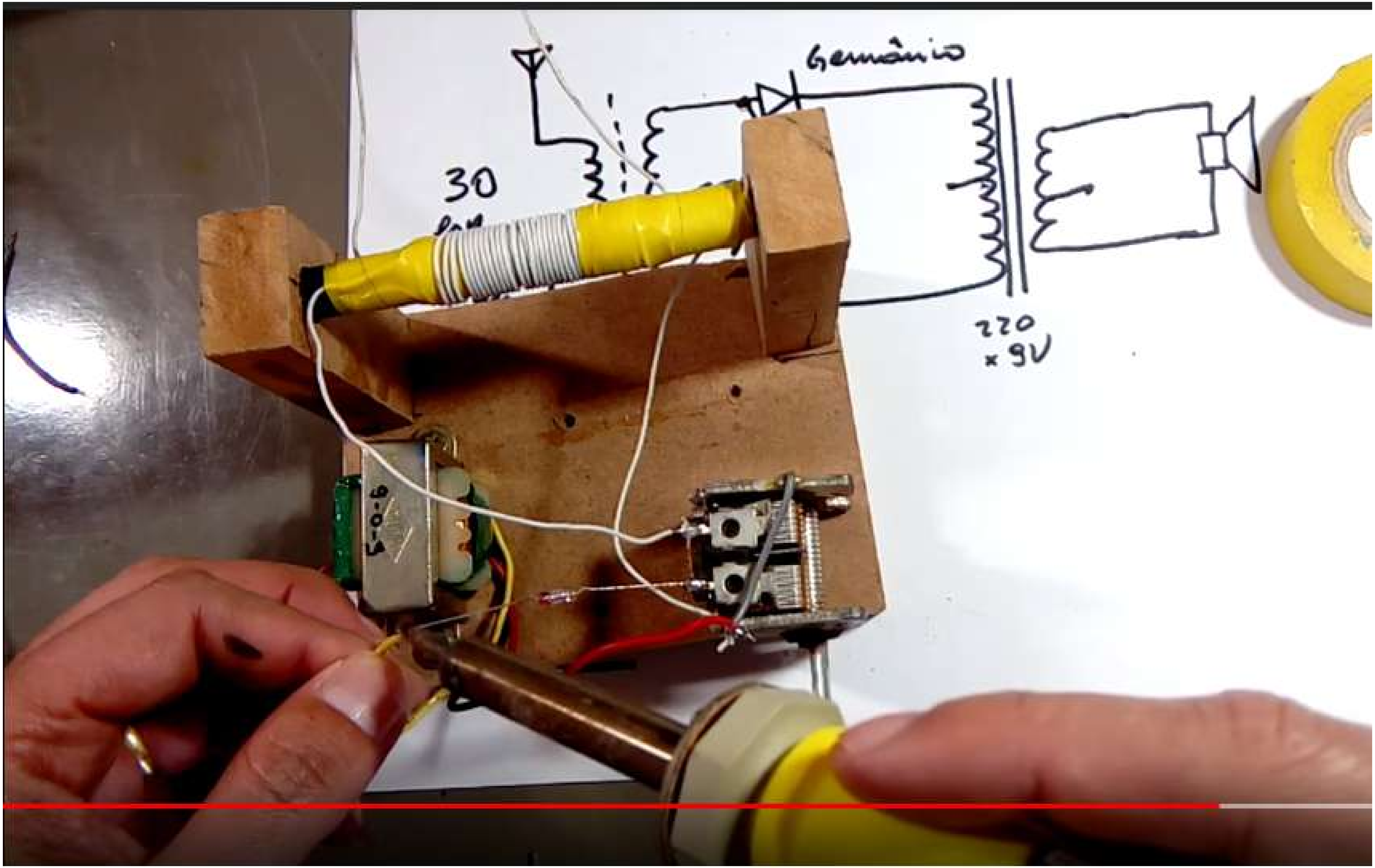
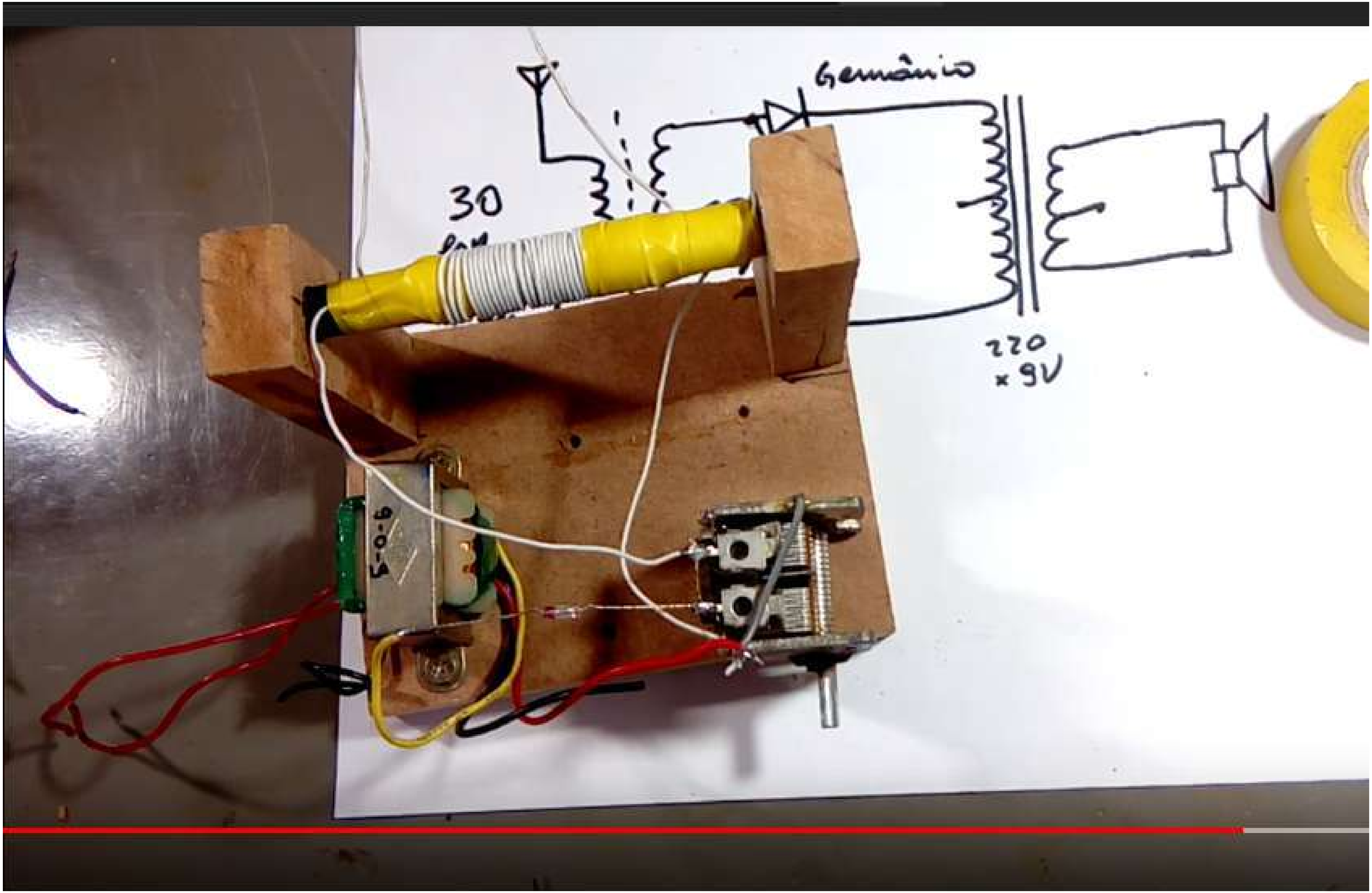
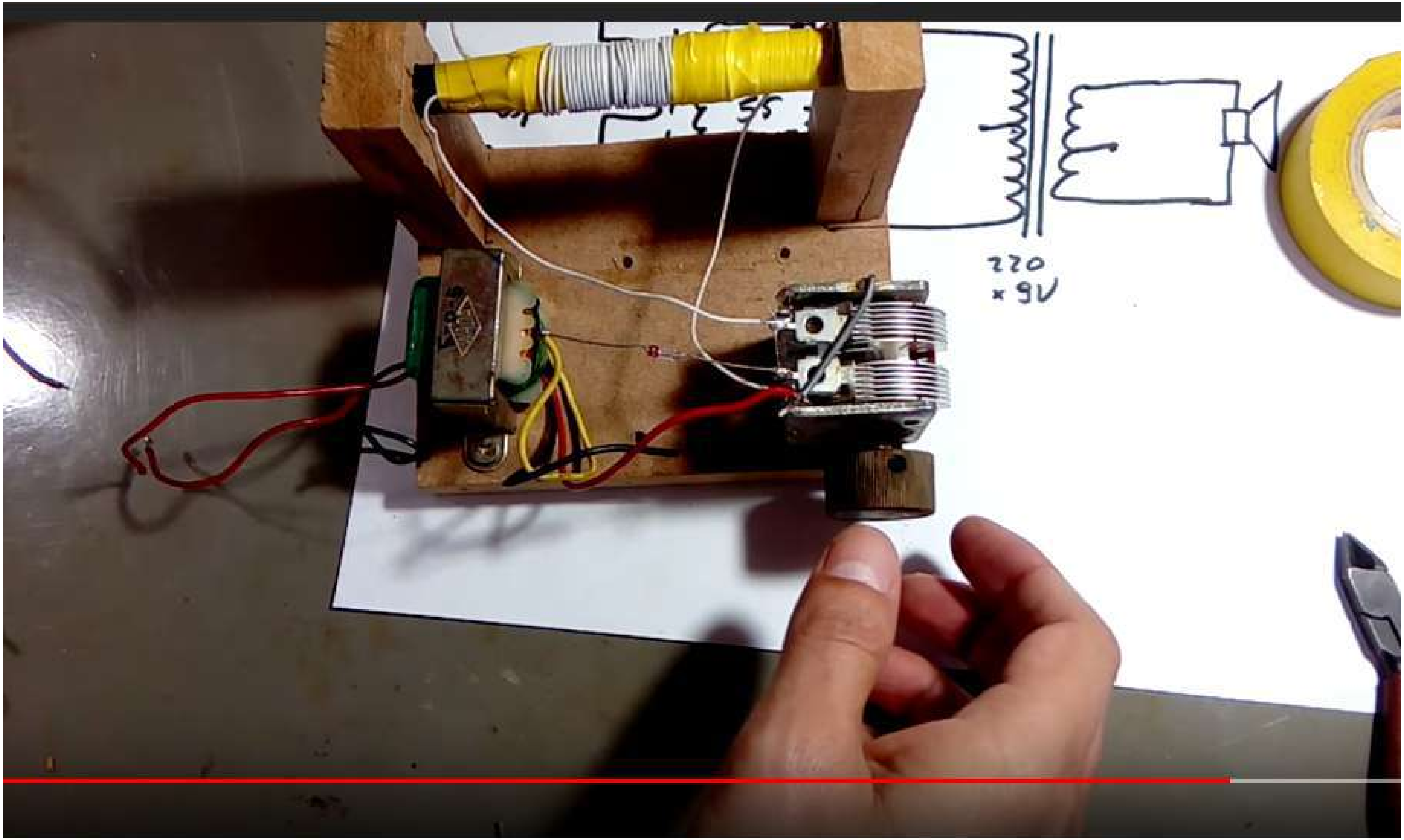
220
x 9V


Germânio
30
220
x 9V


Germânio
30
220
x 9V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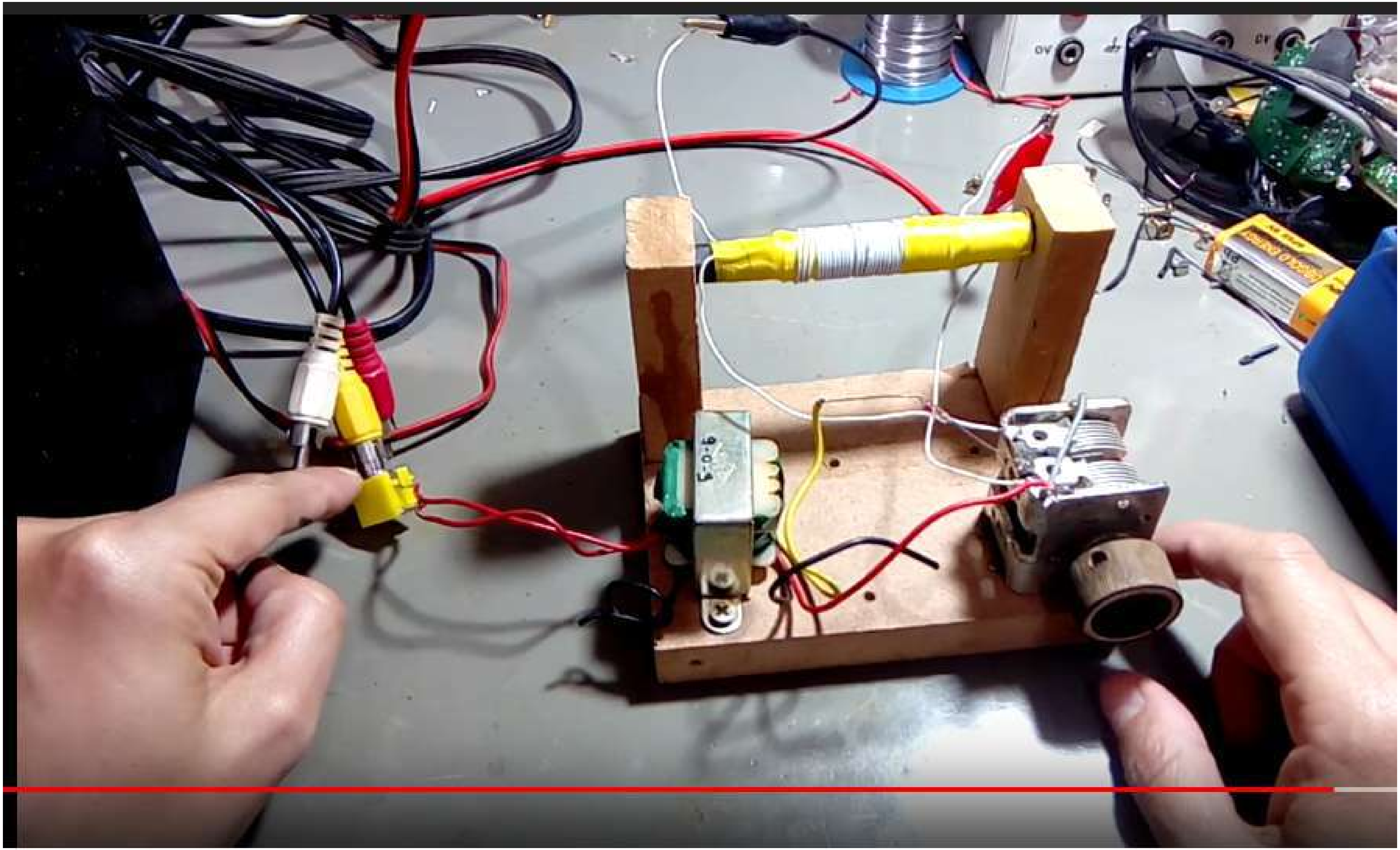
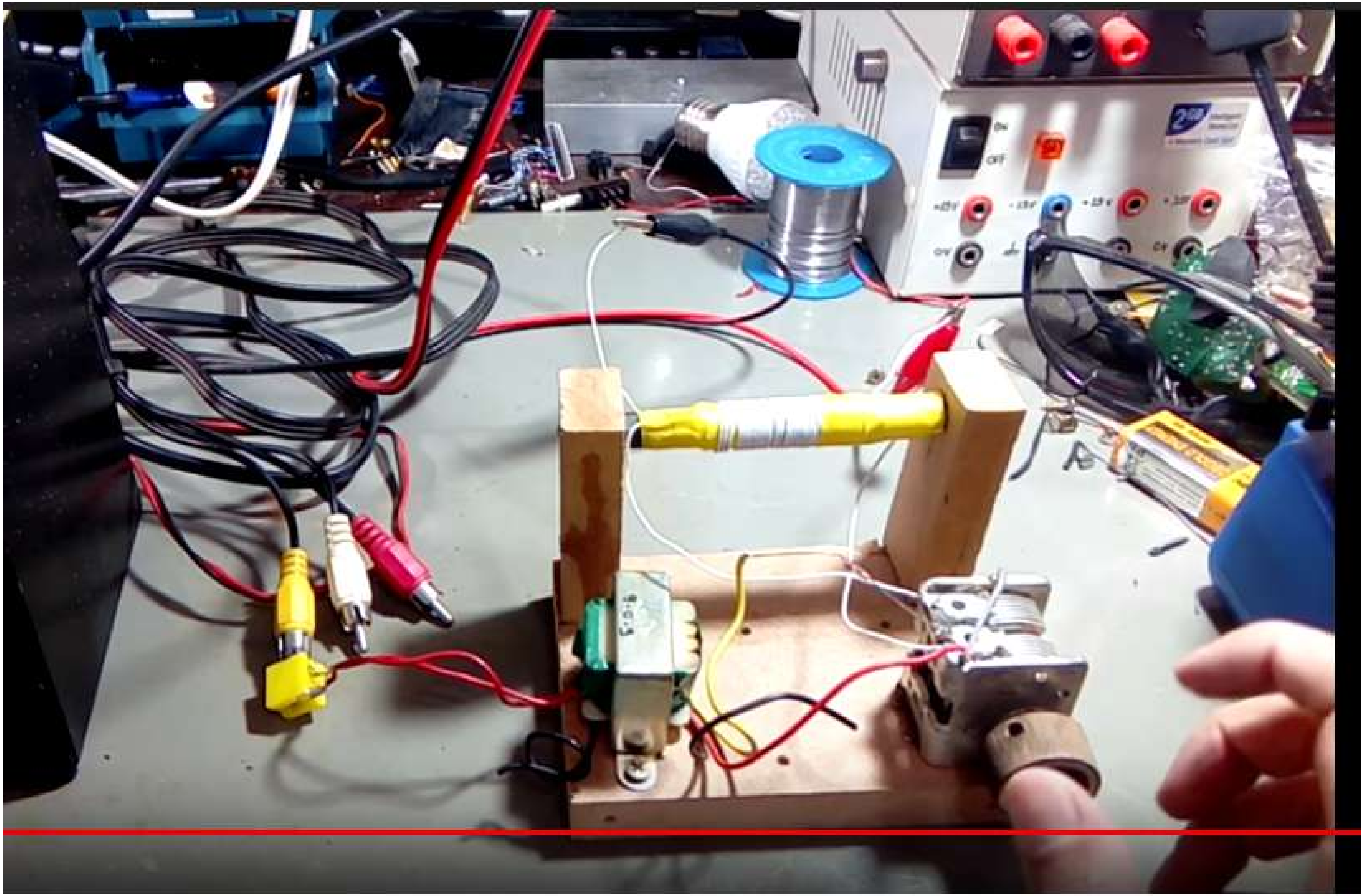
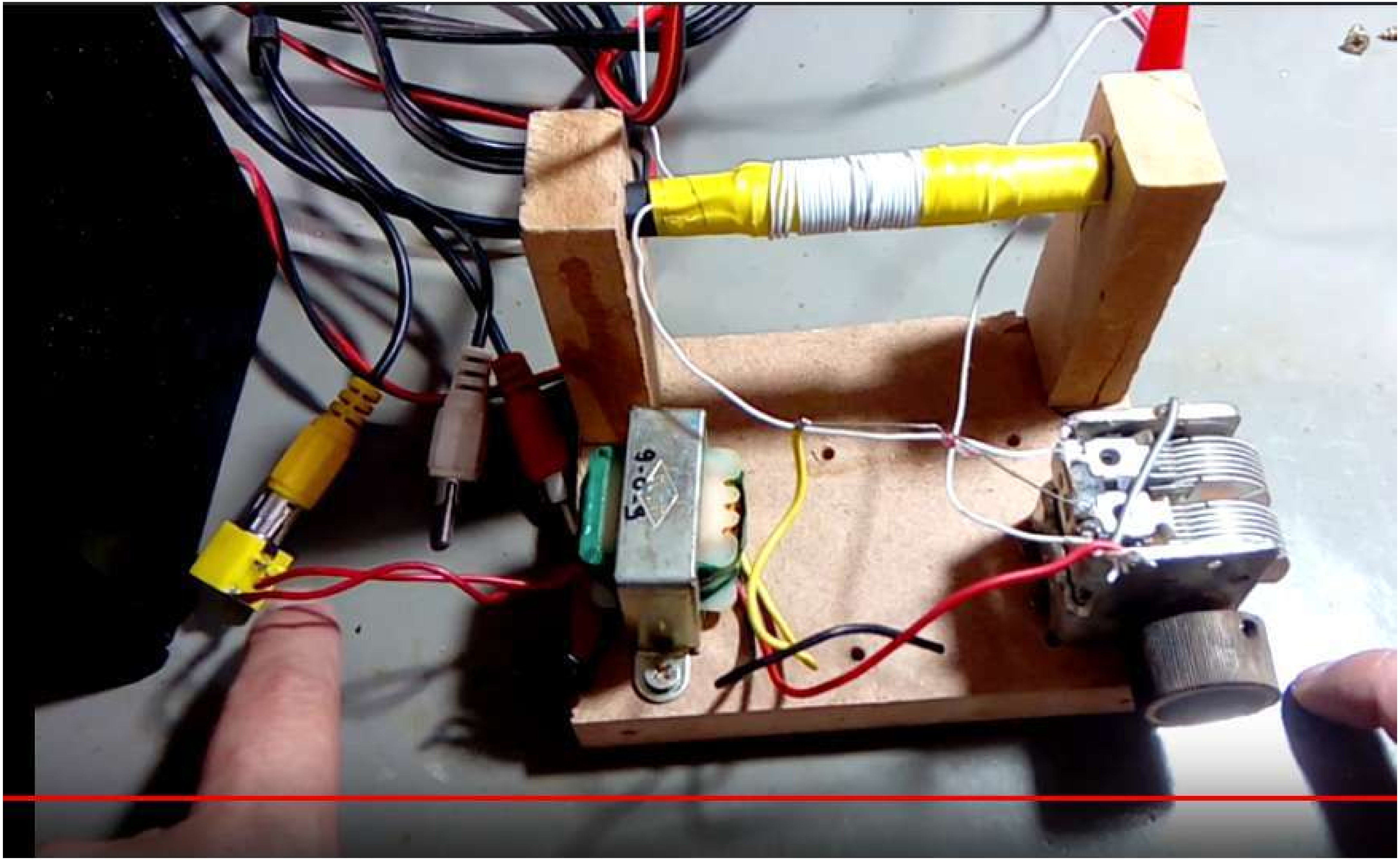
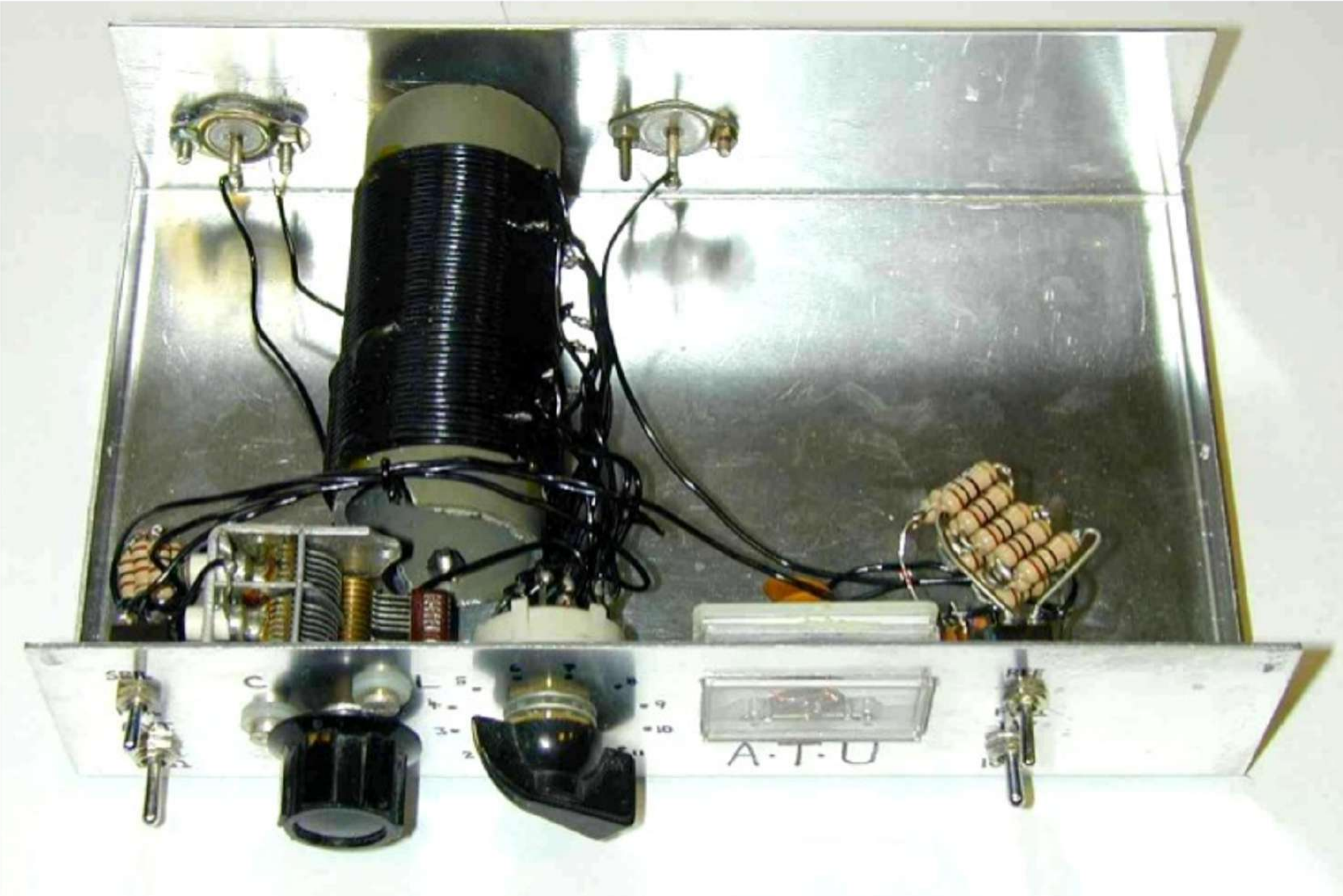
x 9V








A·T·U

flickr Explore Create

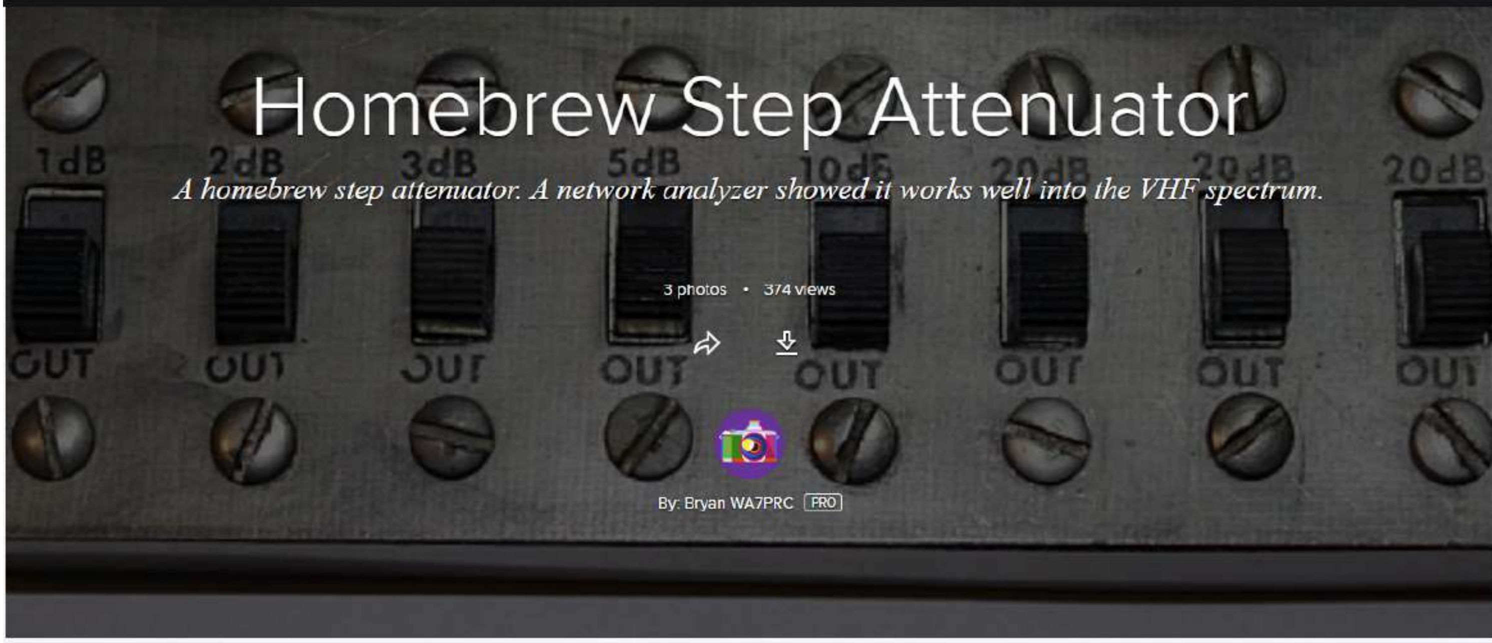
Photos, people, or groups

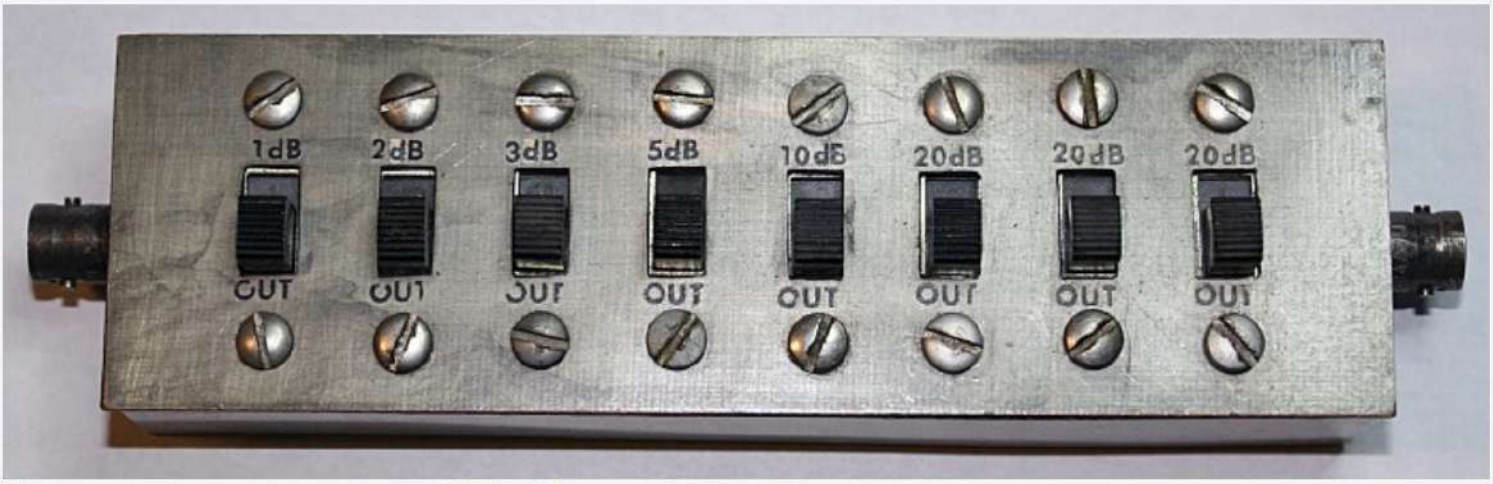
Homebrew Step Attenuator

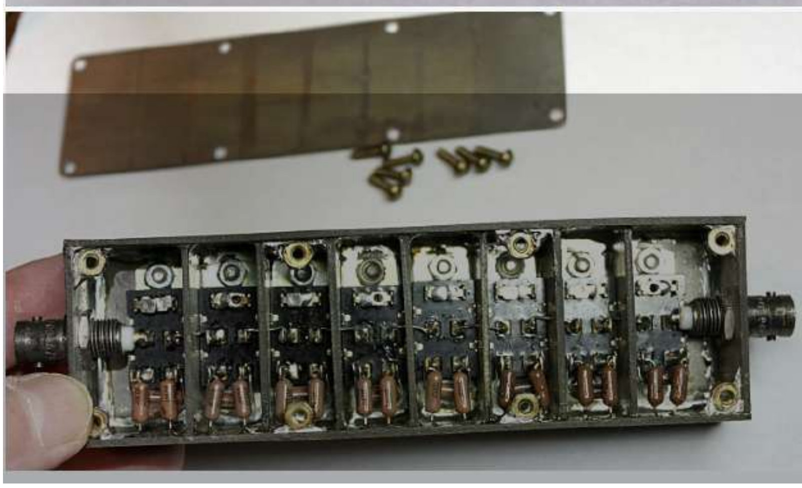
A homebrew step attenuator. A network analyzer showed it works well into the VHF spectrum.

3 photos • 374 views

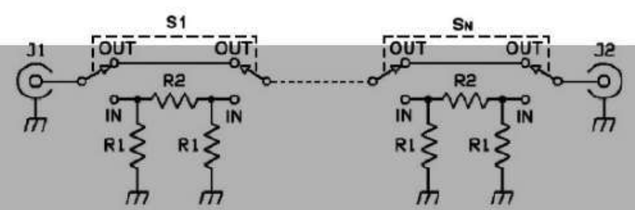
By: Bryan WA7PRC PRO



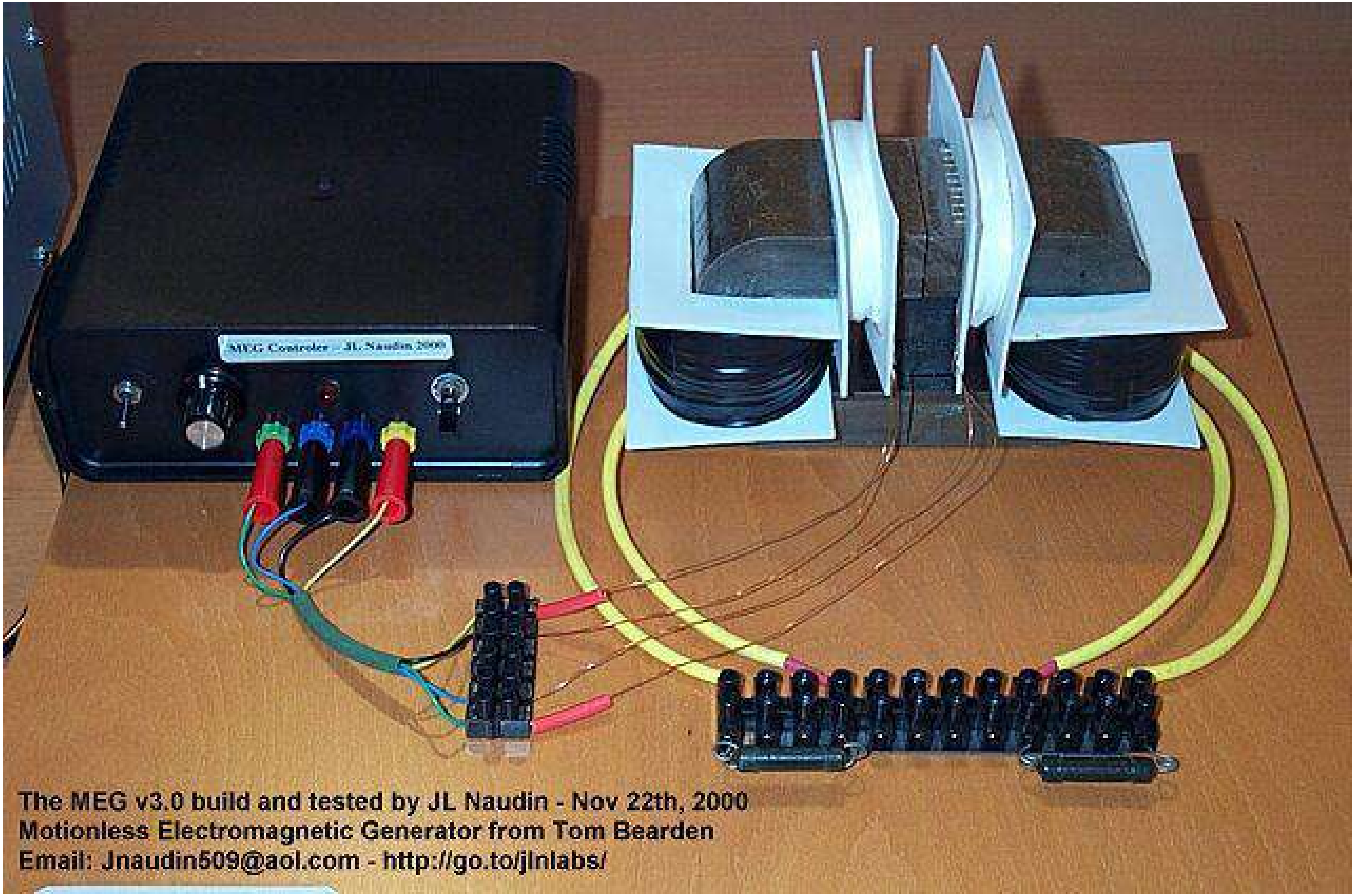


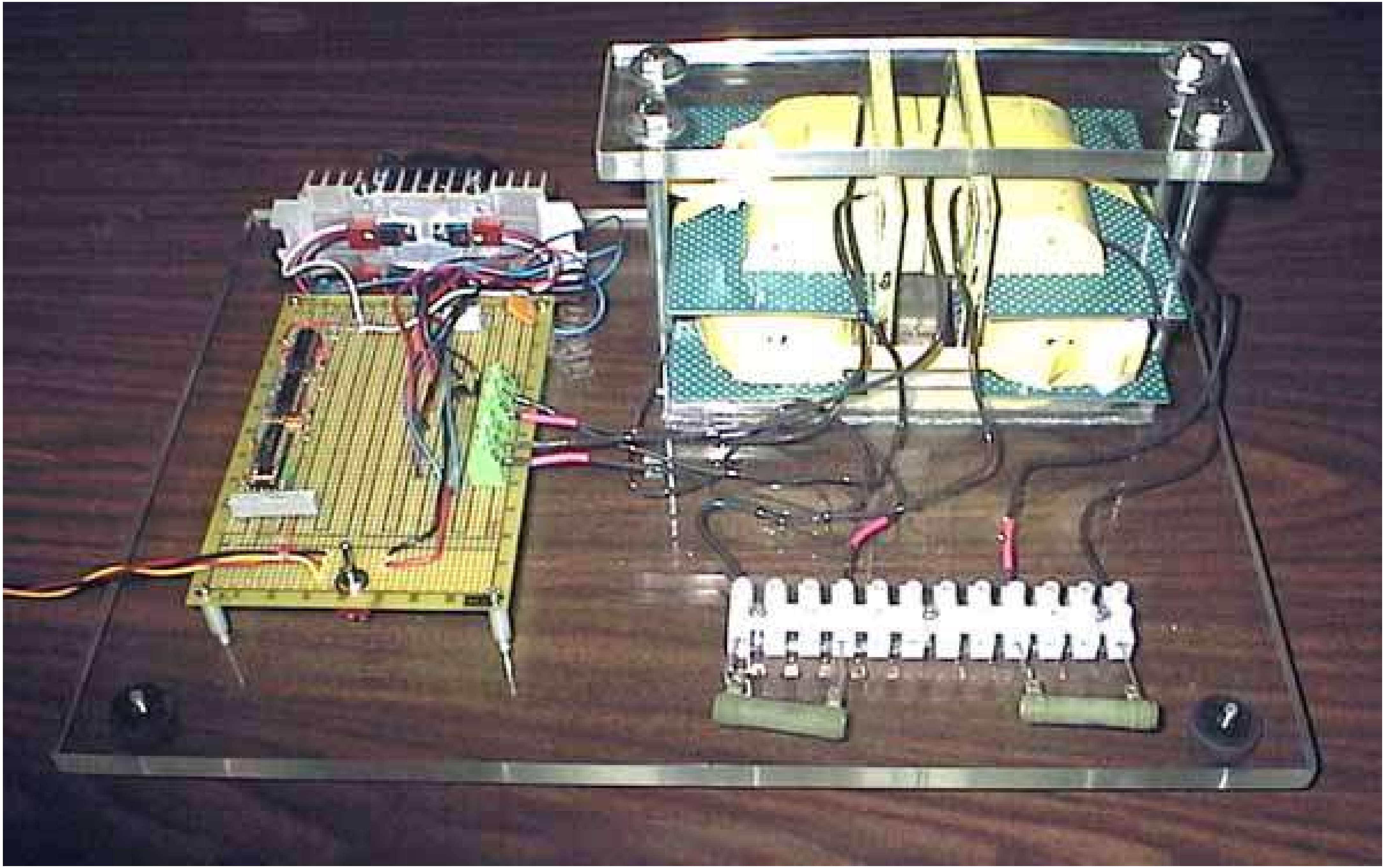


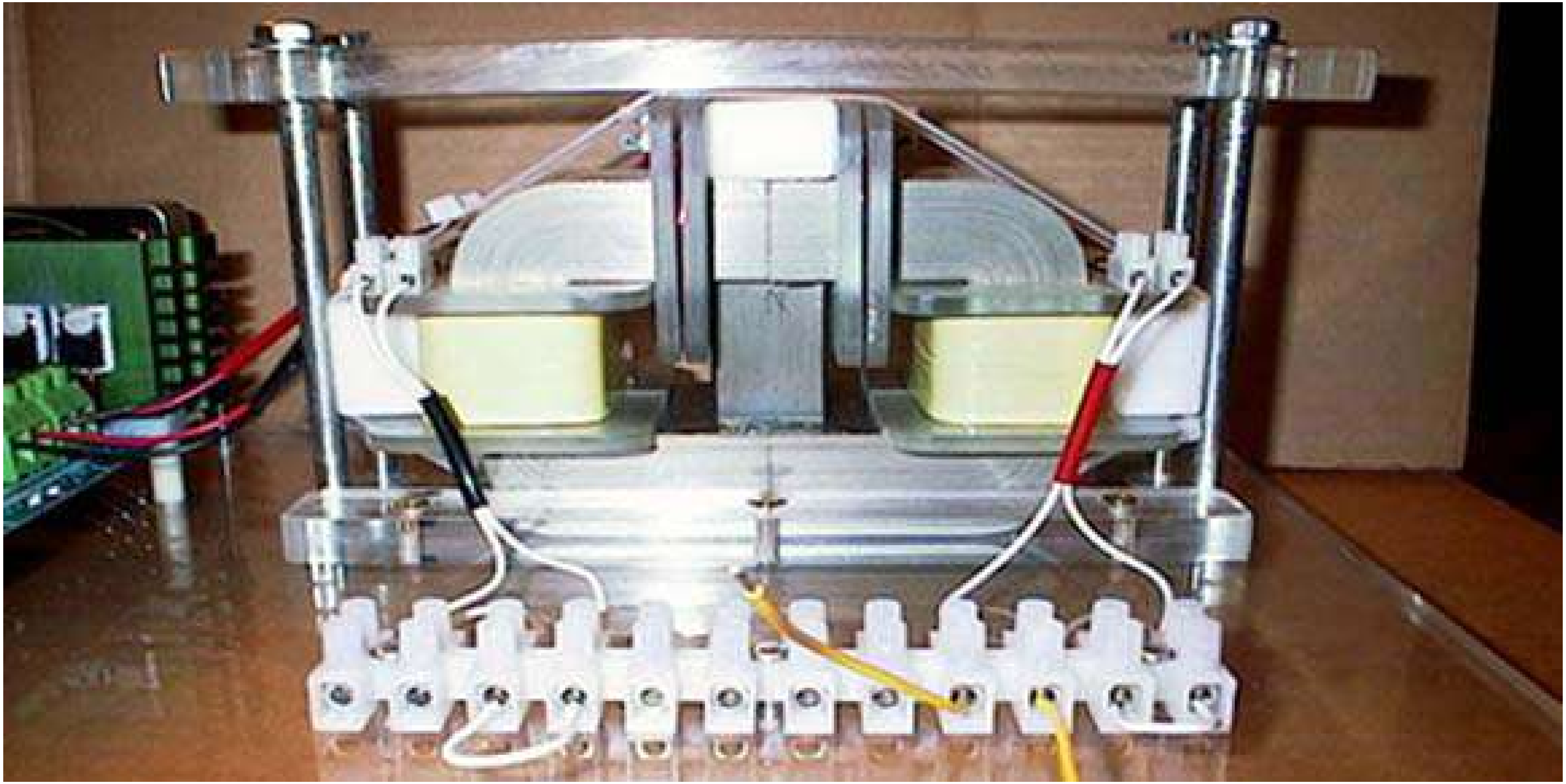
50-OHM STEP ATTENUATOR

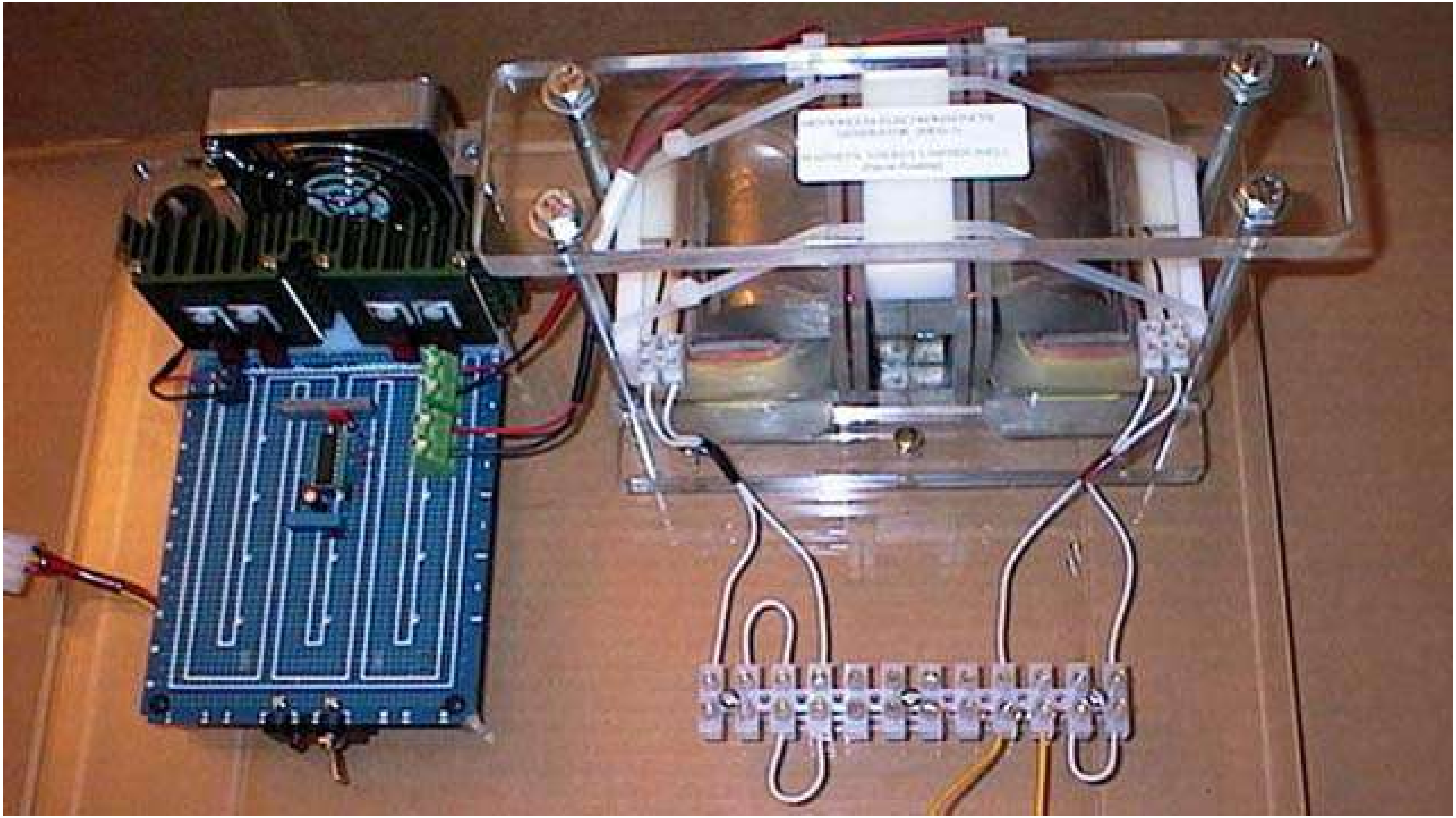


50Ω ATTEN	CALCULATED VALUES R1	R2	1% RESISTORS (E48) R1	R2	5% RESISTORS (E24) R1	R2
1dB	869Ω	5.8Ω	887Ω	5.6Ω	910Ω	5.6Ω
2dB	436Ω	12Ω	453Ω	12.0Ω	470Ω	12Ω
3dB	294Ω	18Ω	294Ω	18.0Ω	300Ω	18Ω
5dB	178Ω	30Ω	178Ω	30.1Ω	200Ω	33Ω
10dB	96Ω	71Ω	95.3Ω	71.5Ω	100Ω	75Ω
20dB	61Ω	248Ω	61.9Ω	249Ω	62Ω	270Ω


MEG Controler - JL Naudin 2000
The MEG v3.0 build and tested by JL Naudin - Nov 22th, 2000
Motionless Electromagnetic Generator from Tom Bearden
Email: Jnaudin509@aol.com - http://go.to/jlnlabs/

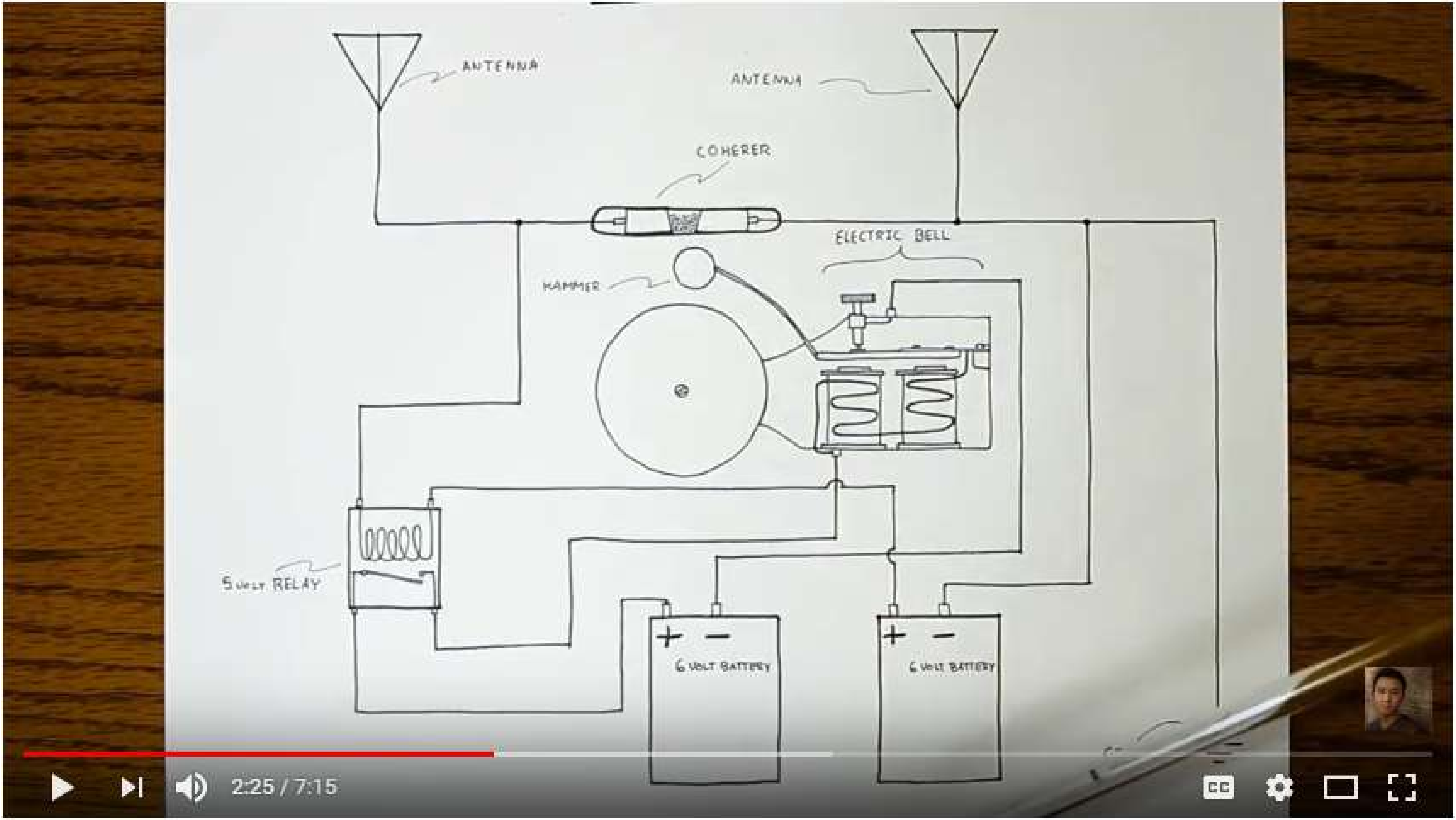




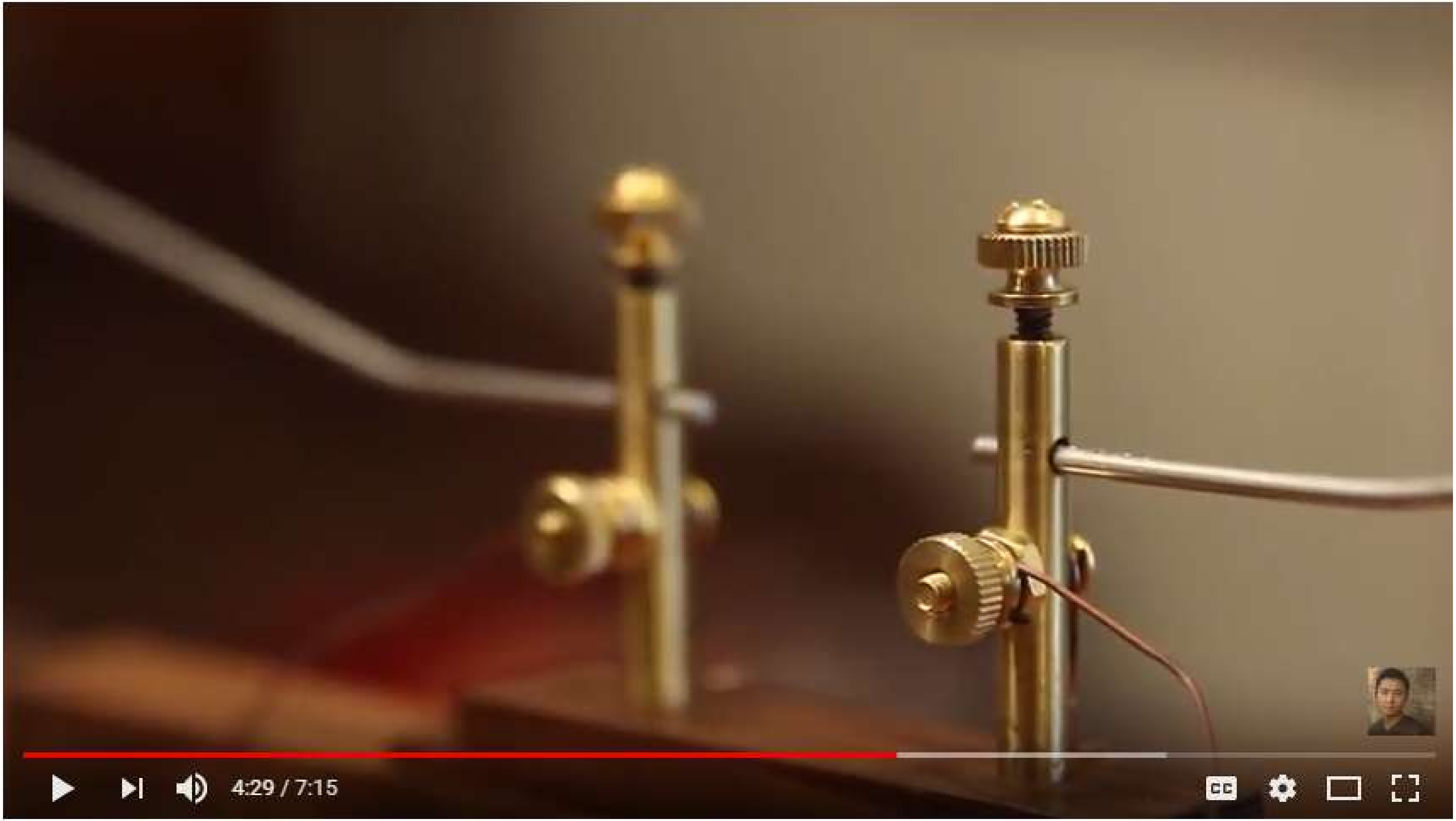


Coherer Detector - Wireless Telegraph


3:32 / 7:15


ANTENNA
ANTENNA
COHERER
ELECTRIC BELL
HAMMER
5 VOLT RELAY
6 VOLT BATTERY
6 VOLT BATTERY
2:25 / 7:15


6:40 / 7:15
CC
HD


4:29 / 7:15


6:12 / 7:15
CC

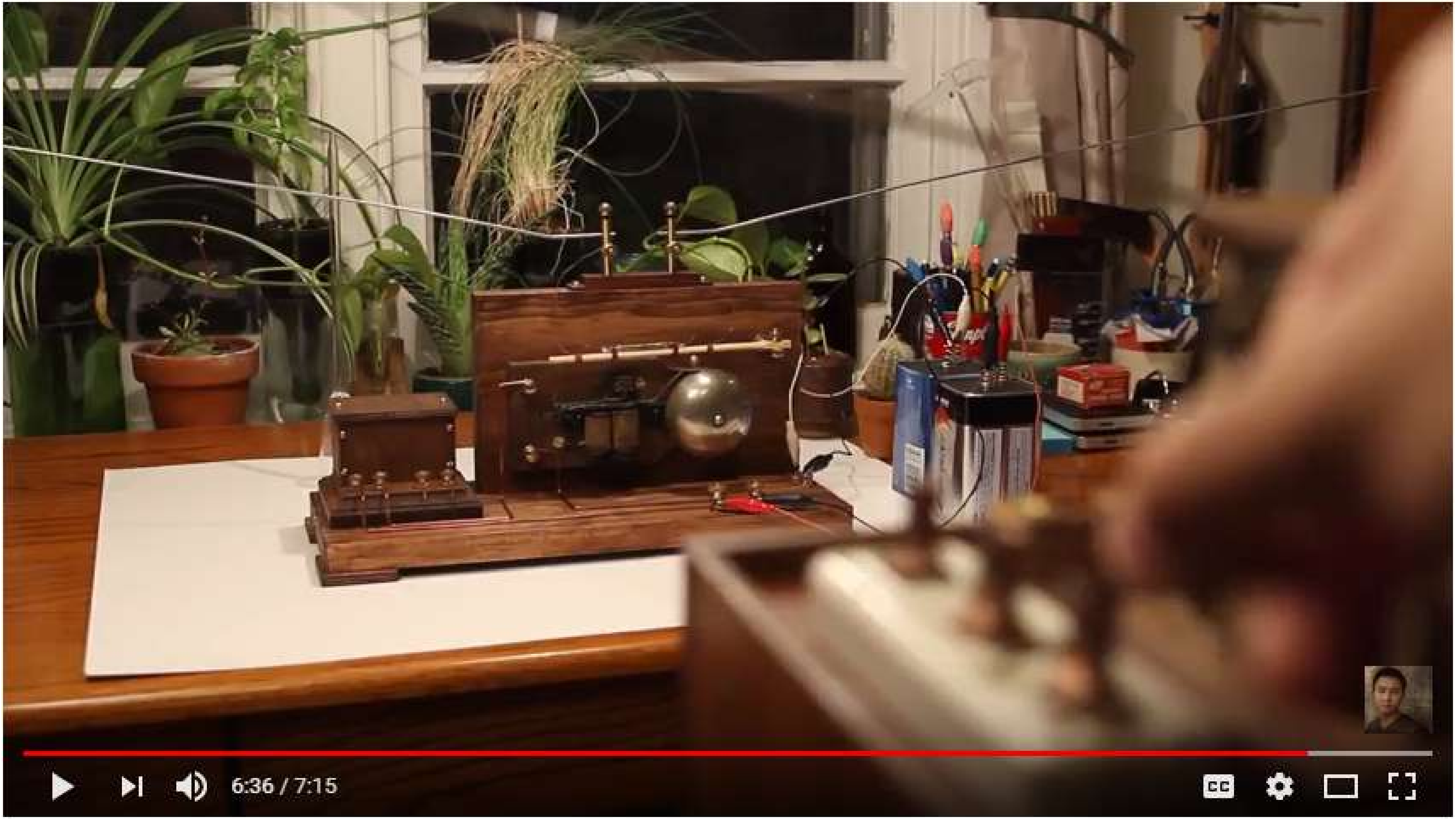

6:18 / 7:15
CC

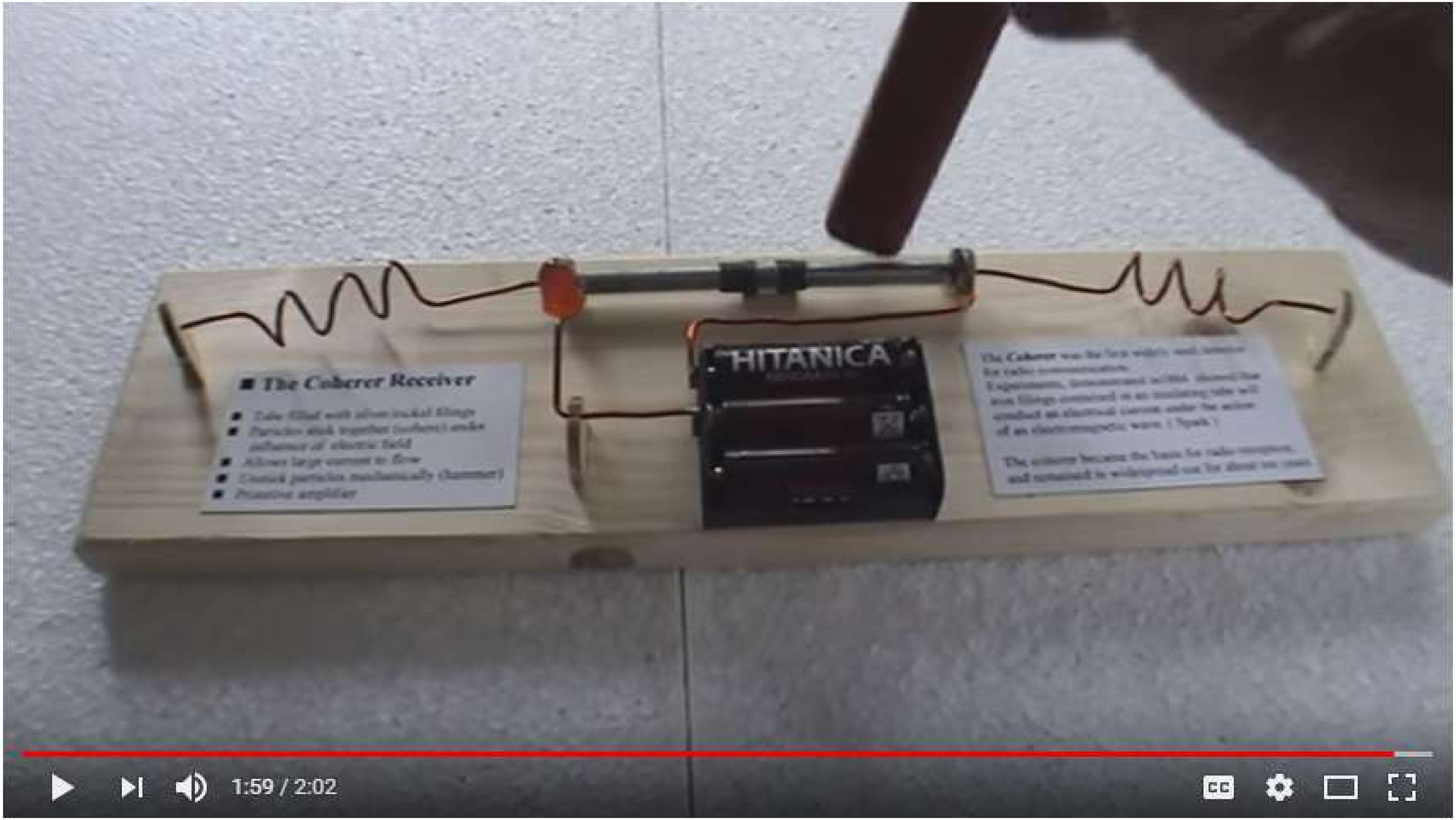

4:20 / 7:15

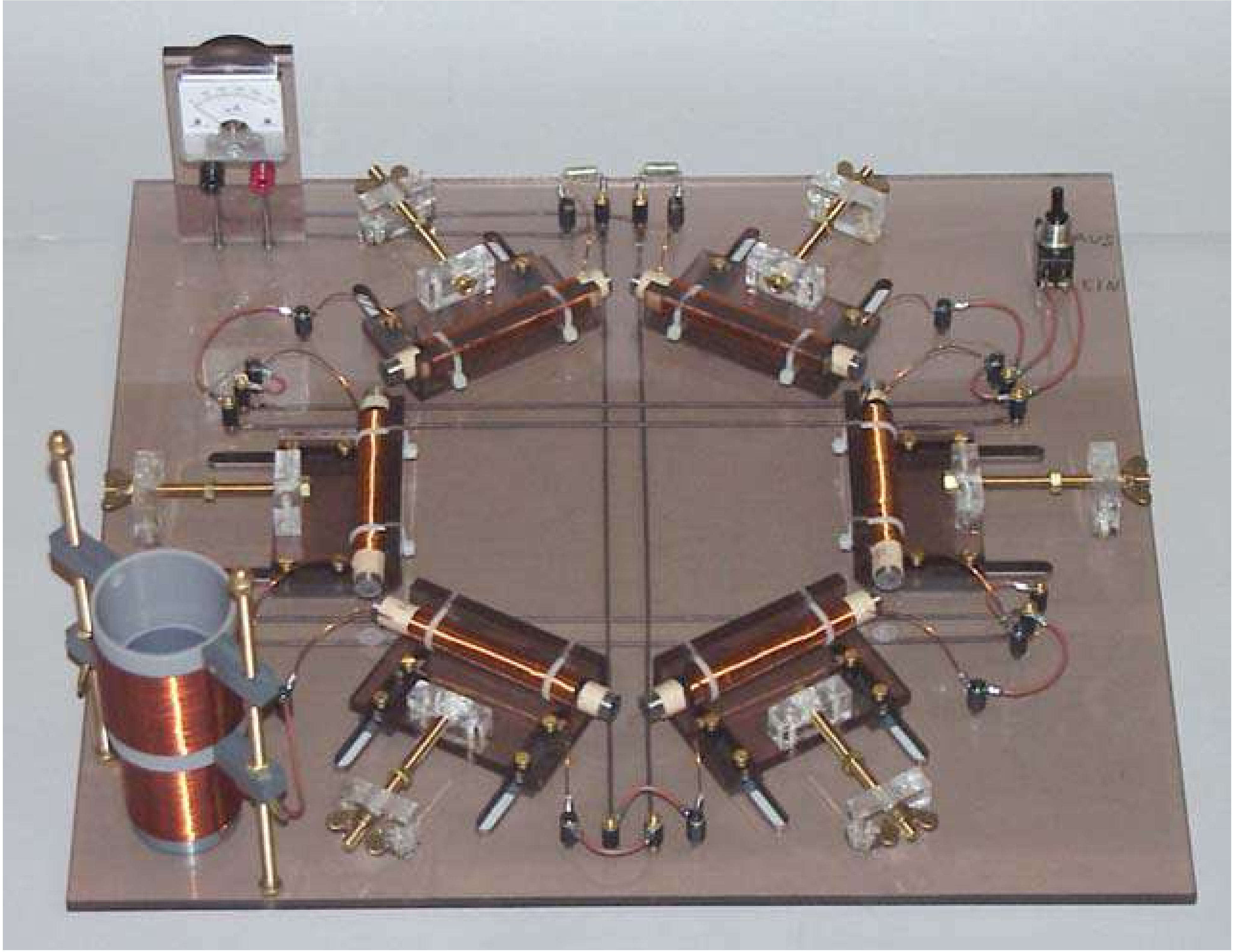

6:05 / 7:15

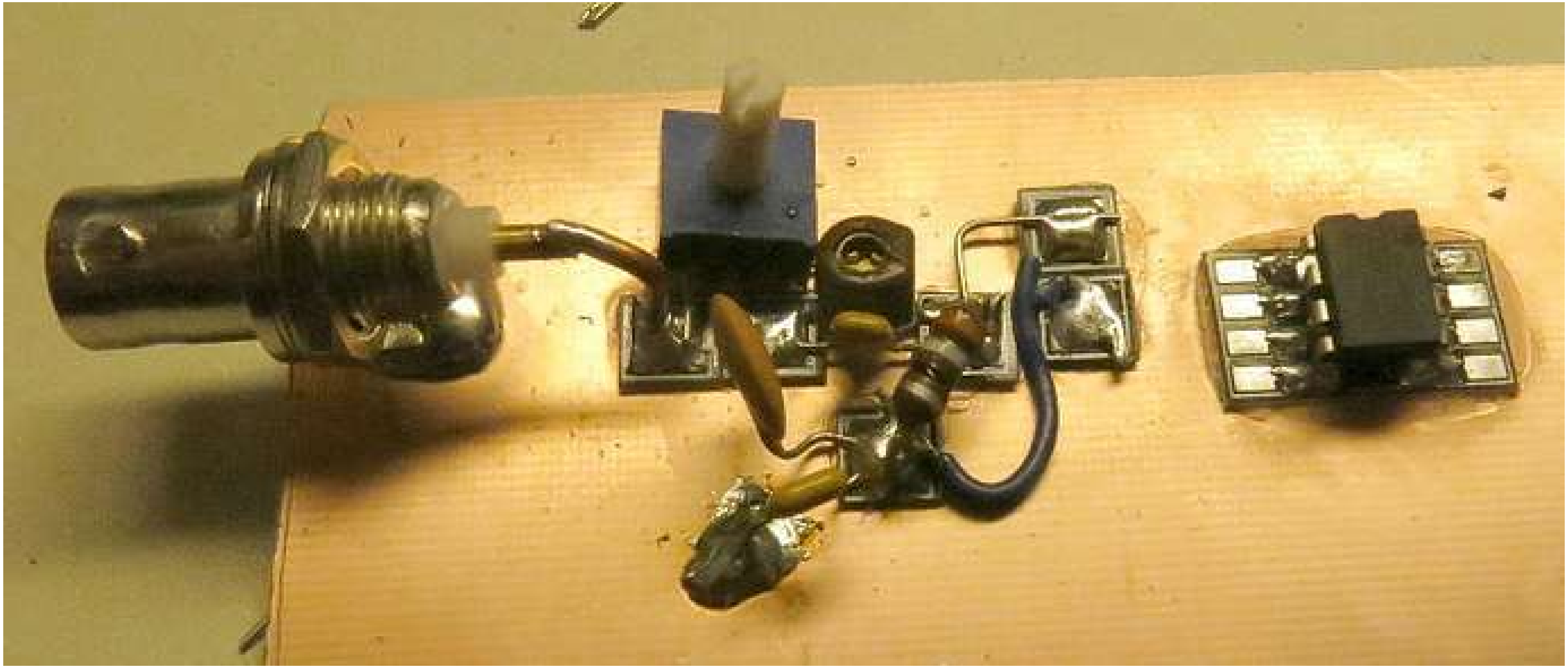

6:06 / 7:15
CC

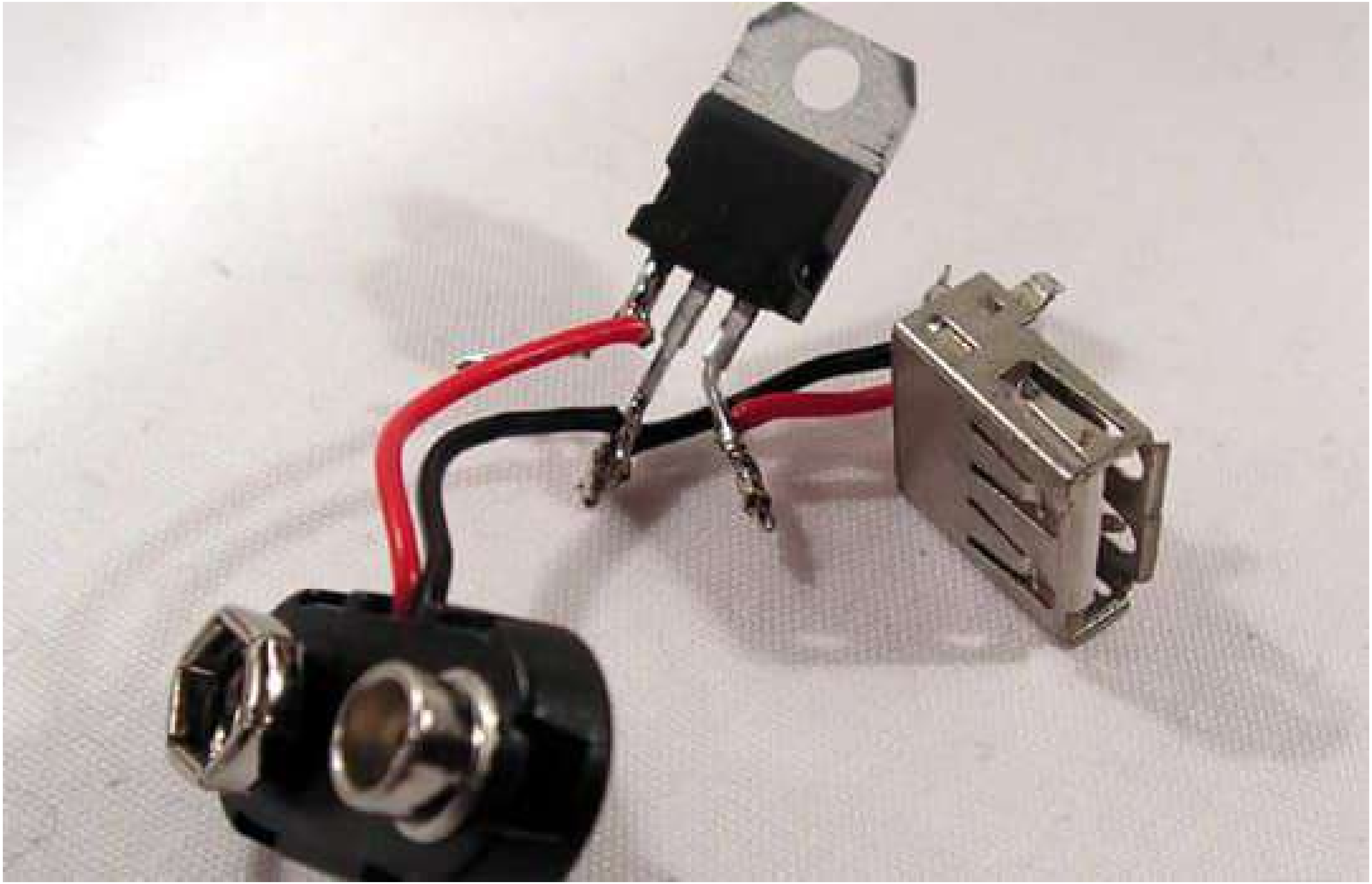

6:26 / 7:15

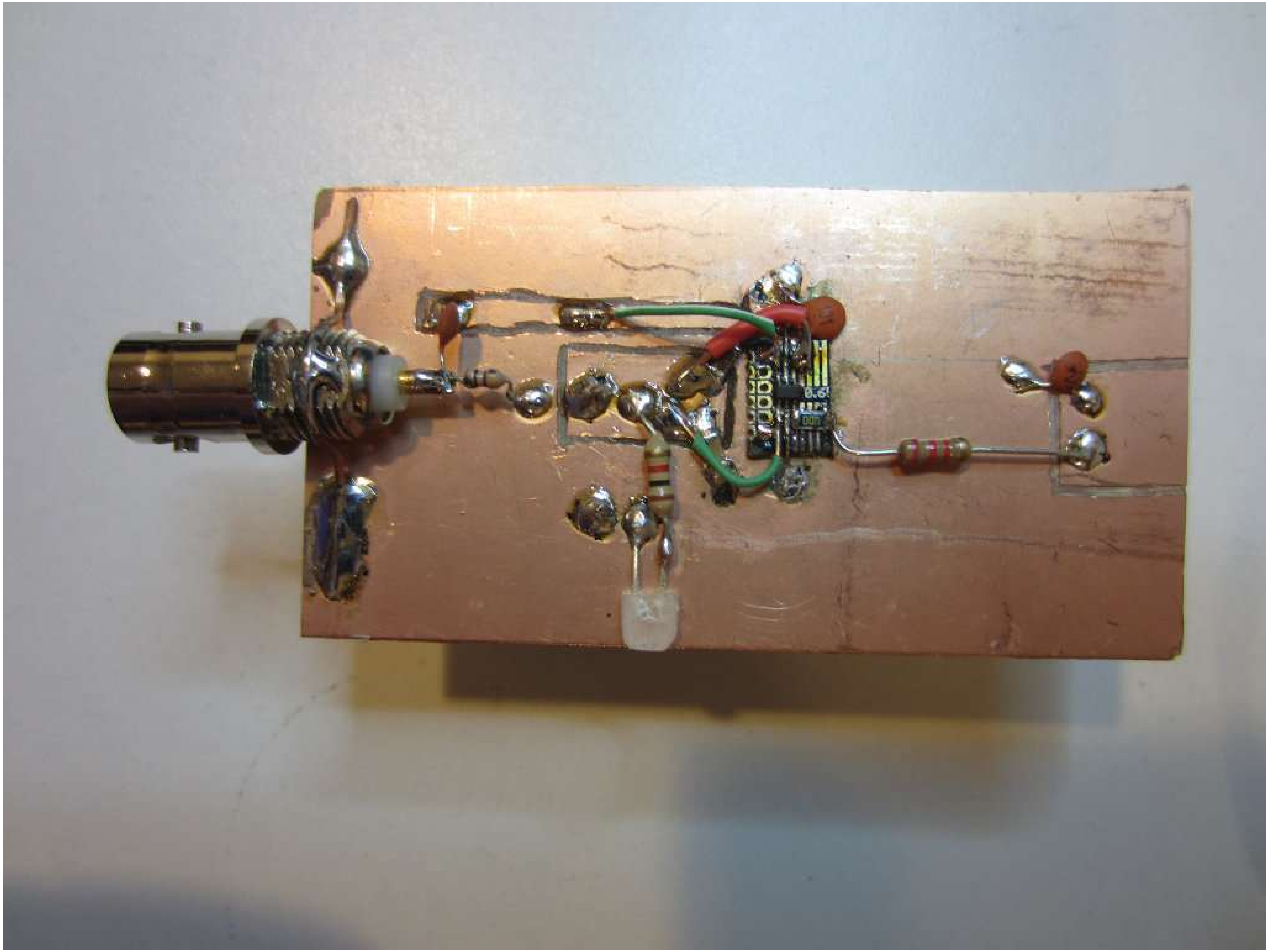

6:36 / 7:15
CC

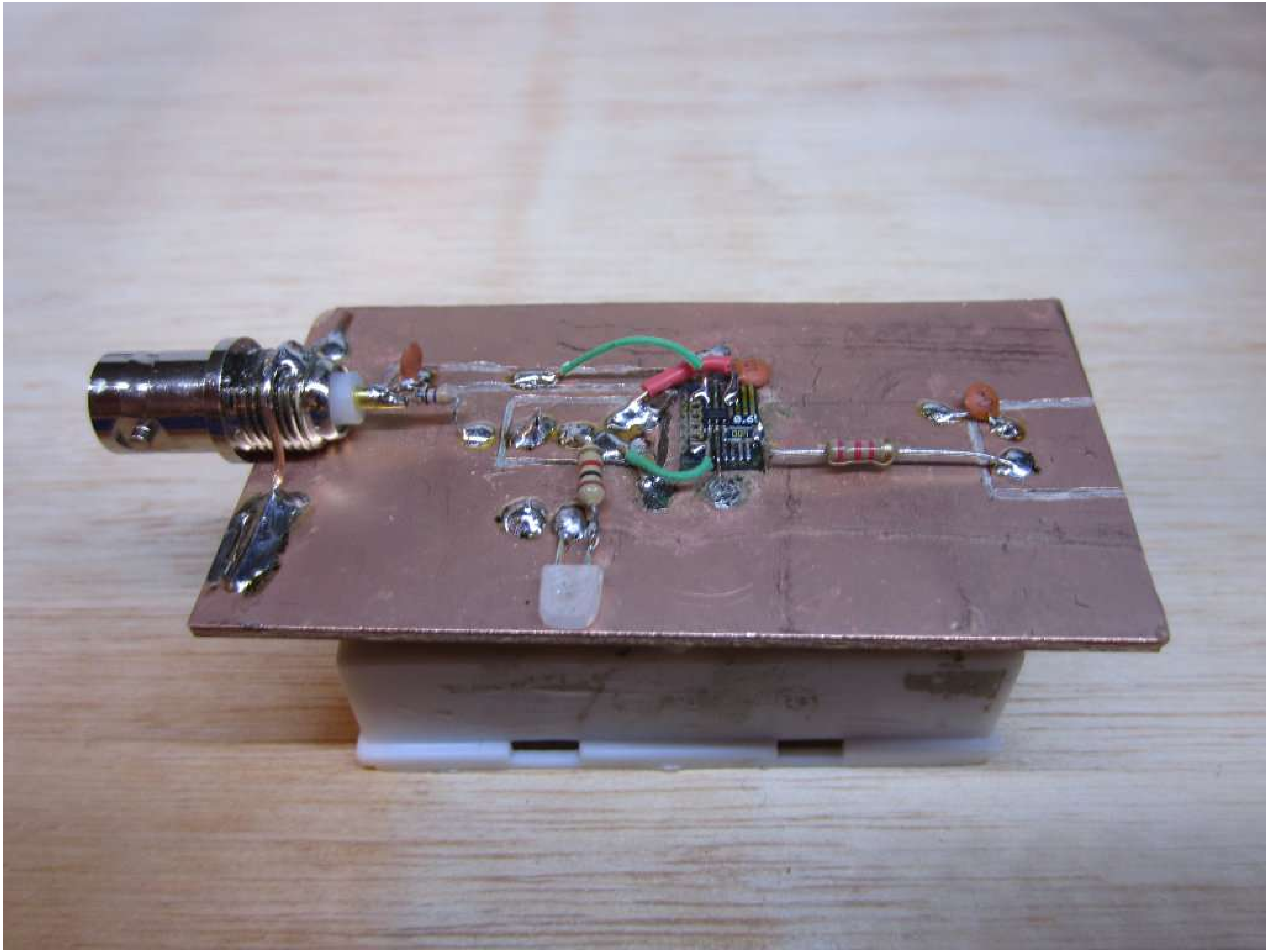

The Coherer Receiver
HITANICA
1:59 / 2:02

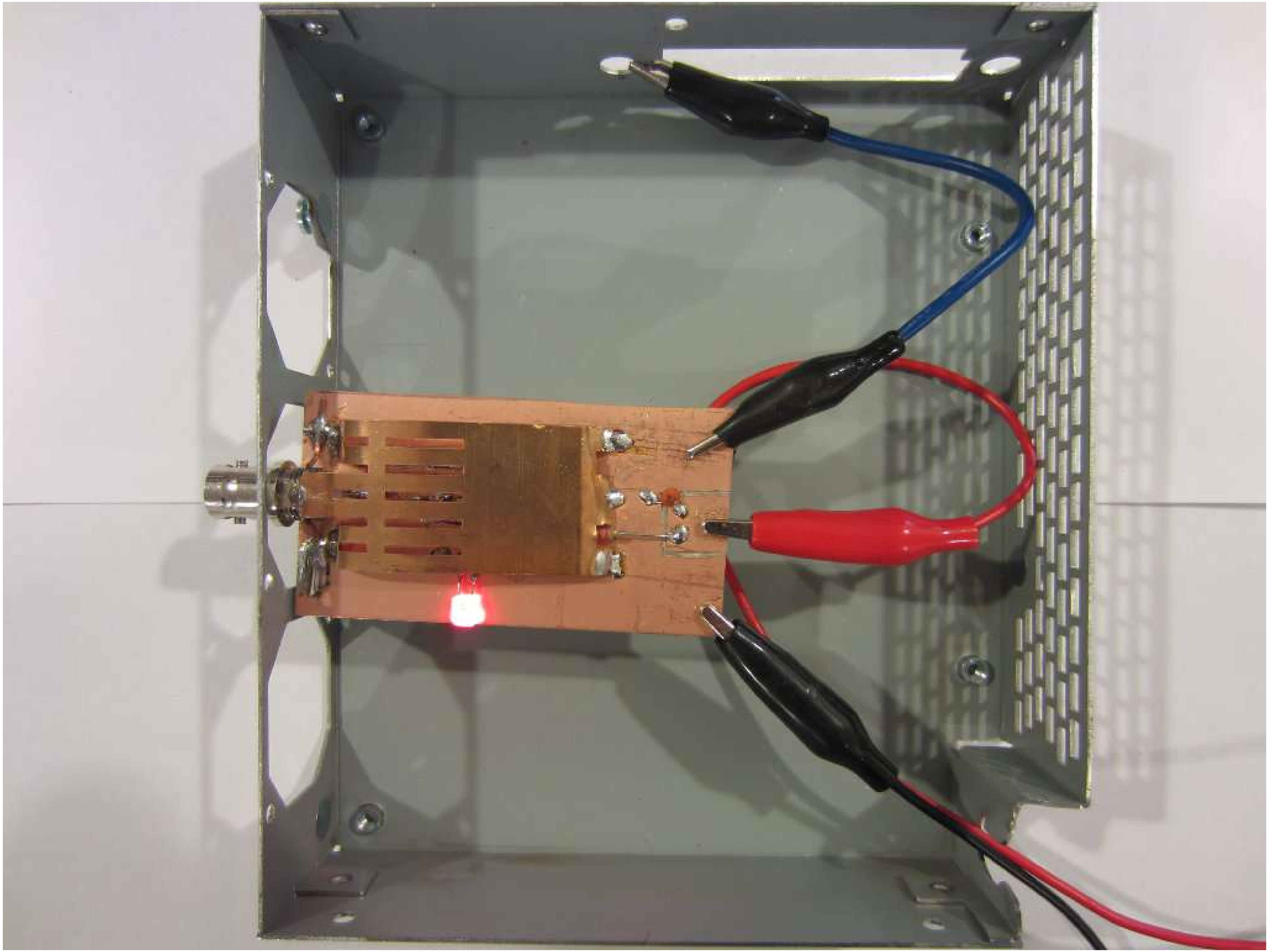








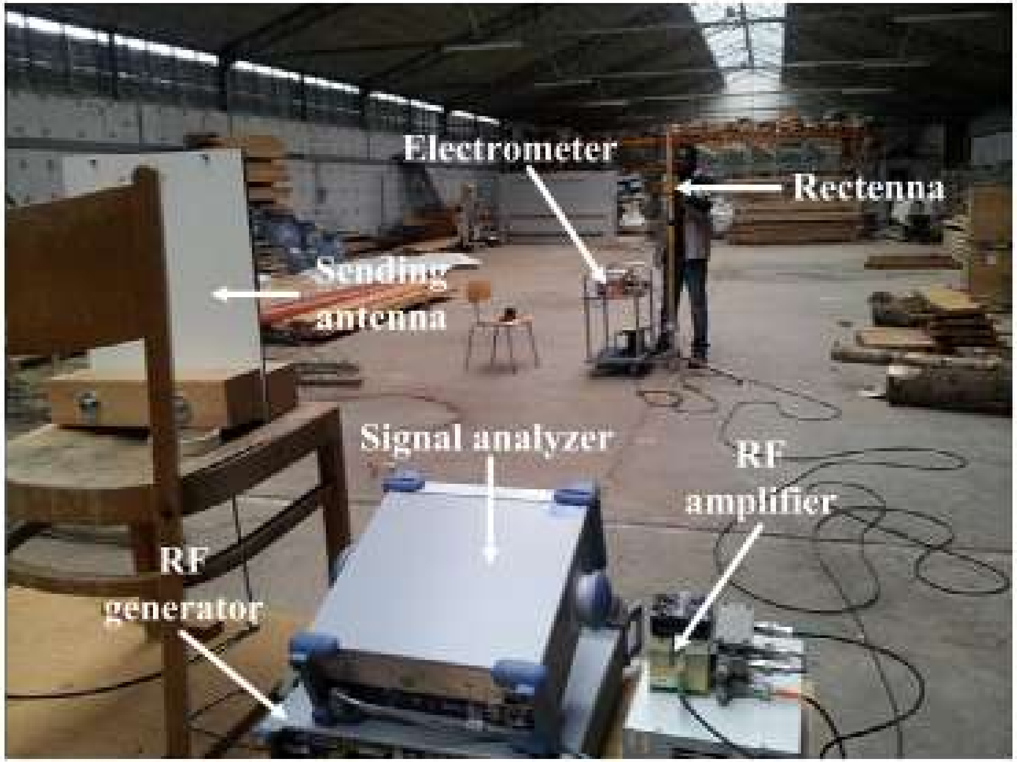


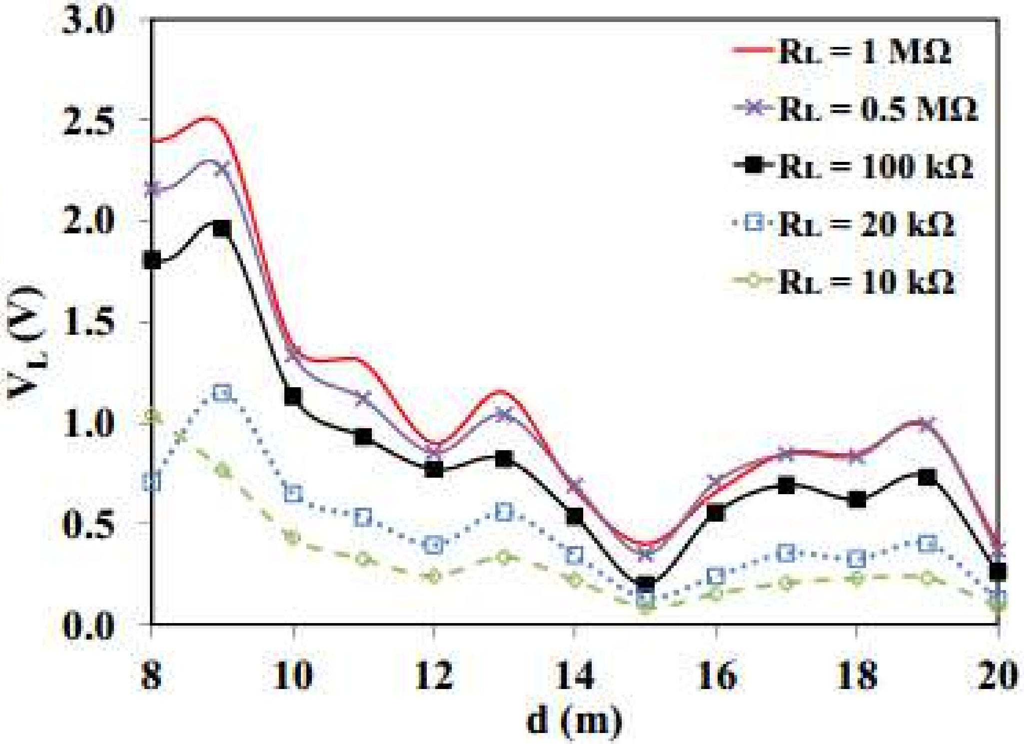


GW3UEP QRP Meter LF-HF 10W max

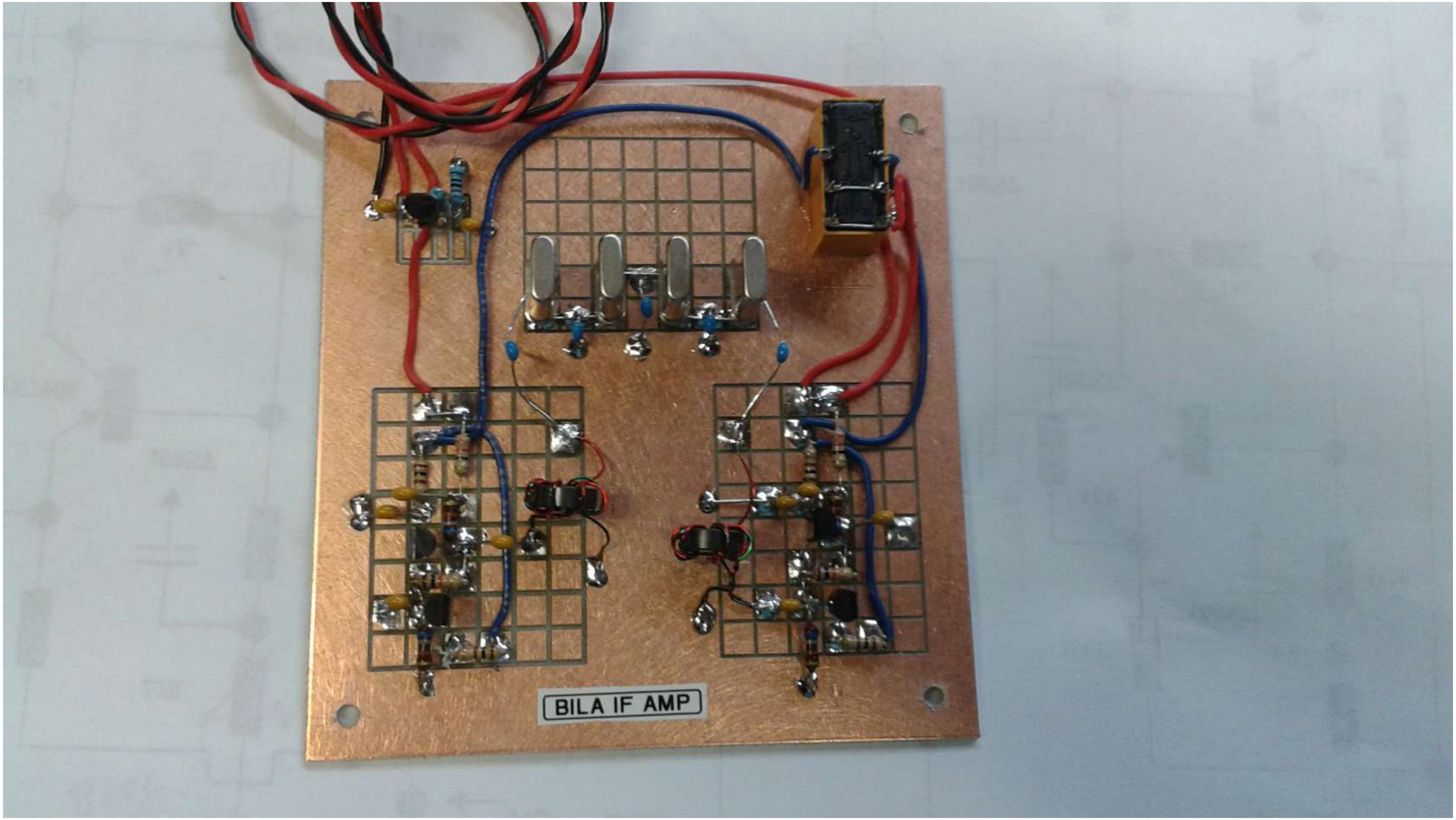
12 June 2012

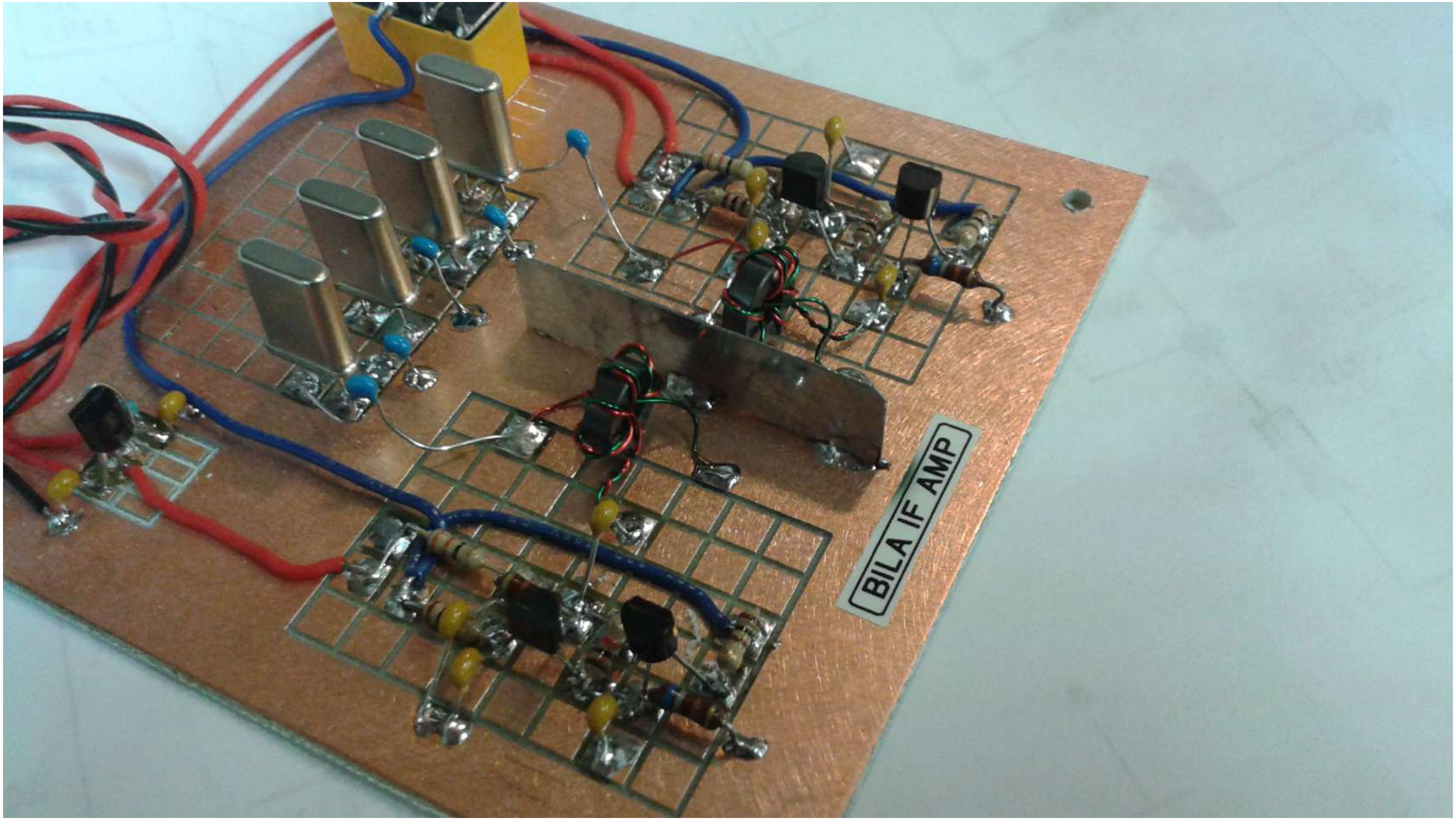

RF
IN
REGEN
TUNE
AF

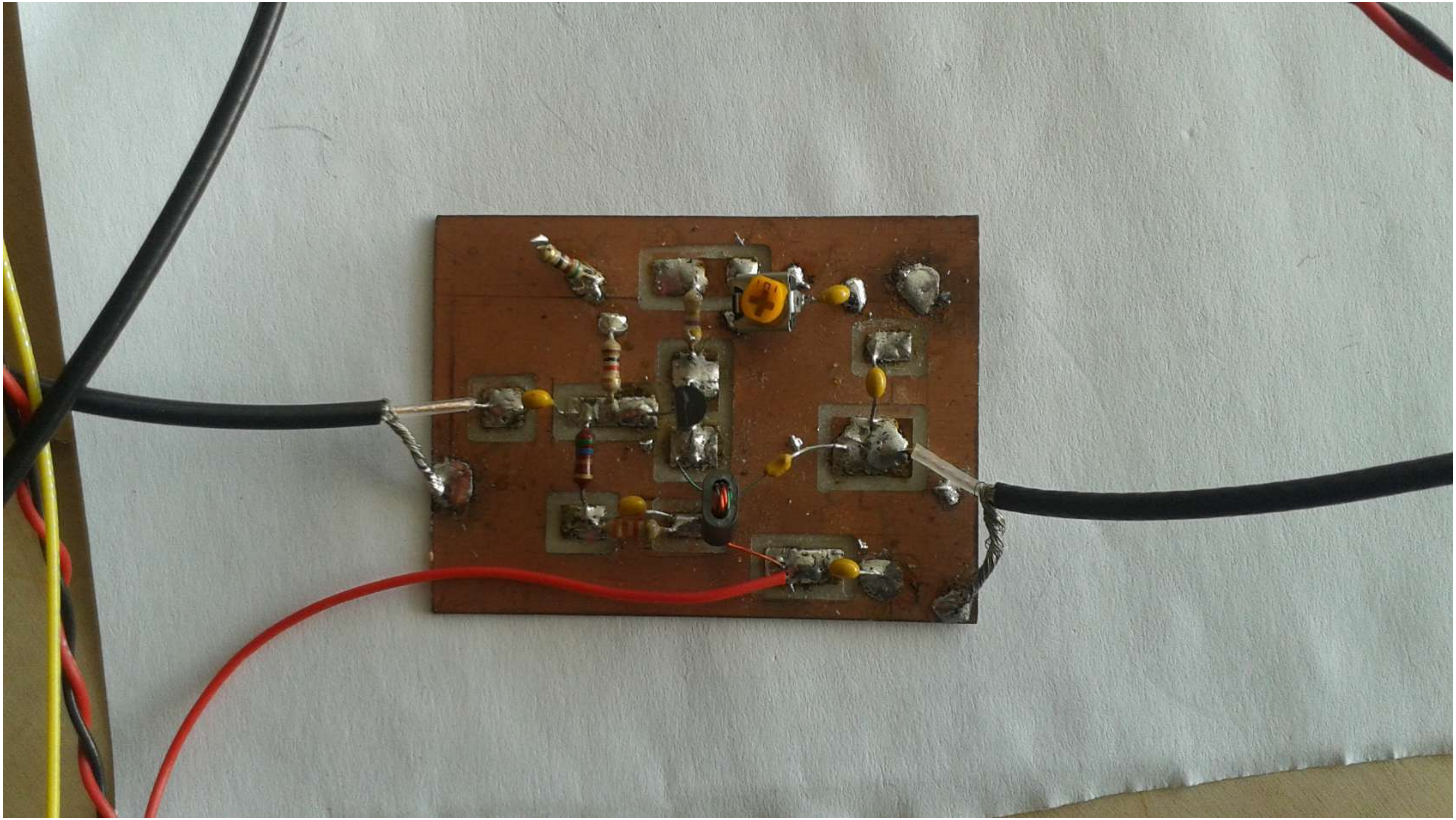

Electrometer
Rectenna
Sending antenna
Signal analyzer
RF amplifier
RF generator

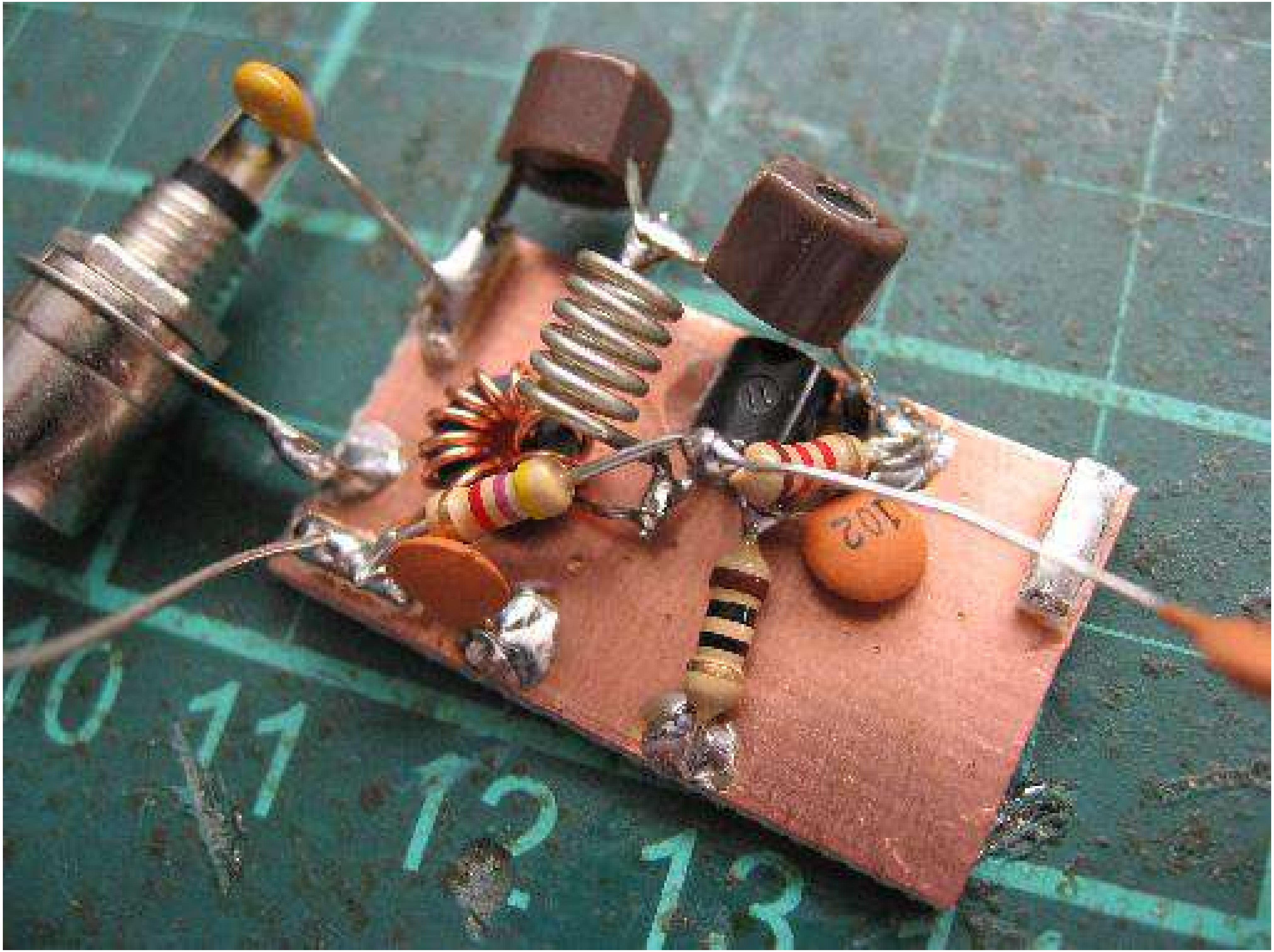

RL = 1 MΩ
RL = 0.5 MΩ
RL = 100 kΩ
RL = 20 kΩ
RL = 10 kΩ
VL (V)
d (m)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
8
10
12
14
16
18
20

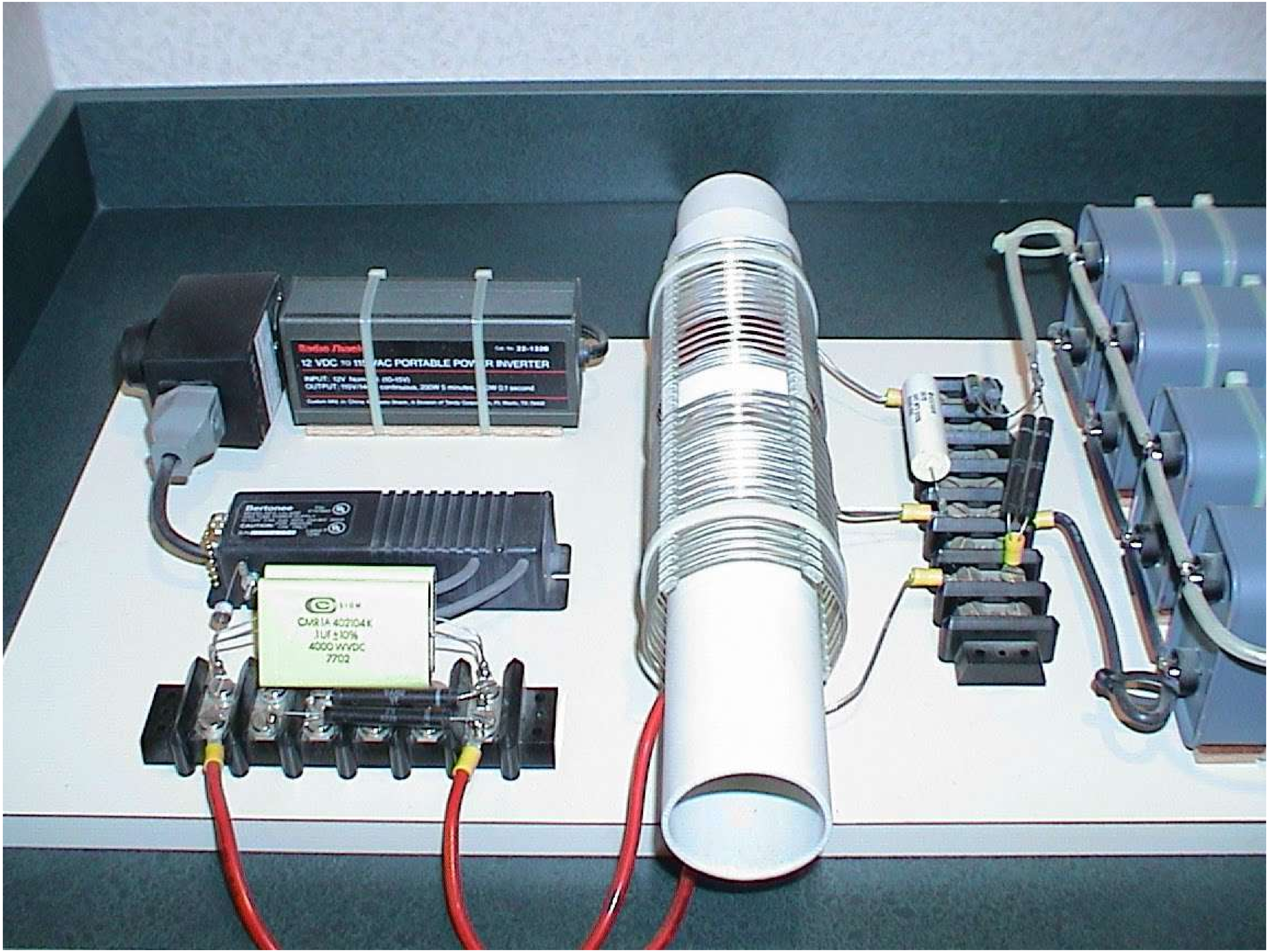

DENGYO
DENGYO
DENGYO
ch7 20MHz幅
Wi-Fi波収穫用
レクテナ


BILA IF AMP

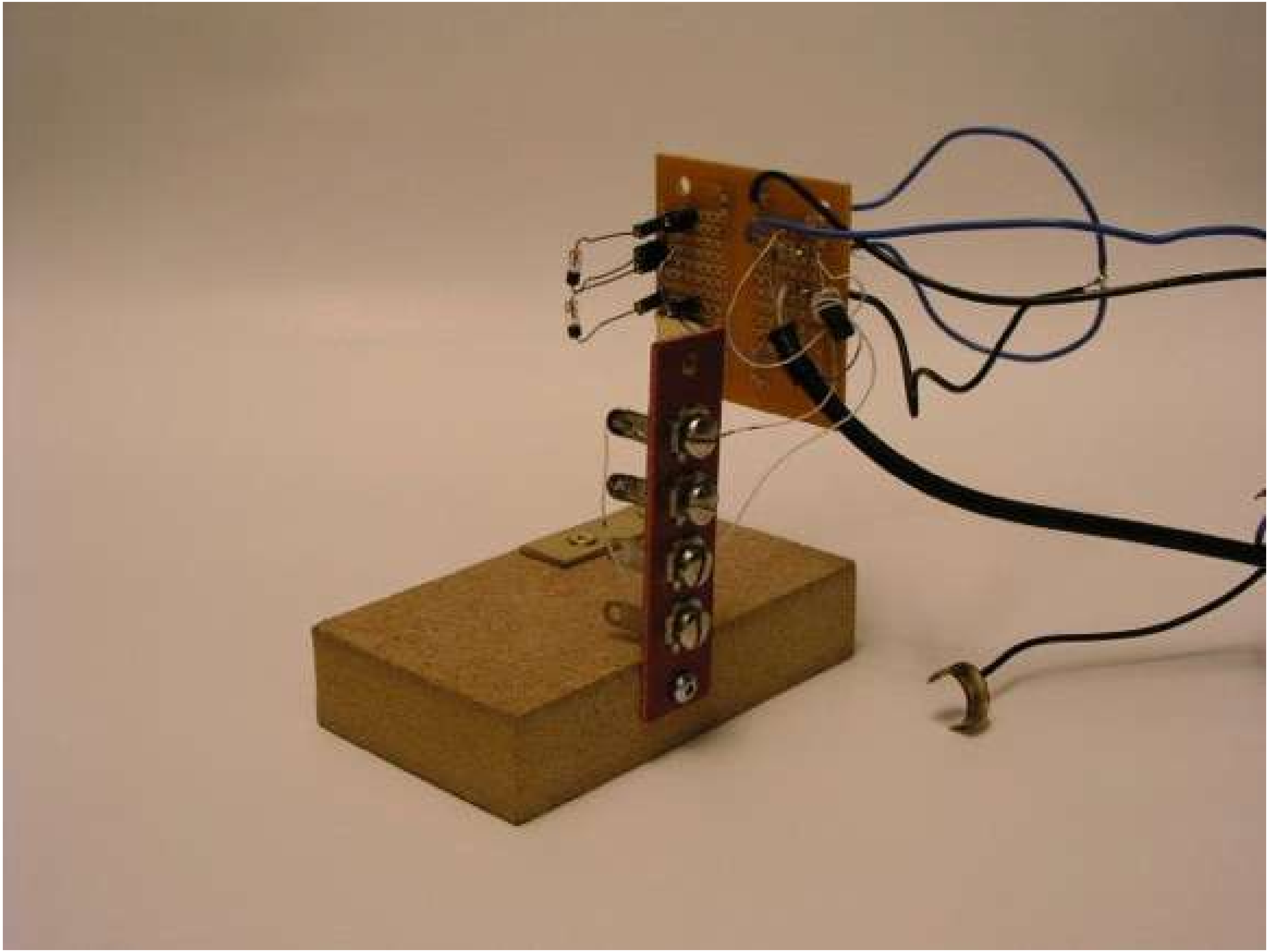

BILA IF AMP

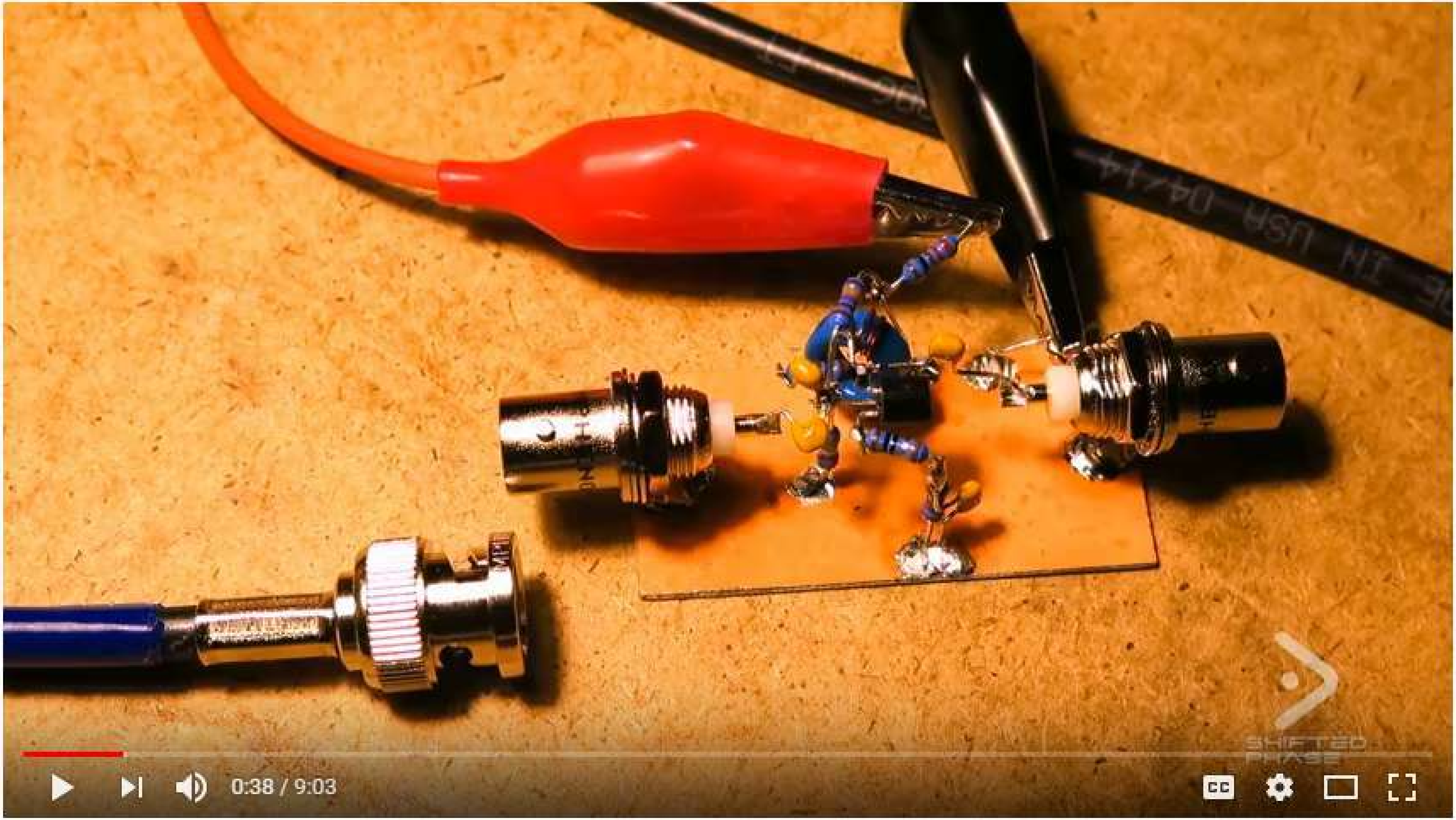




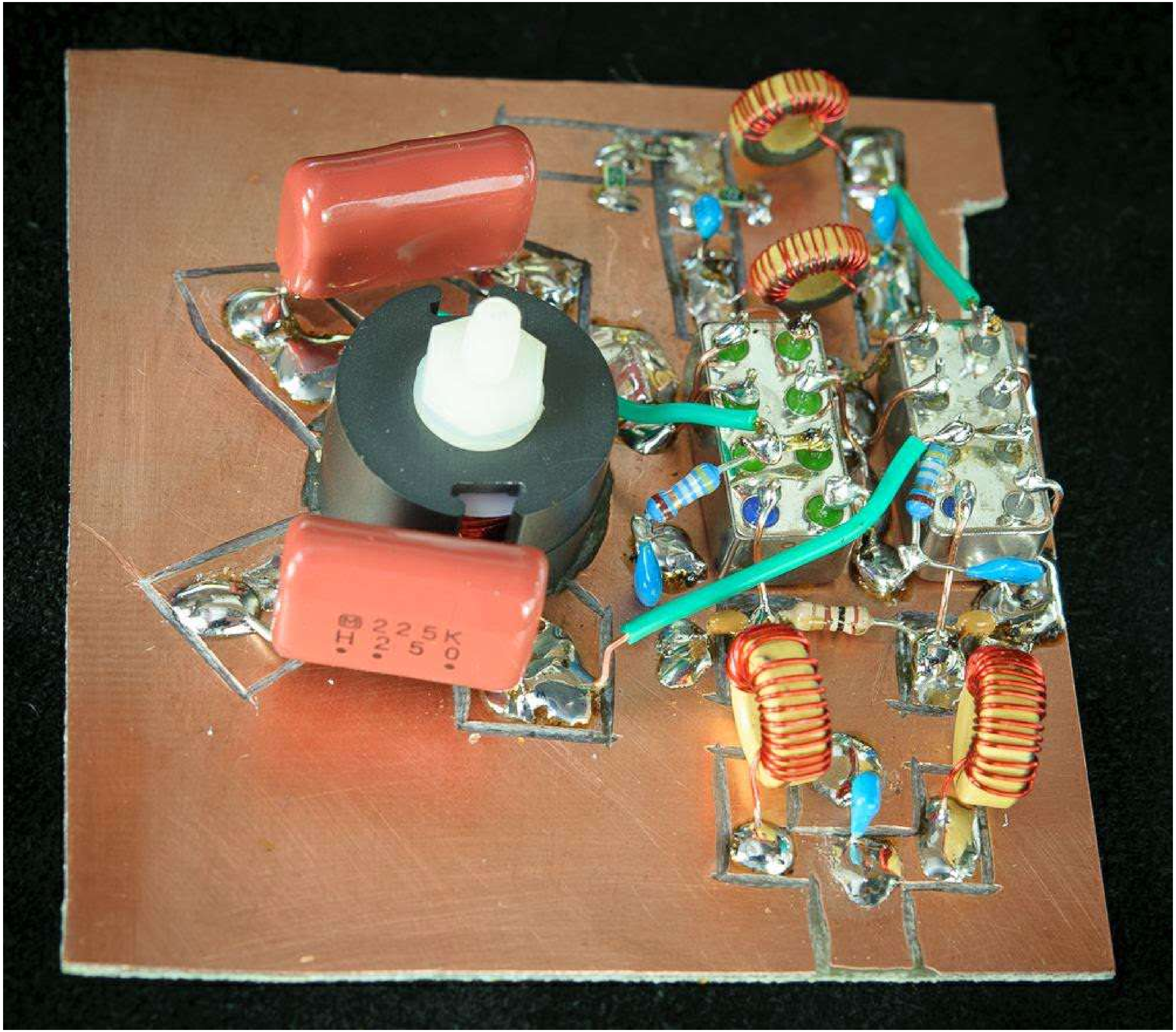


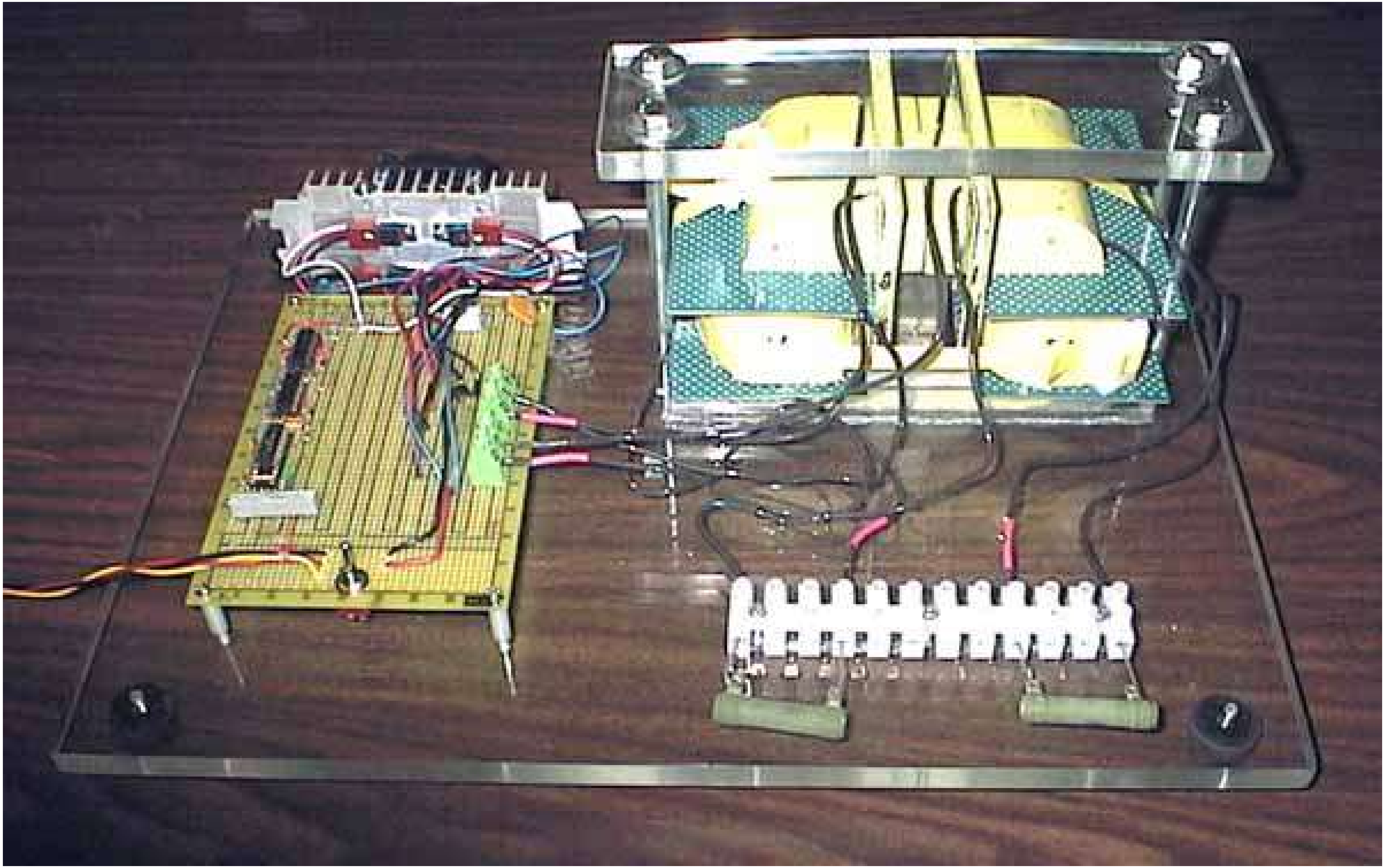
4000 WVDC
7702



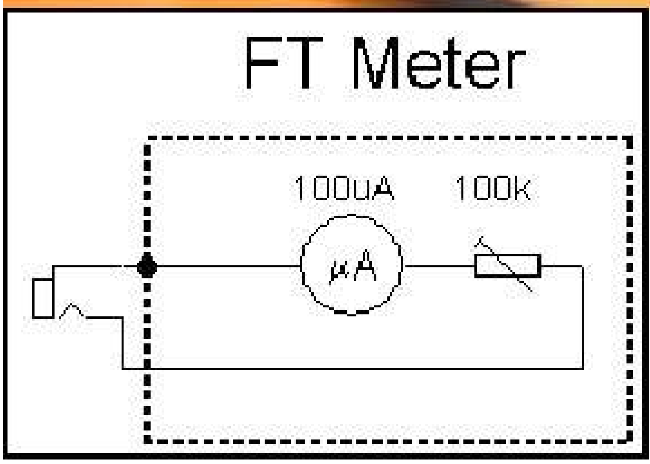


Electronics Tech - RF Amp


225K
H 250

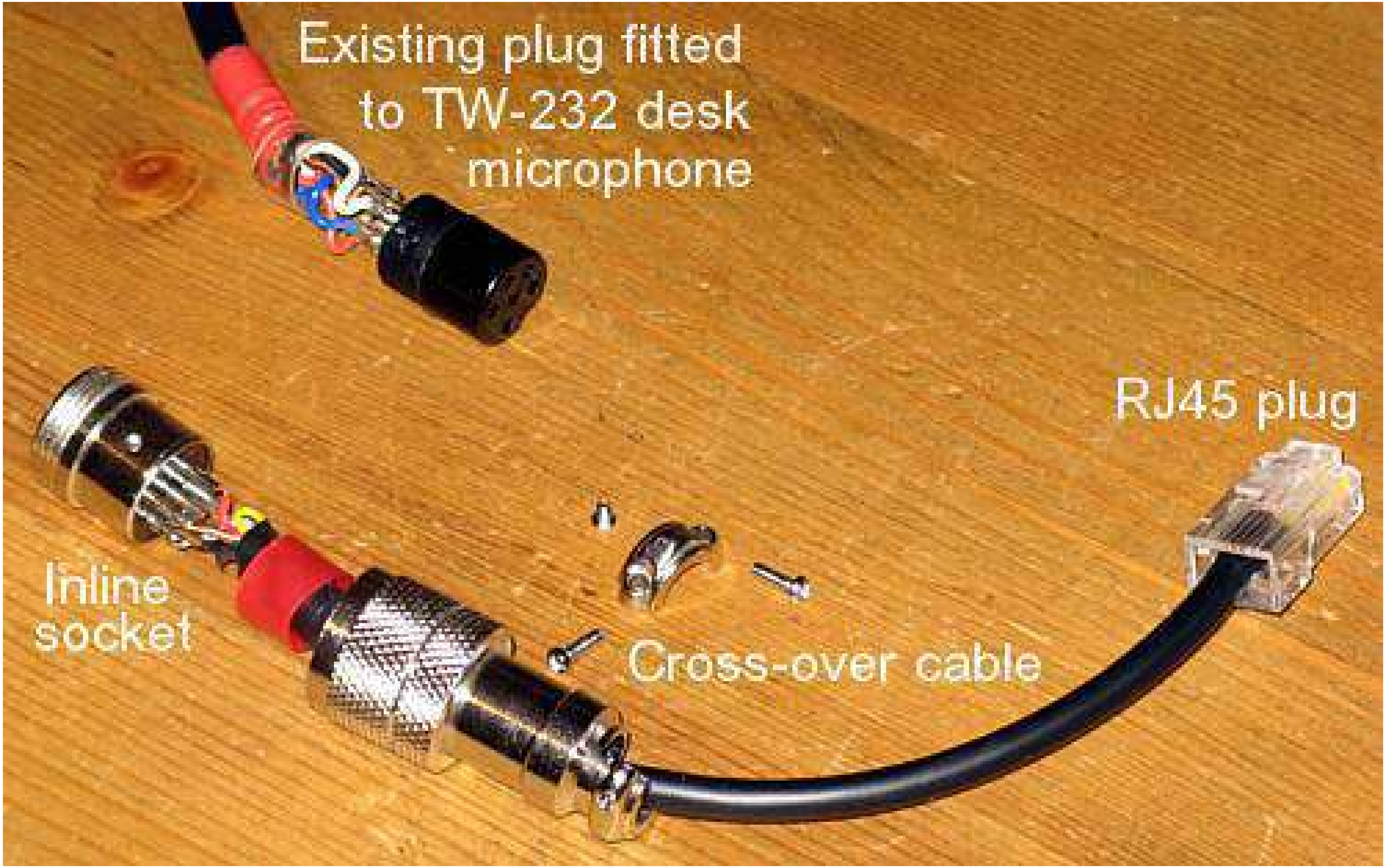


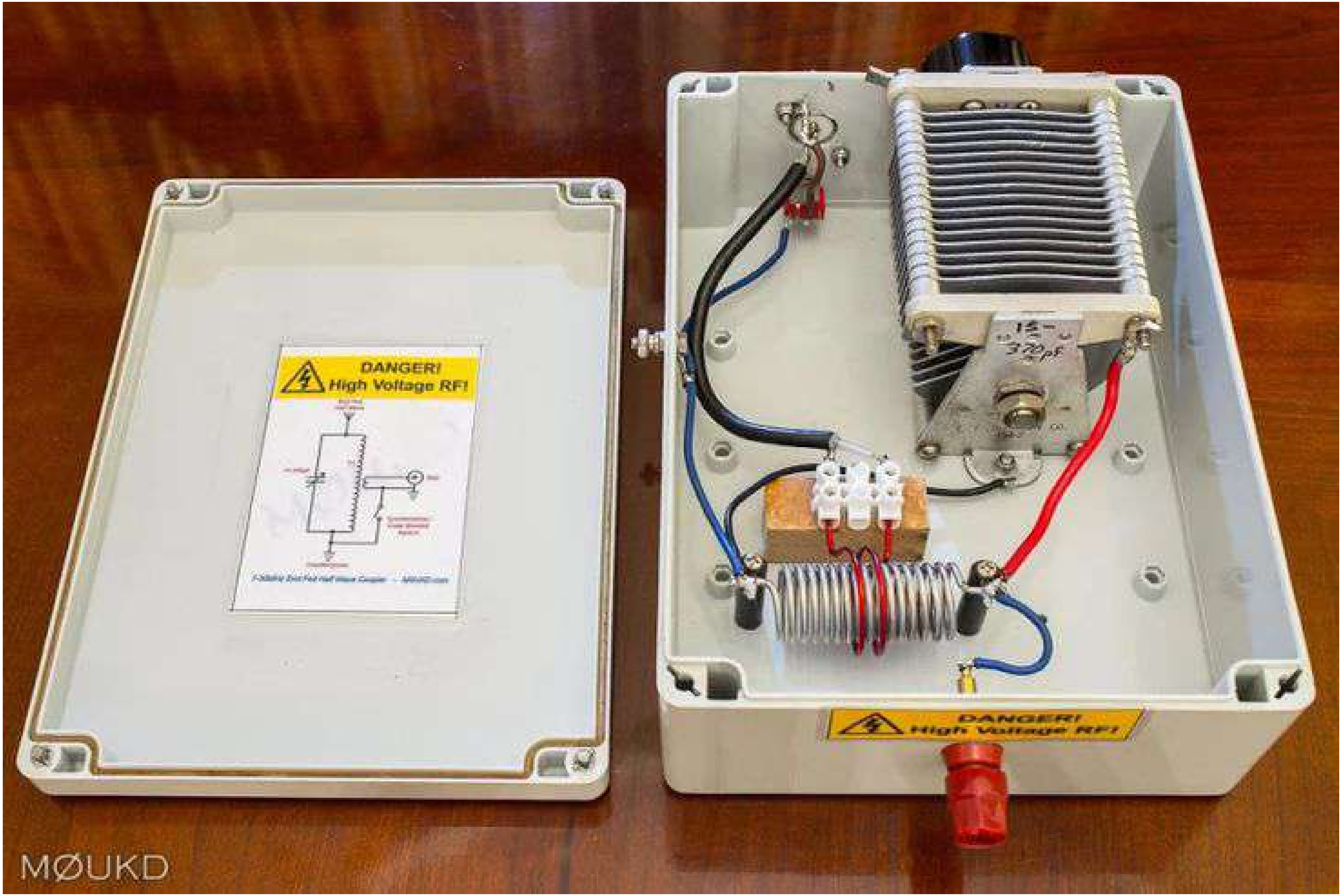

MØMTJ - www.mds975.co.uk

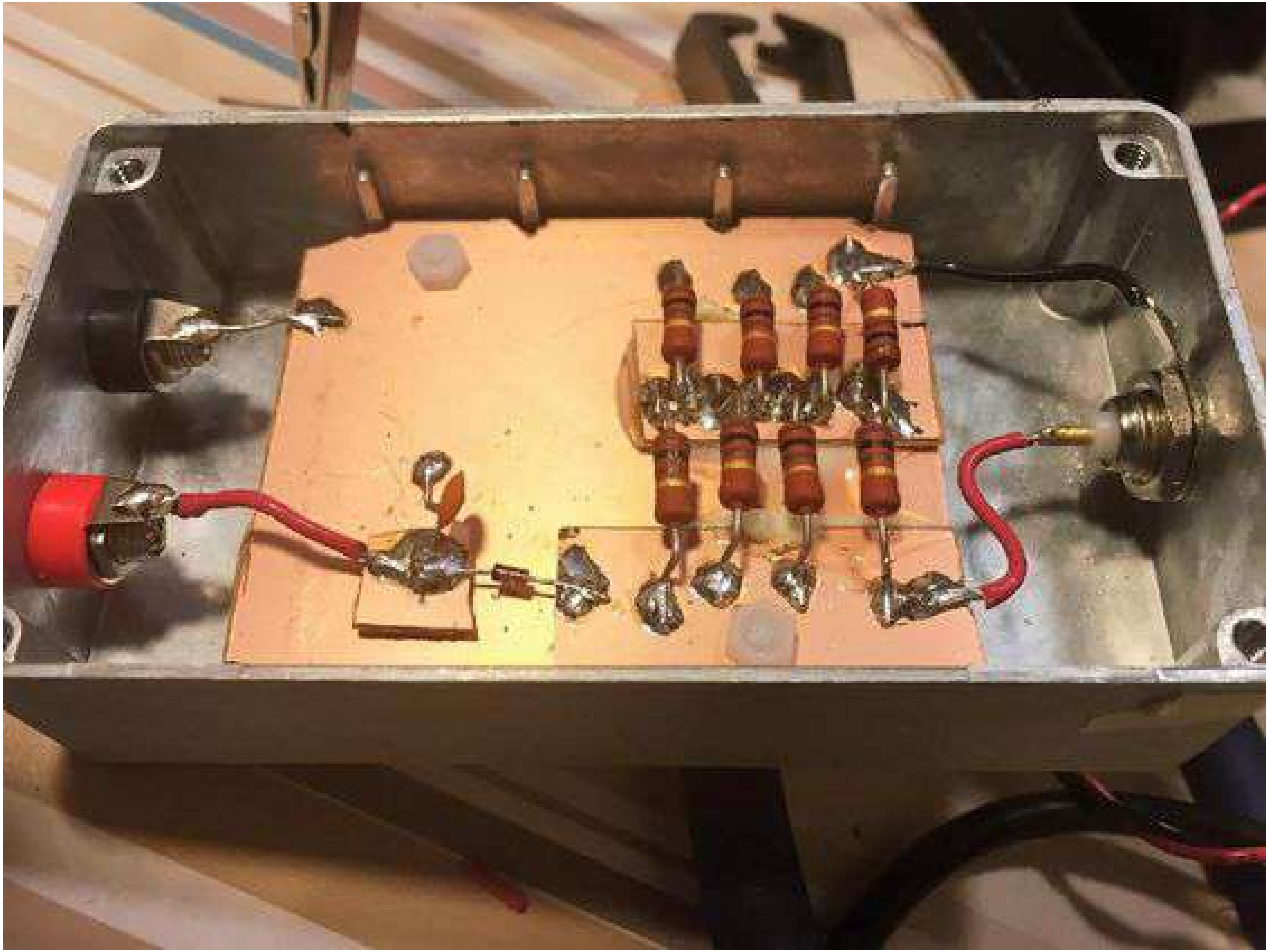

FT Meter
100uA
100k
μA

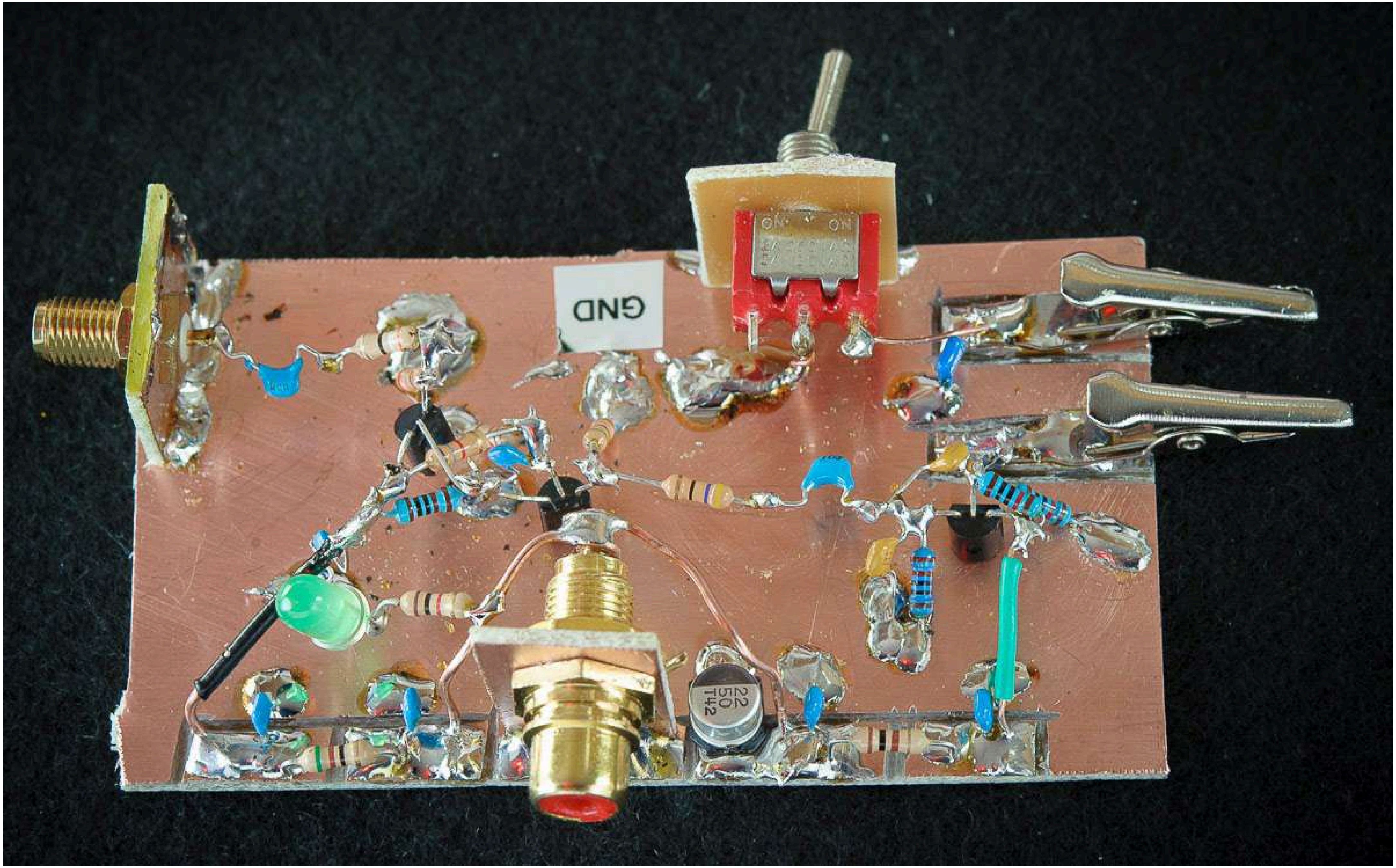

ANTENNA
GROUND
VK5JST
AERIAL ANALYSER
SET FREQUENCY
12.5-31MHz
6.8-16MHz
3.7-9MHz
2.2-5MHz
1.3-3MHz
DOWN
UP
07.100MHz R=047Ω
X=000Ω SWR=1.0
4DIGITS
POWER

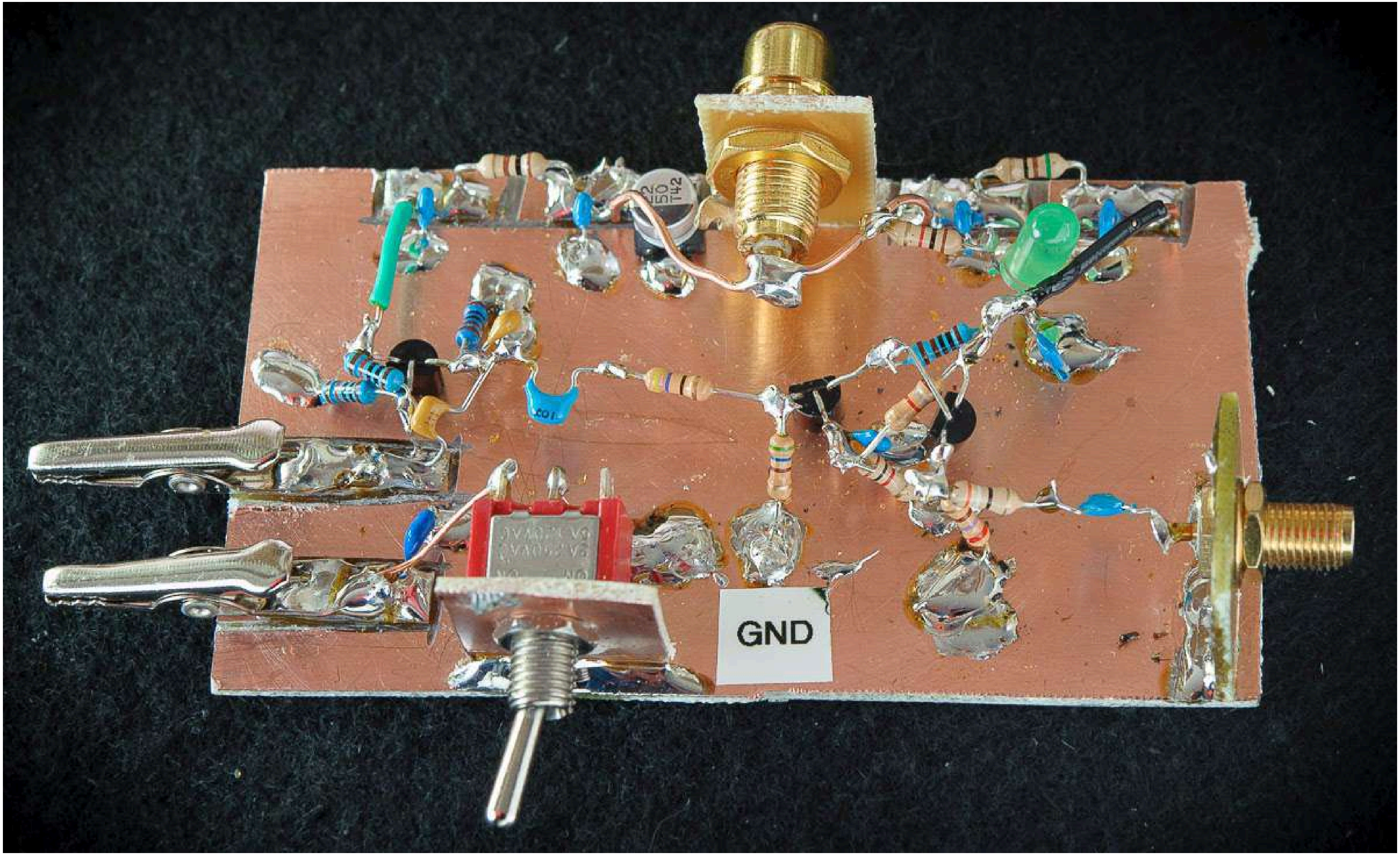

BRANE-POWER
brane-power.com

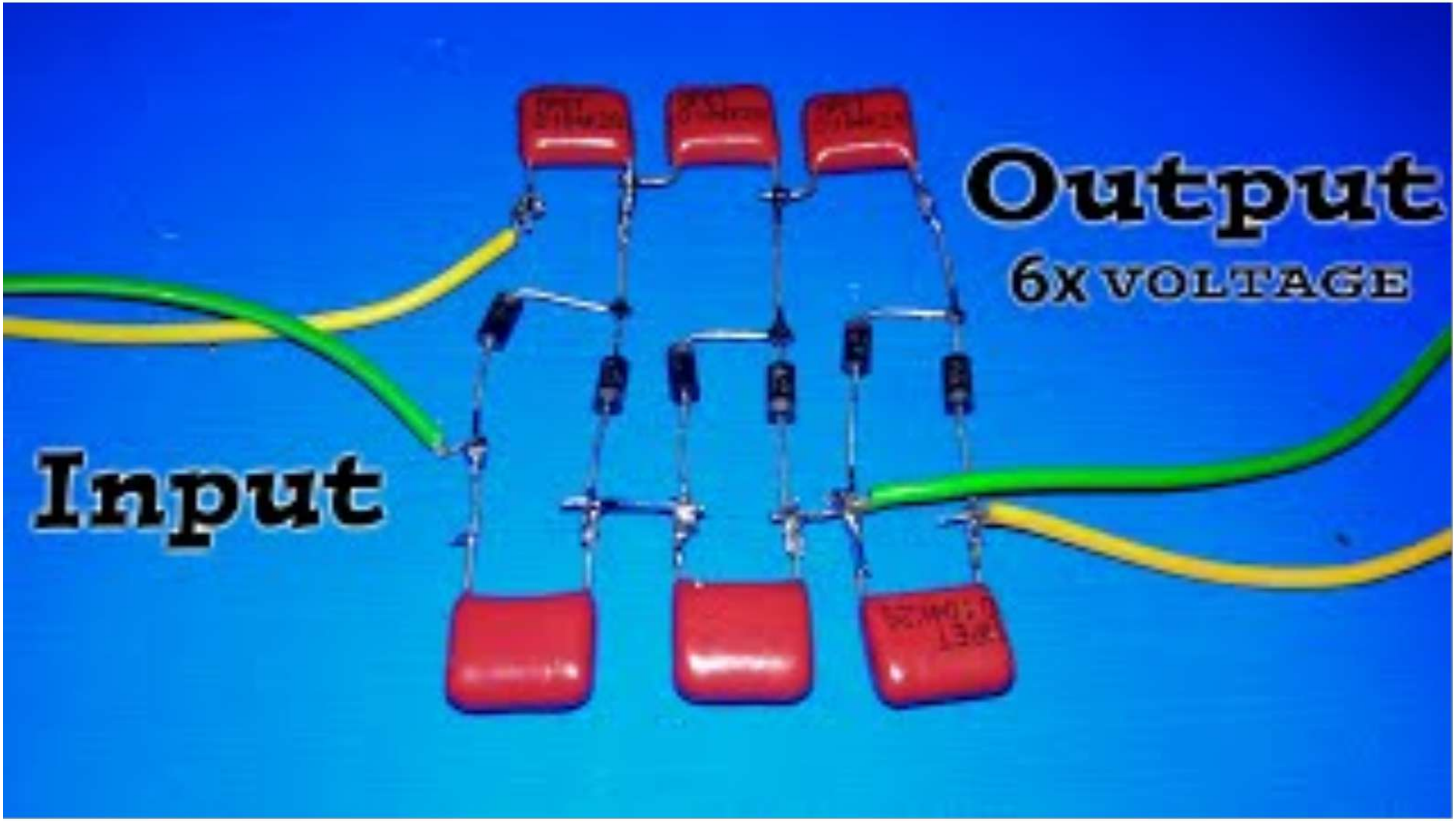

Existing plug fitted
to TW-232 desk
microphone
RJ45 plug
Inline
socket
Cross-over cable

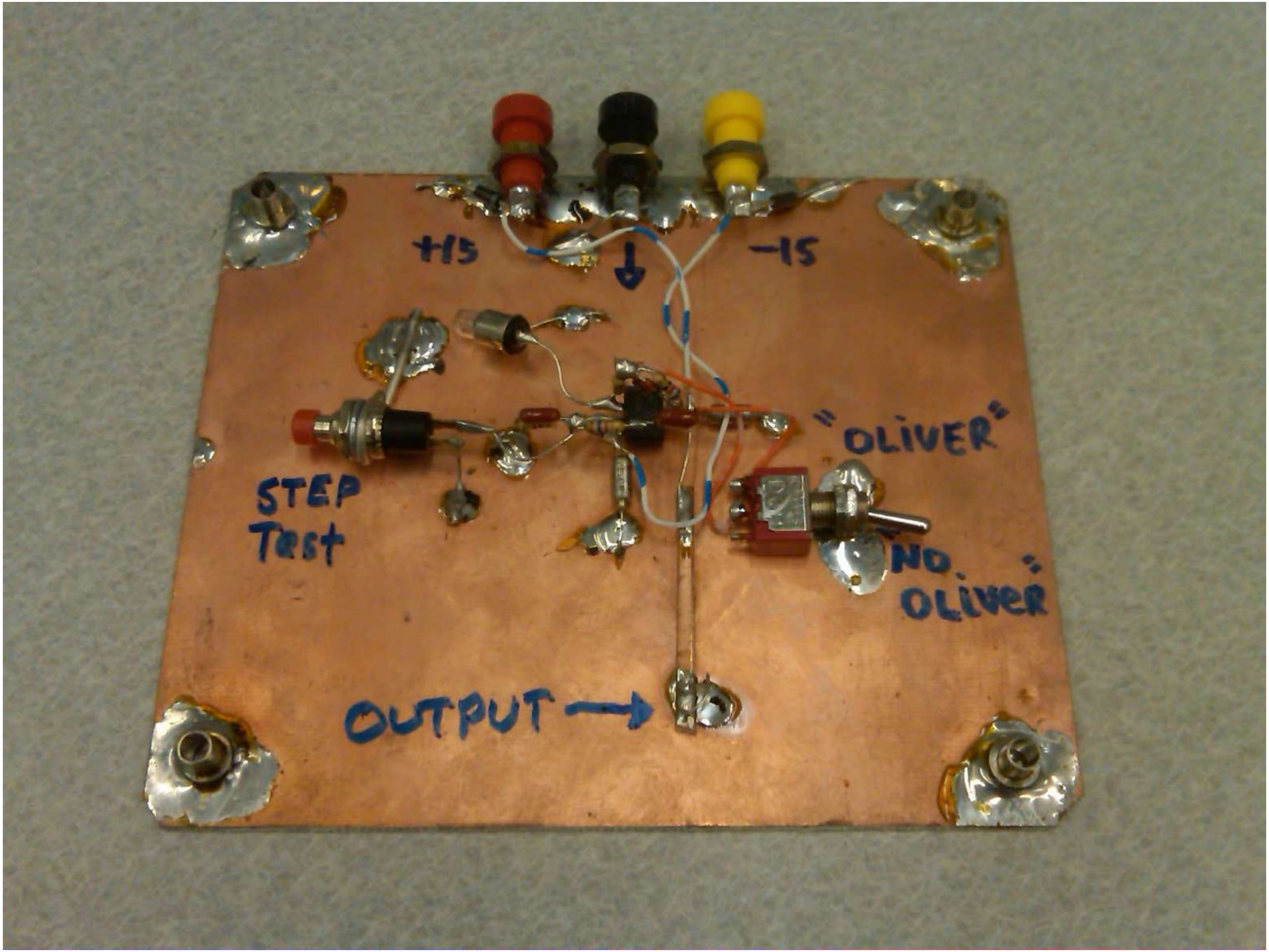

DANGER!
High Voltage RF!
DANGER!
High Voltage RF!
MØUKD




GND
ON
ON

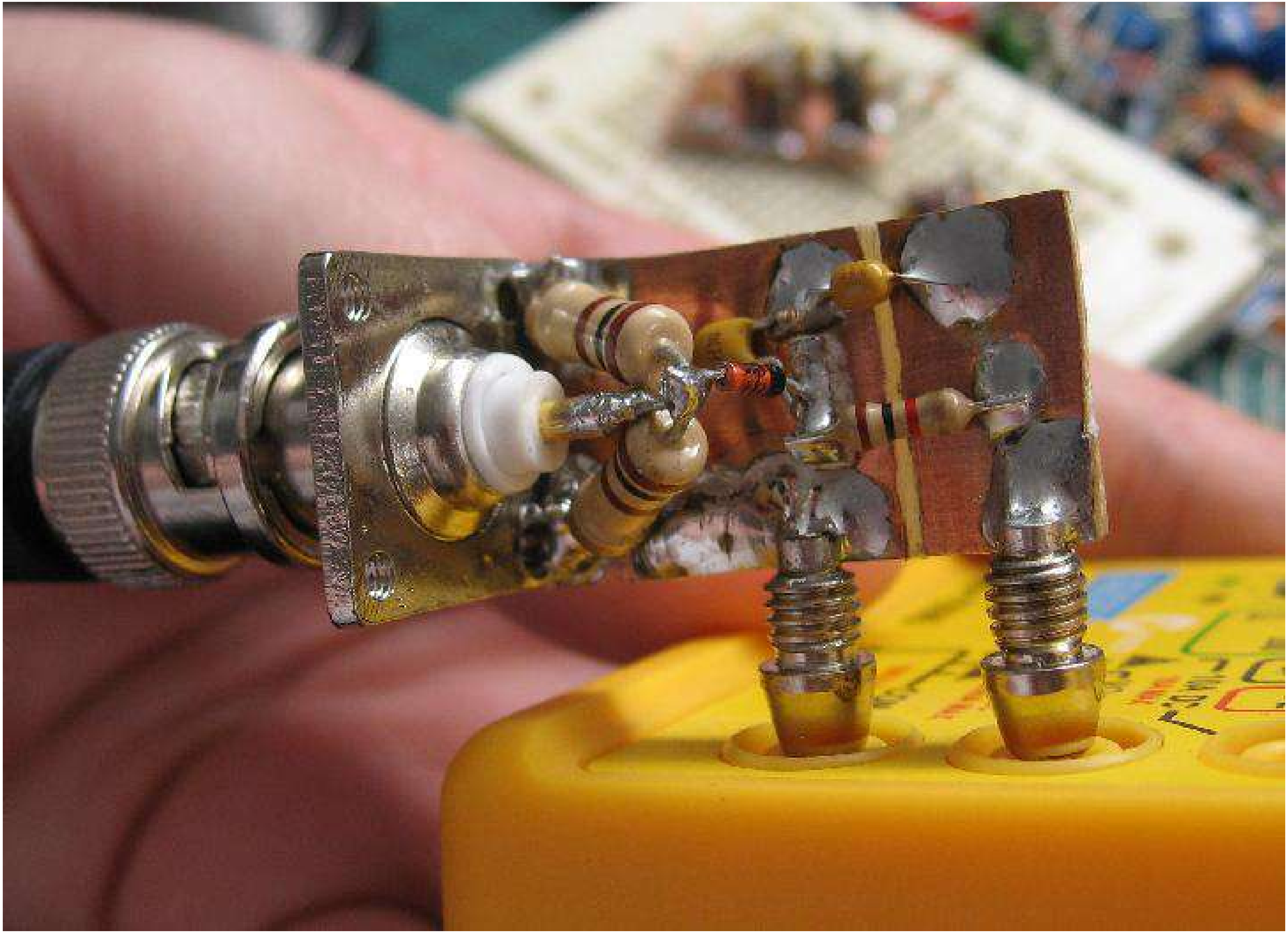

GND


Output
6x VOLTAGE
Input

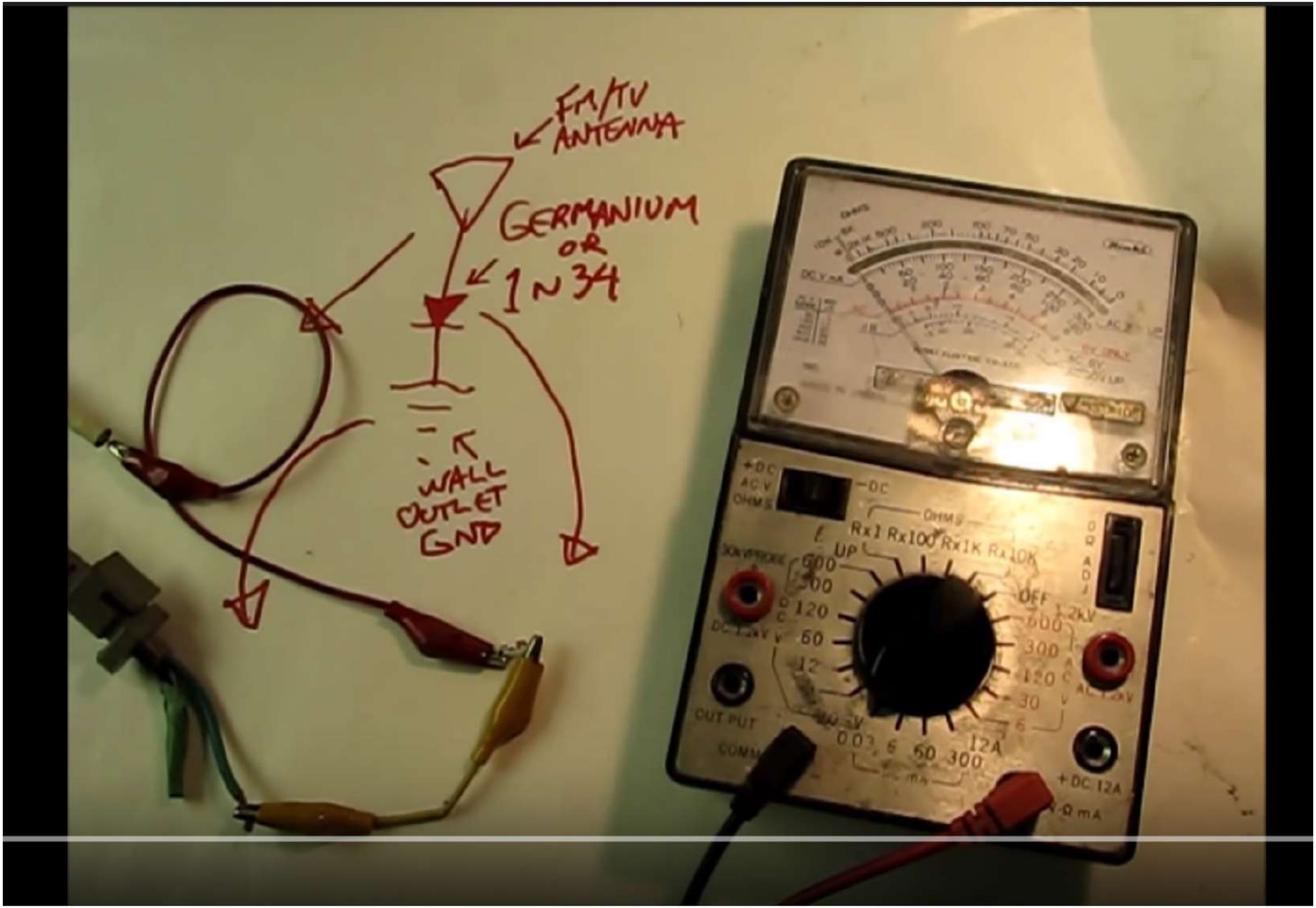


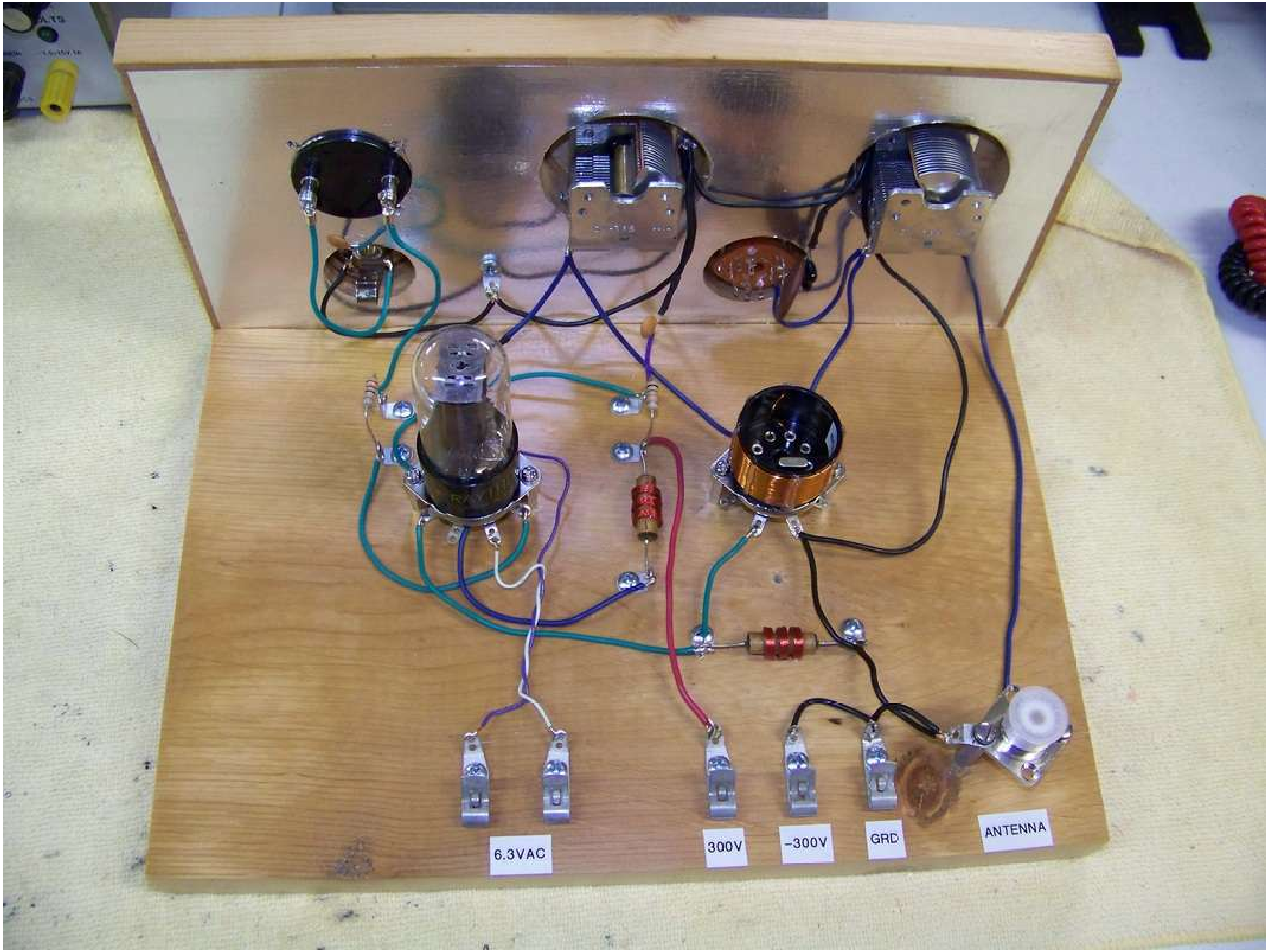
+15
-15
STEP
Test
"OLIVER"
"NO
OLIVER"
OUTPUT

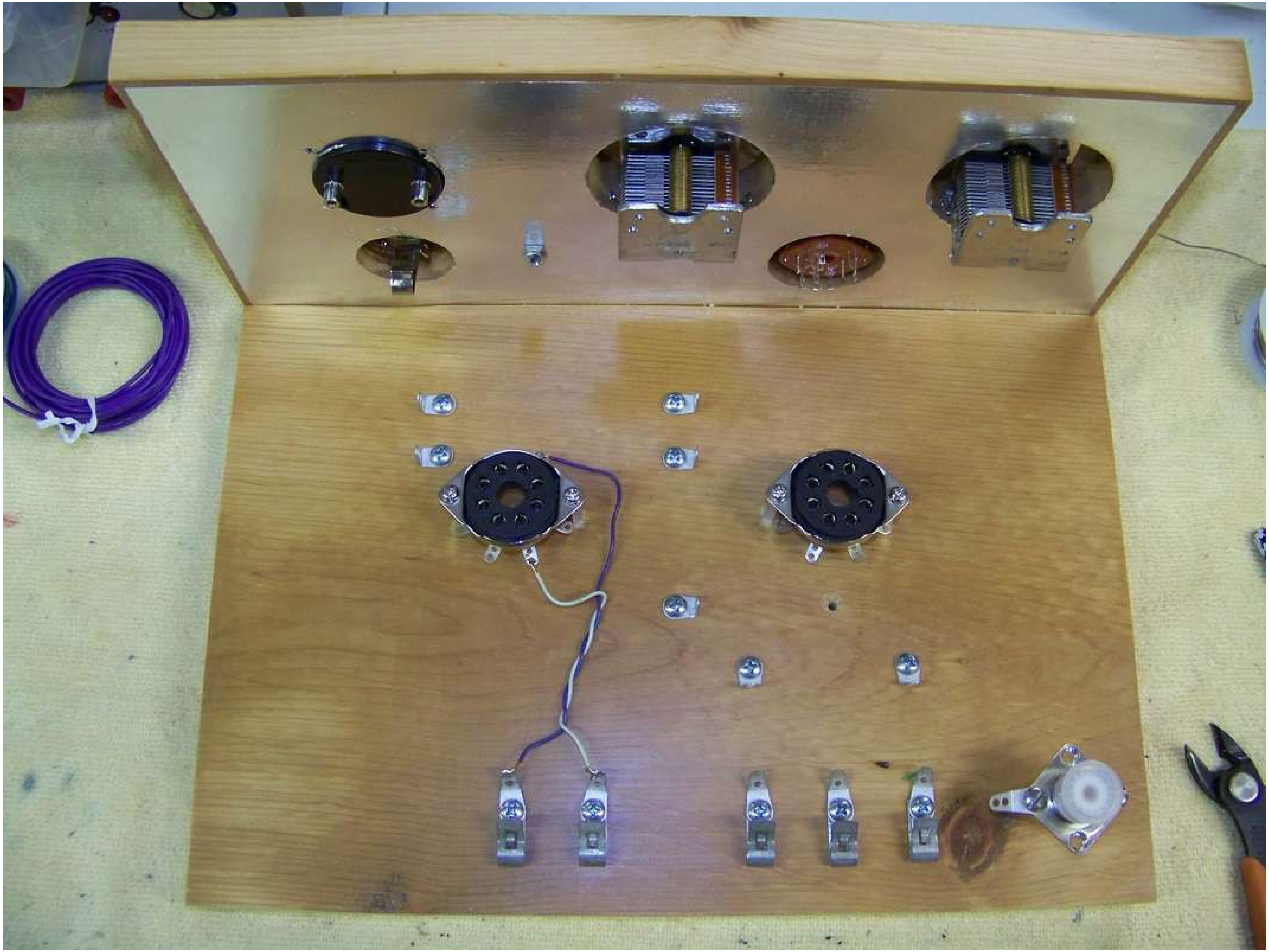

103

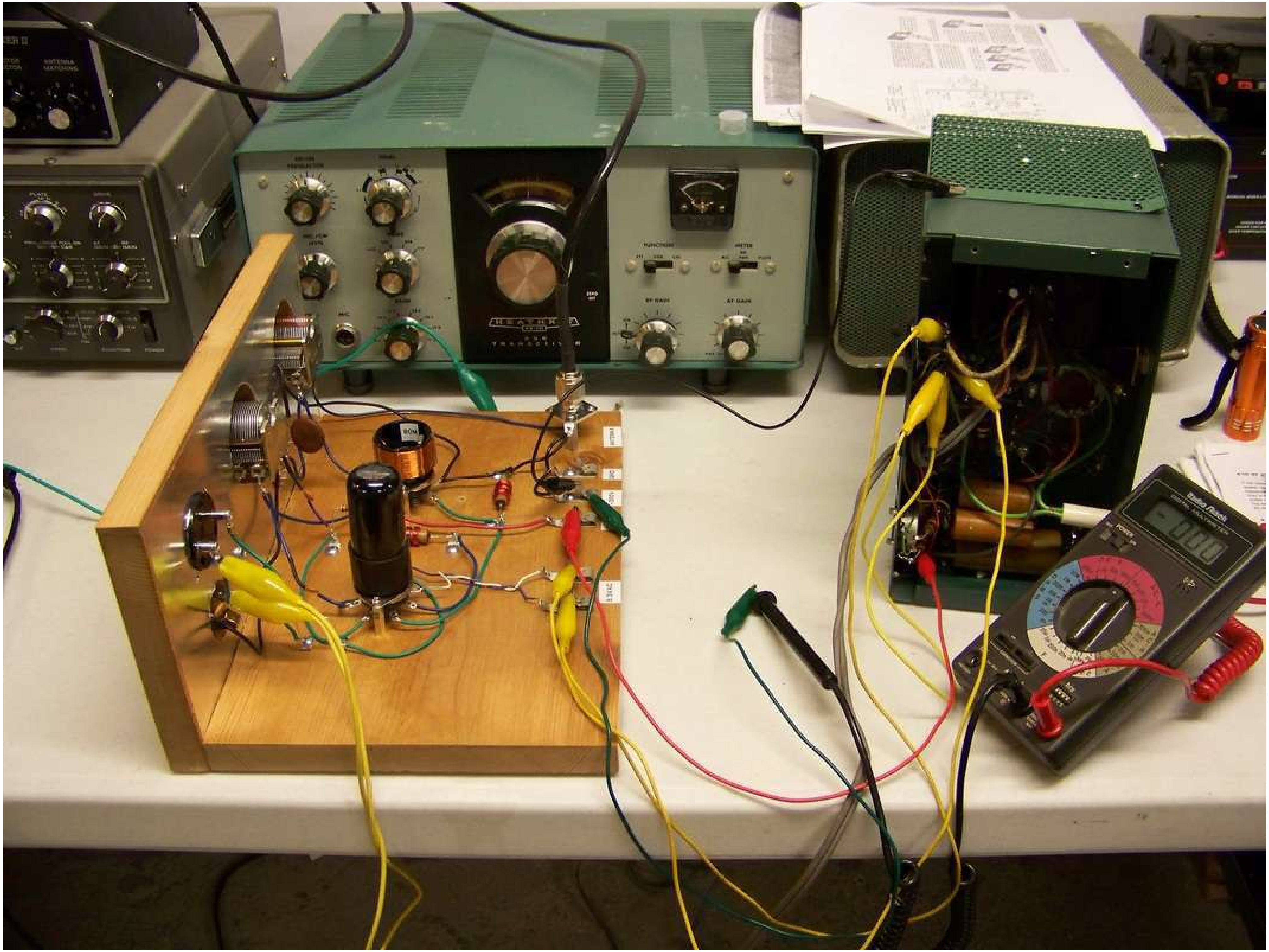



0:38 / 2:51


FM/TV
ANTENNA
GERMANIUM
OR
1N34
WALL
OUTLET
GND


6.3VAC
300V
-300V
GRD
ANTENNA




FUNCTION
METER
RF GAIN
AF GAIN
Radio Shack

The "No Fibbin'" RF Field Strength Meter

The field strength meter is simple, effective and easy to construct. This project answers that age-old question—is anything radiating from this antenna?

The RF Signal Strength meter responding to my Kenwood TH-26AT transmitting on 147.900 MHz with 1 W, 2 feet away from the meter. The sensitivity control is set at mid range.

This low budget homebrew project will pay big dividends in making sure you get the best signal out of your antenna system. And it needs no batteries.

In the 25 years I have spent working as a telecommunications technician, one of the most useful, yet simple, pieces of test gear I have used is the RF field strength meter. Its only job is to give you a relative signal strength reading of near field RF signal radiated from a transmitting antenna. After the bench testing is done and antenna VSWR is measured, nothing else will give you a better idea of transmitter and antenna performance than the RF field strength meter.

Any ham who has a 146 MHz or a 440 MHz hand-held transceiver is at the mercy of the sales brochures when choosing the best flexible [rubber duck] antenna for your radio. How many times have you *not* been able to work a repeater or work simplex nearly as well as someone else who has a similar radio or one with even less RF output power than yours? How can you tell if the wire inside a flexible antenna has broken or if the antenna doesn't radiate well? The RF field strength meter will soon reveal how well (or how poorly) your antenna is radiating. The meter is great for determining the front to back ratio and forward gain of a Yagi or quad. You can also compare relative signal strength between a ¼, ½ and ⅝ wavelength antenna on your vehicle. You might be surprised at the results!

The "No Fibbin'" field strength meter can be made using parts that many hams already have around the shack. The best results will be obtained using germanium or Schottky small signal diodes, a metal enclosure and an analog meter movement (which has a low full-scale deflection current). The other component values are not critical; close is good enough. All the parts can be mounted on a small pre-punched PC board or they can be wired point-to-point without a PC board. In either case, keep the component leads as short as pos-

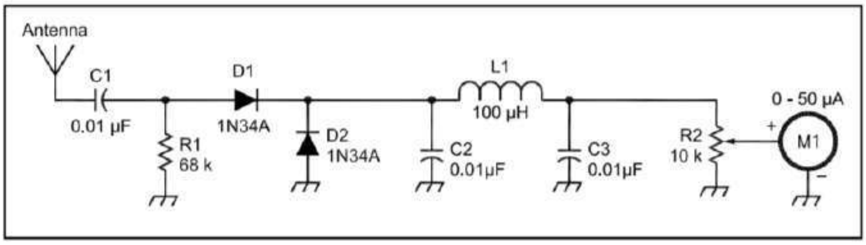


Figure 1—Schematic diagram of the signal strength meter. RS = Radio Shack (www.radioshack.com/).

C1-C3—0.01 µF capacitors (RS 272-1051 or equiv).
D1, D2—1N34A diodes (RS 276-1123).
L1—100 µH inductor (RS 273-102).
M1—Analog meter, 50 µA (RS 910-0360).
R2—Sensitivity control potentiometer, 10 kΩ (RS 271-1715).
Antenna—BNC female chassis mount socket. Antenna selection should match the frequency band for VHF and UHF. A random length of wire might work best for close field measurements on HF to 40 meters. Metal box enclosure is mandatory.

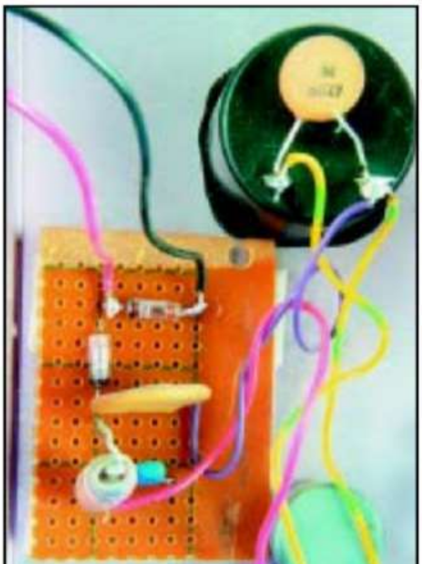


Figure 2—Close up of the circuit board.

Figure 3—The case, circuit board and antennas for the field strength meter.

FEEDBACK

◊ An error appears in Figure 1 of "The 'No Fibbin' RF Field Strength Meter" (Aug 2002 *QST*, p 28). The correct way to wire D2 is the anode to ground and the cathode to the anode of D1 (also the junction of R1 and D1). As shown in the photos, C1 is optional and an additional 0.01 µF bypass capacitor can be installed across the meter movement.—*John Noakes, VE7NI*

STRAYS

MILITARY RADIO COLLECTORS TO MEET

◊ The Military Radio Collectors Association will hold its third annual meet at the West End Fairgrounds, Gilbert, Pennsylvania, September 6-8, 2002. Hours are 0800 to 1700 local time. Activities include equipment displays, on the air operation, formal presentations and a swapmeet. For more information, see **www.milradio.org/** or contact Pete Hamersma, WB2JWU, PO Box 467, Holderness, NH 03245, e-mail **pehamers@worldpath.net**.

Previous • Next Strays

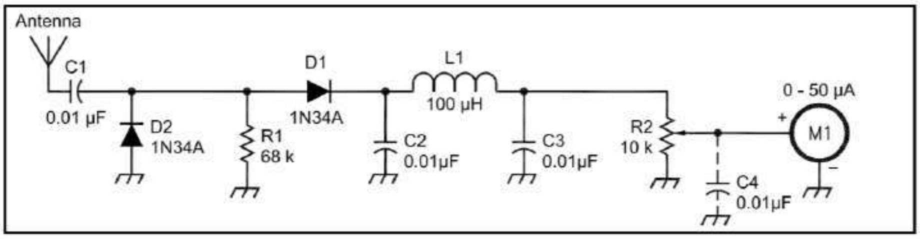
FEEDBACK

◊ In the item concerning magnetic headings in "The Doctor is IN," *QST*, Jul 2002, p 47, the Doctor reversed his plus and minus signs. The first paragraph should read:

The ARRL maps are calibrated in True degrees, referred to True North ("straight up" on the maps). Magnetic headings are calculated by taking the True headings and subtracting the Magnetic Declination (also called the Magnetic Variation in nautical applications). For example, if the map shows a variation (declination) of 12° east, this means that Magnetic North is 12° east of "straight up." So, a heading of 45° True is equivalent to a magnetic heading of 45° – 12° east = 33° magnetic. For a westerly variation (for example 6° west), add the value for variation. Thus, 45° True + 6° west = 51° magnetic. An old mariner's ditty, "east is least; west is best," can help you remember that you subtract an easterly declination or add a westerly declination to convert True to Magnetic.

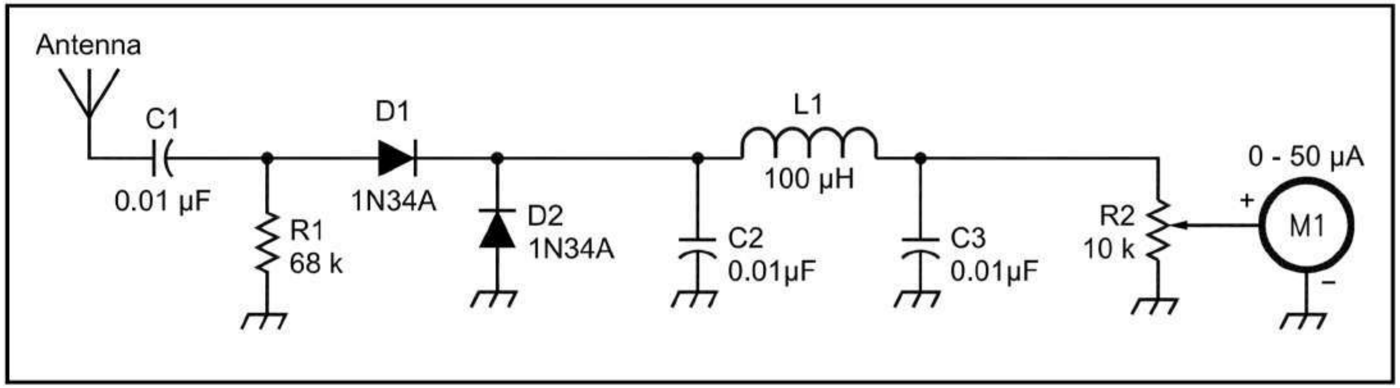
◊ An error appears in Figure 1 of "The 'No Fibbin' RF Field Strength Meter" (Aug 2002 *QST*, p 28). The correct way to wire D2 is the anode to ground and the cathode to the anode of D1 (also the junction of R1 and D1). As shown in the photos, C1 is optional and an additional 0.01 µF bypass capacitor can be installed across the meter movement.—*John Noakes, VE7NI*

Previous • Next Feedback



Revised Figure 1

mercy of the sales brochures when choosing the best flexible [rubber duck] antenna for your radio. How many times have you *not* been able to work a repeater or work simplex nearly as well as someone else who has a similar radio or one with even rent). The other component values are not critical; close is good enough. All the parts can be mounted on a small pre-punched PC board or they can be wired point-to-point without a PC board. In either case, keep the component leads as short as pos-



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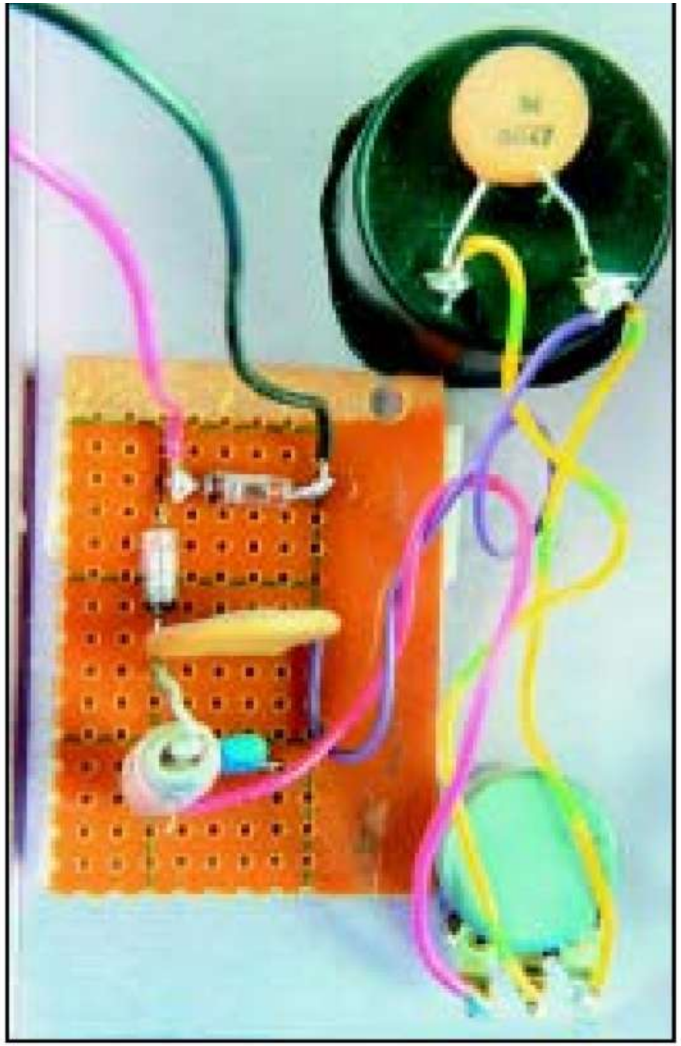

Figure 2—Close up of the circuit board.

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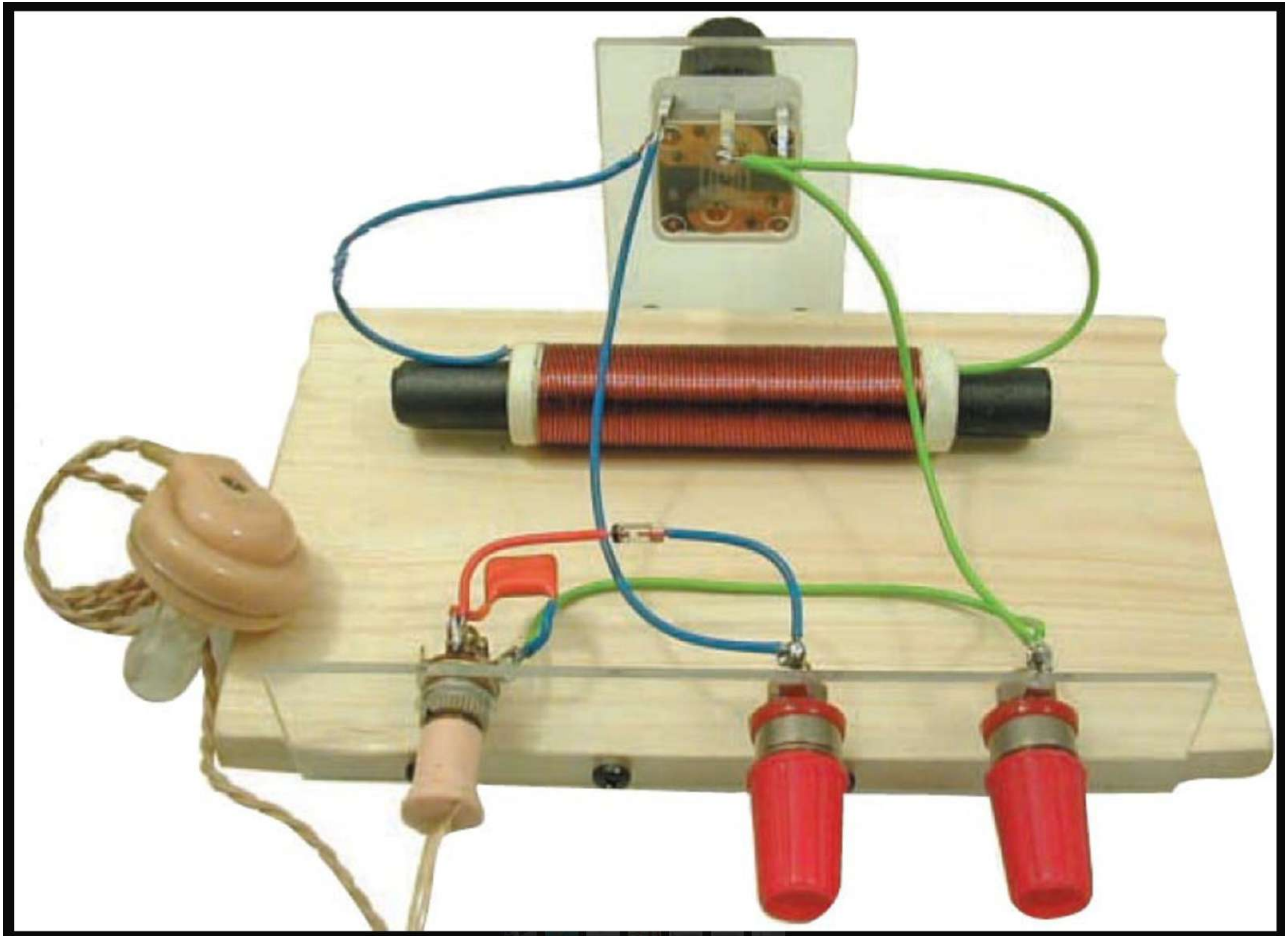
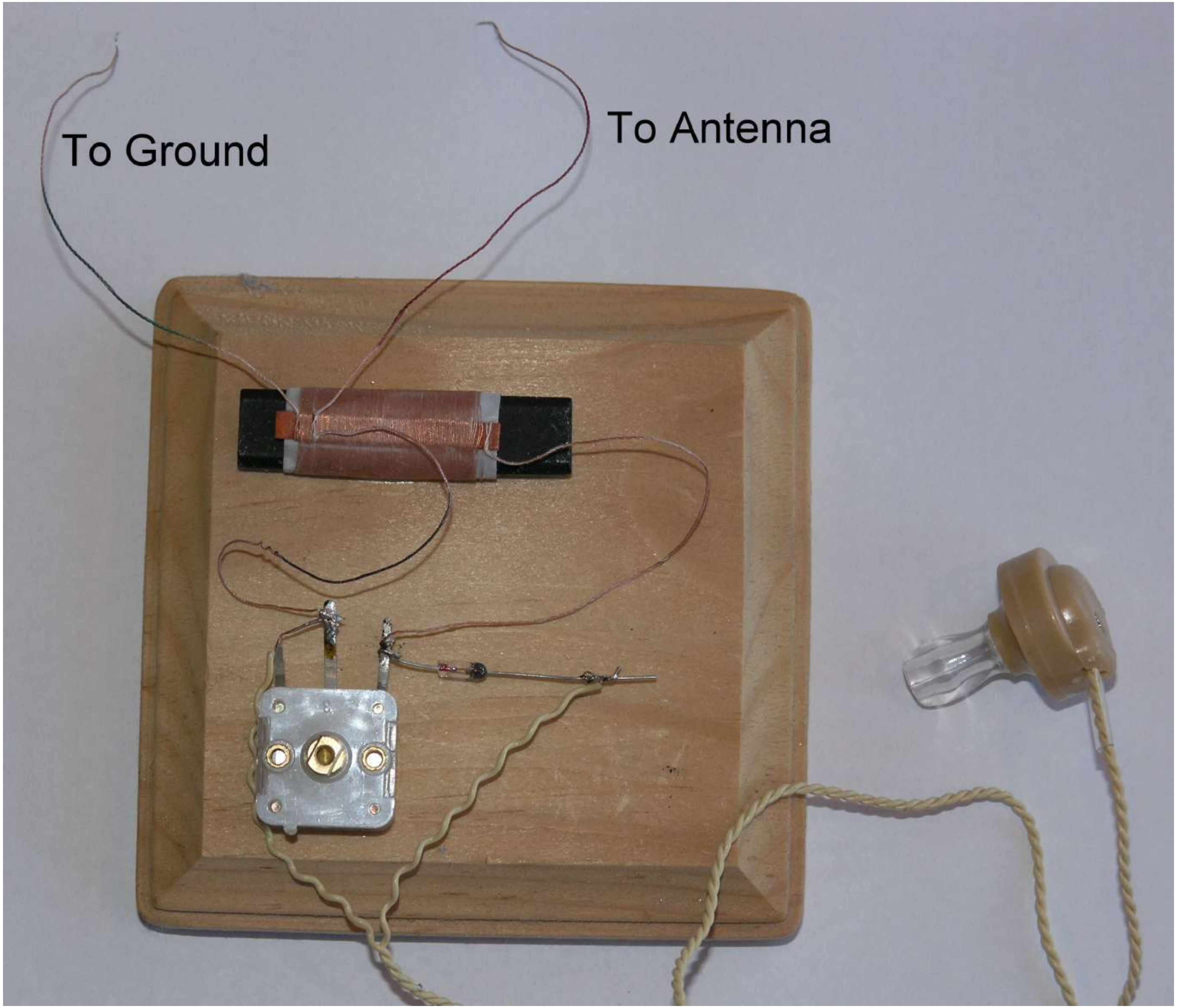
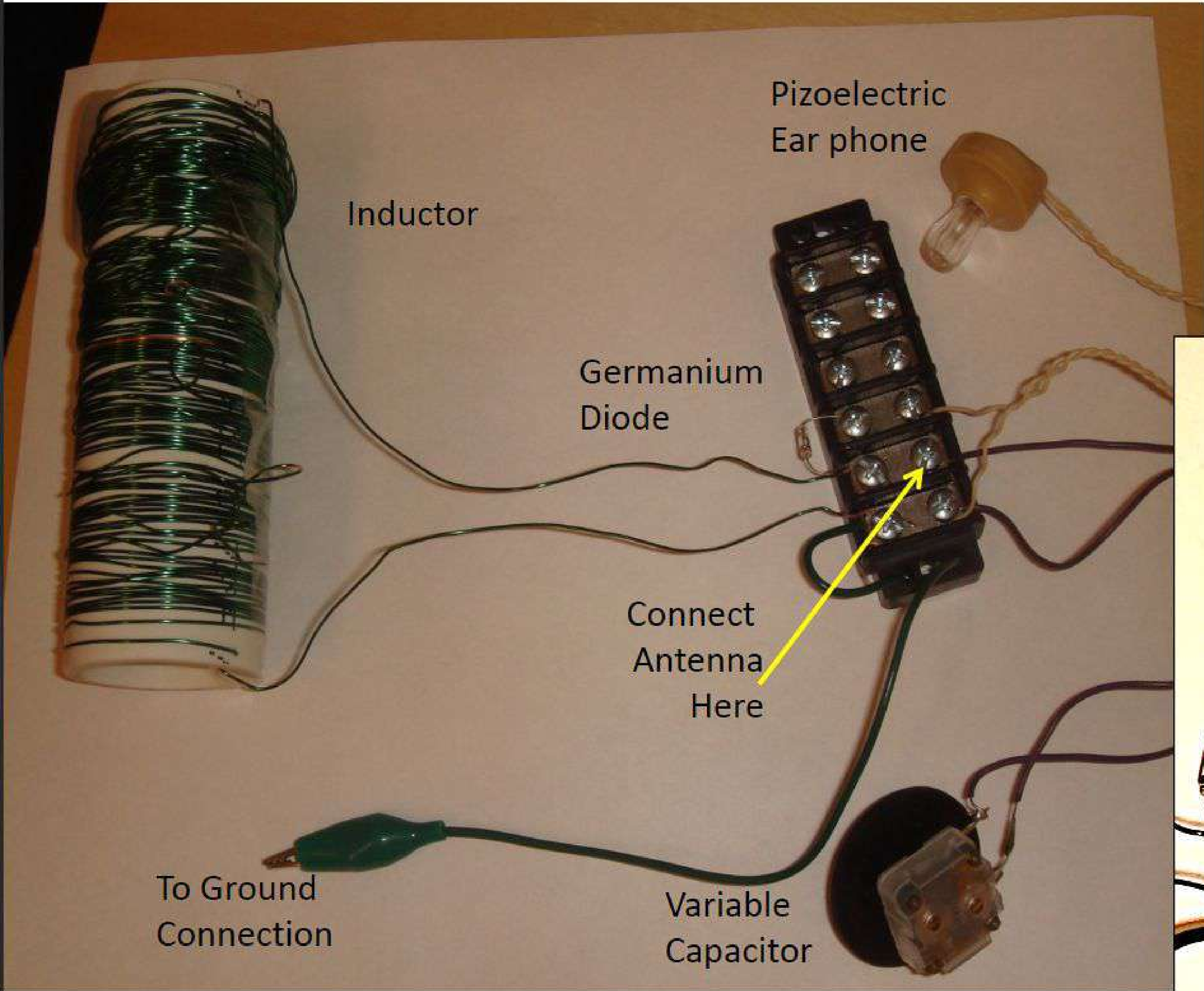



To Ground
To Antenna


Pizoelectric
Ear phone
Inductor
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Diode
Connect
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Connection
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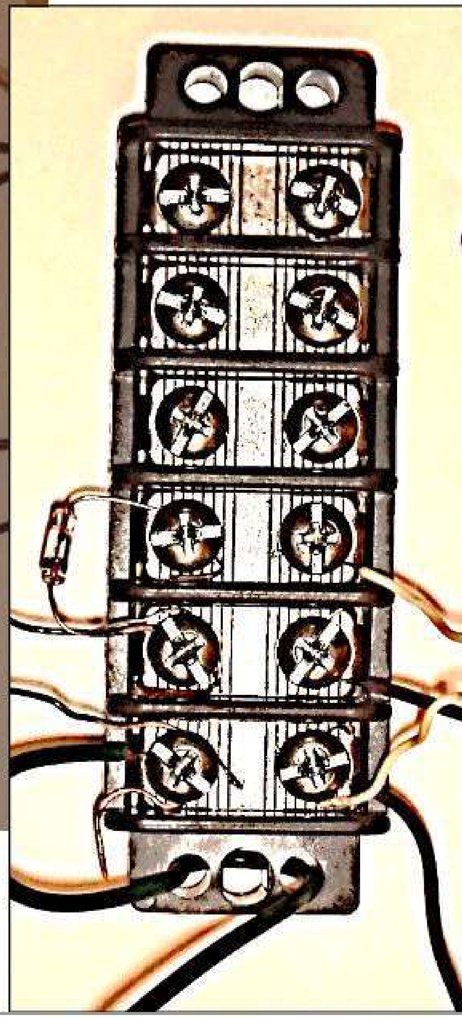
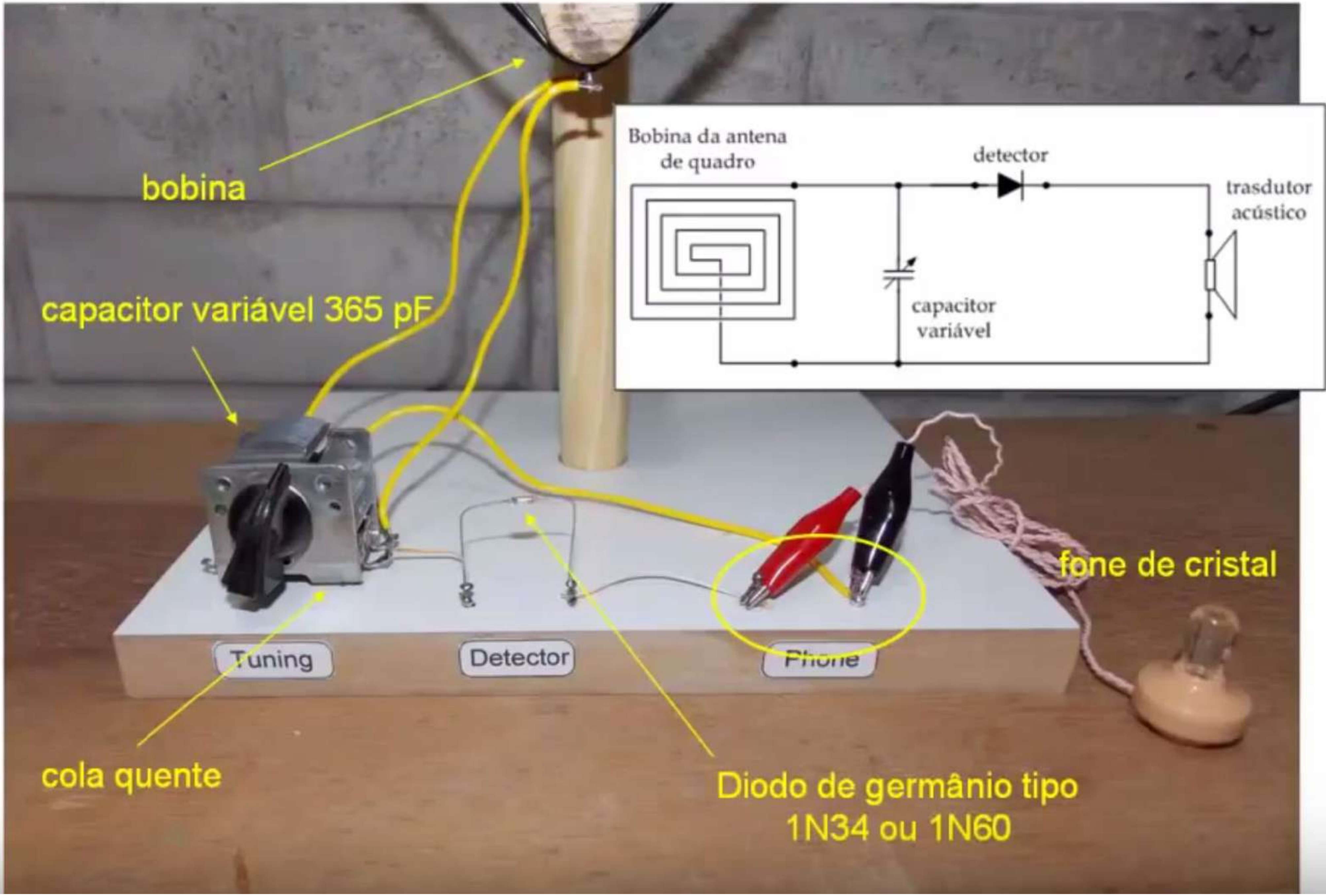
Capacitor




bobina
capacitor variável 365 pF
cola quente
Diodo de germânio tipo
1N34 ou 1N60
fone de cristal
Tuning
Detector
Phone
Bobina da antena
de quadro
detector
trasdutor
acústico
capacitor
variável

Radio a galena FM

per la “banda commerciale” 88 – 108 MHz

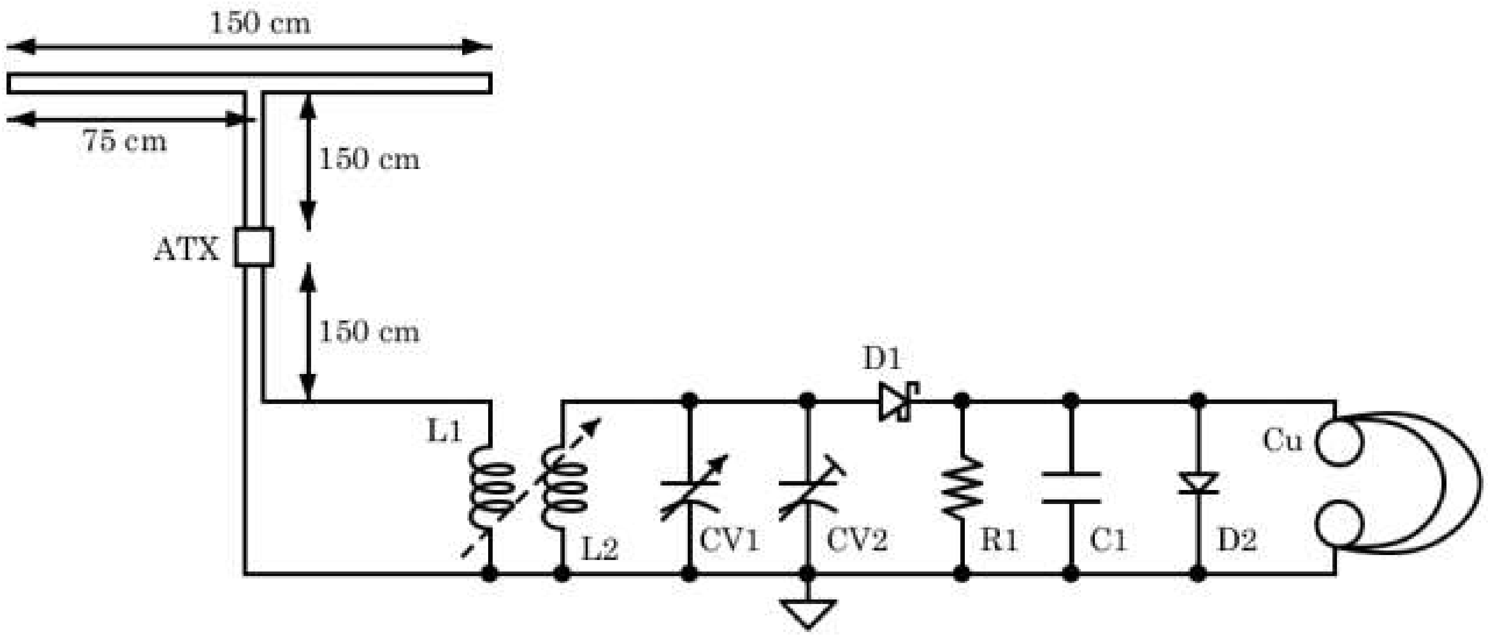


Figura 2: Schema elettrico della radio a galena FM.

I componenti adoperati sono:

- L1 = vedi testo (sezione Bobine L1 e L2);
- L2 = $0.137\mu H$, vedi Figura 7;
- CV1 = Johnson 160-211-1 $(2.7 - 10.8)pF$ per sezione;
- CV2 = trimmer tubolare da $(5 \div 15)pF$;
- D1 = diodo Schottky Skyworks modello SMS7630-001;
- D2 = diodo di segnale 1N4148;
- R1 = $47k\Omega$, 1/4W;
- C1 = $100pF$ ceramico a disco;
- Cu = cuffie ad alta impedenza ($2k\Omega$ o superiore);
- ATX = connettore ATX femmina e header pin;
- Due connettori banana femmina.

Figura 8: Vista posteriore del cablaggio

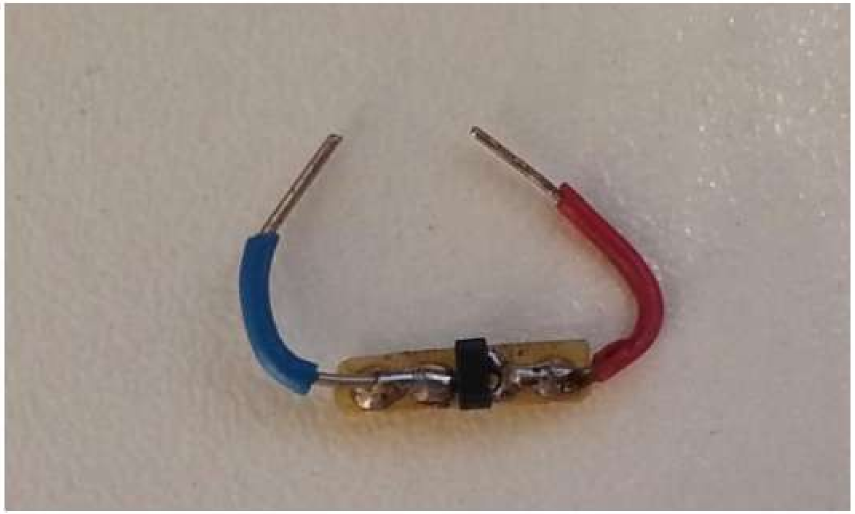
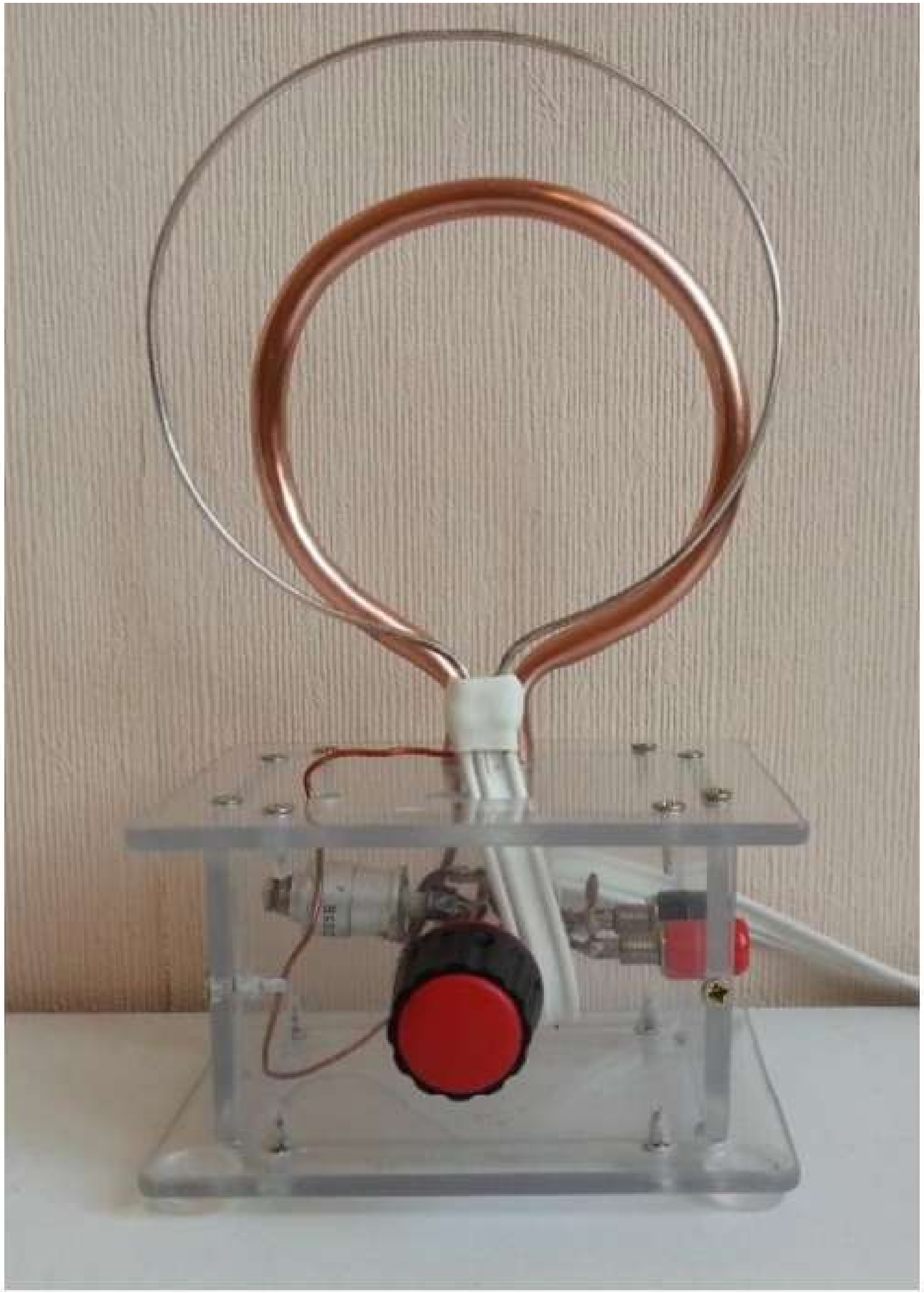
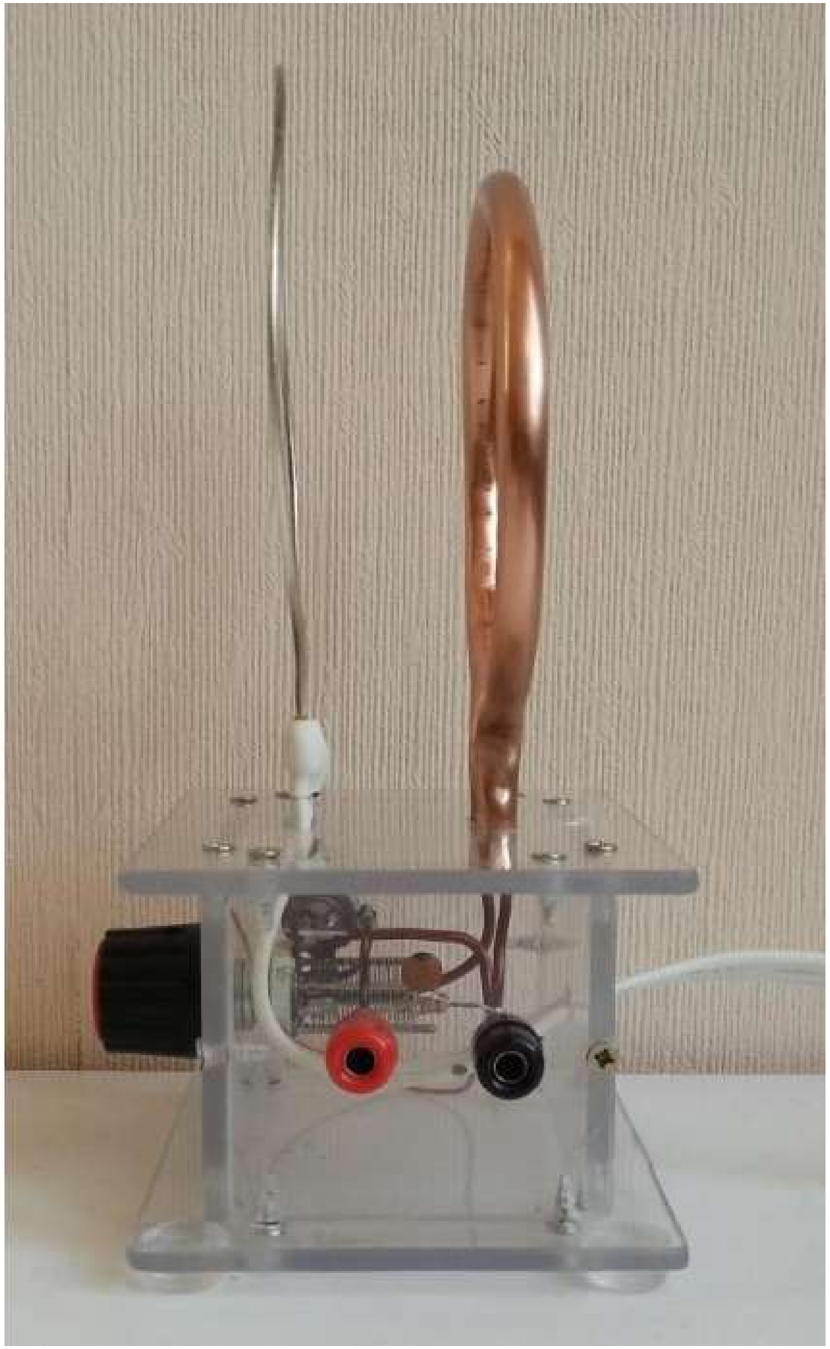
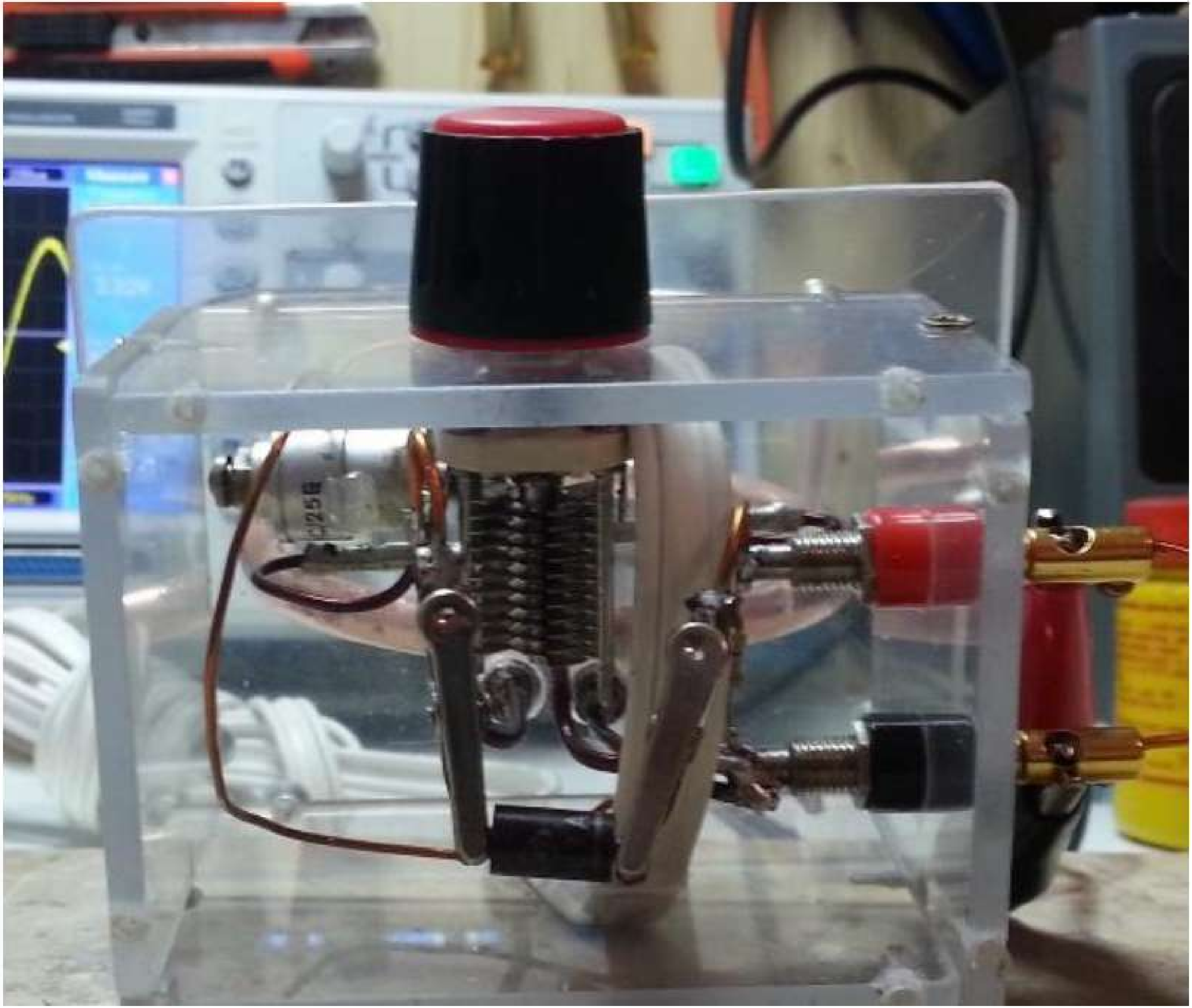


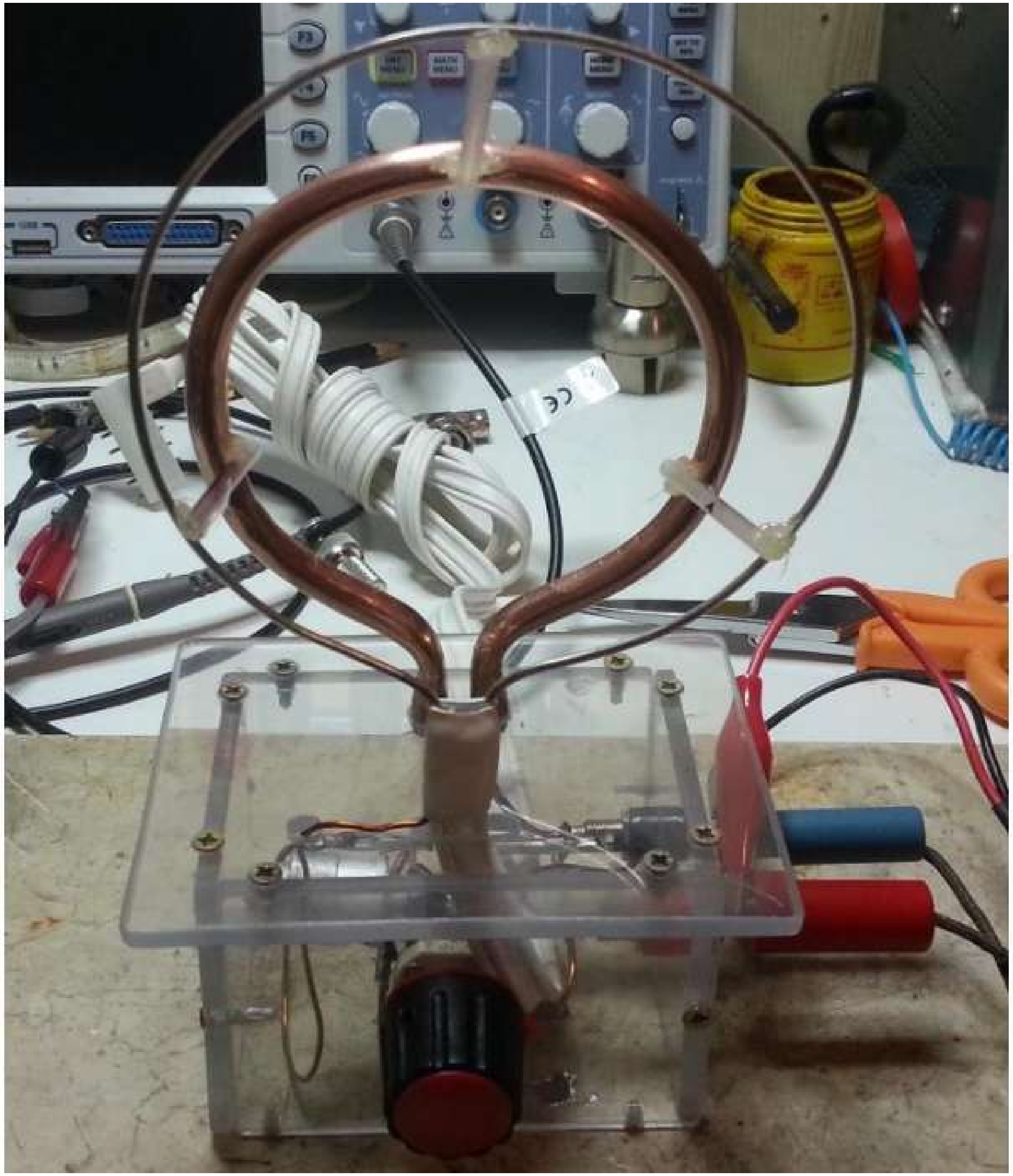
Figura 9: Particolare del diodo sulla basetta millefori.

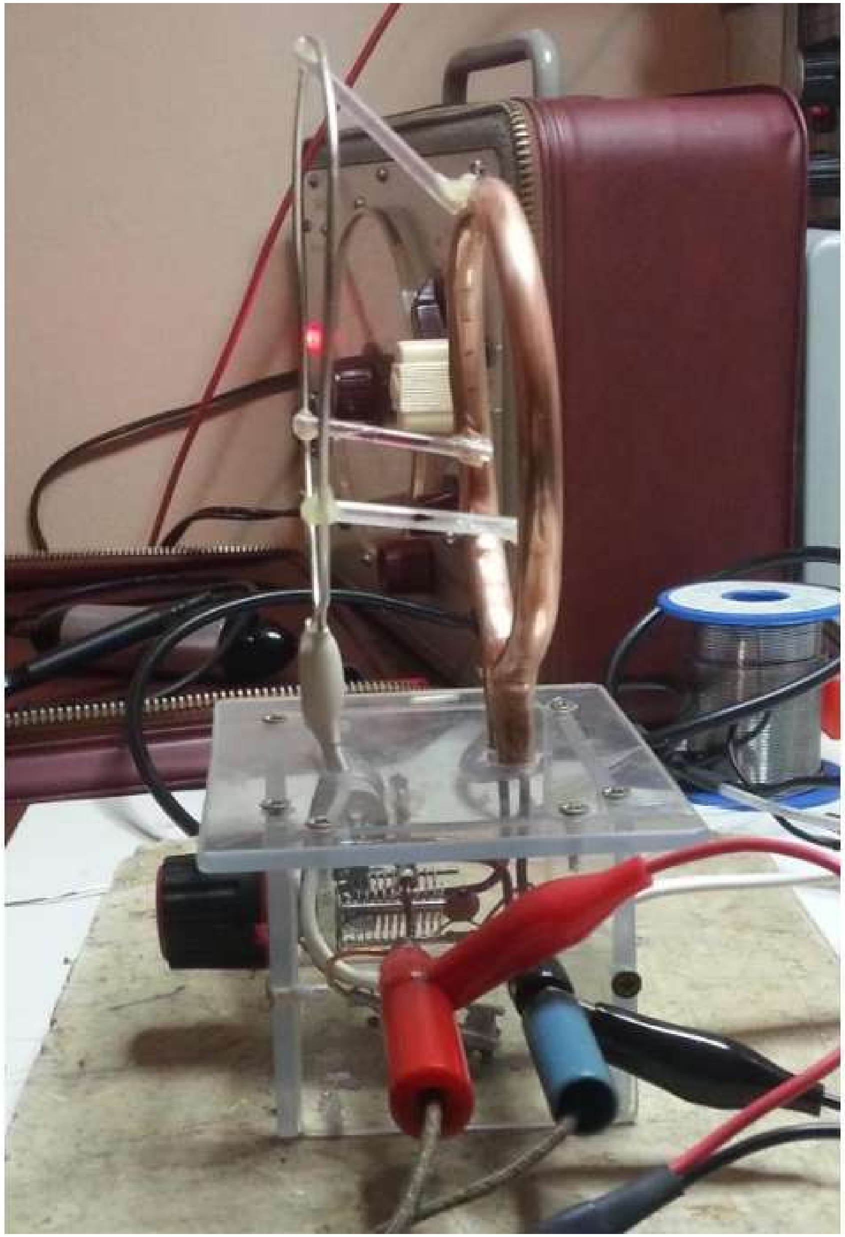
Figura 10: Cablaggio del diodo rivelatore.

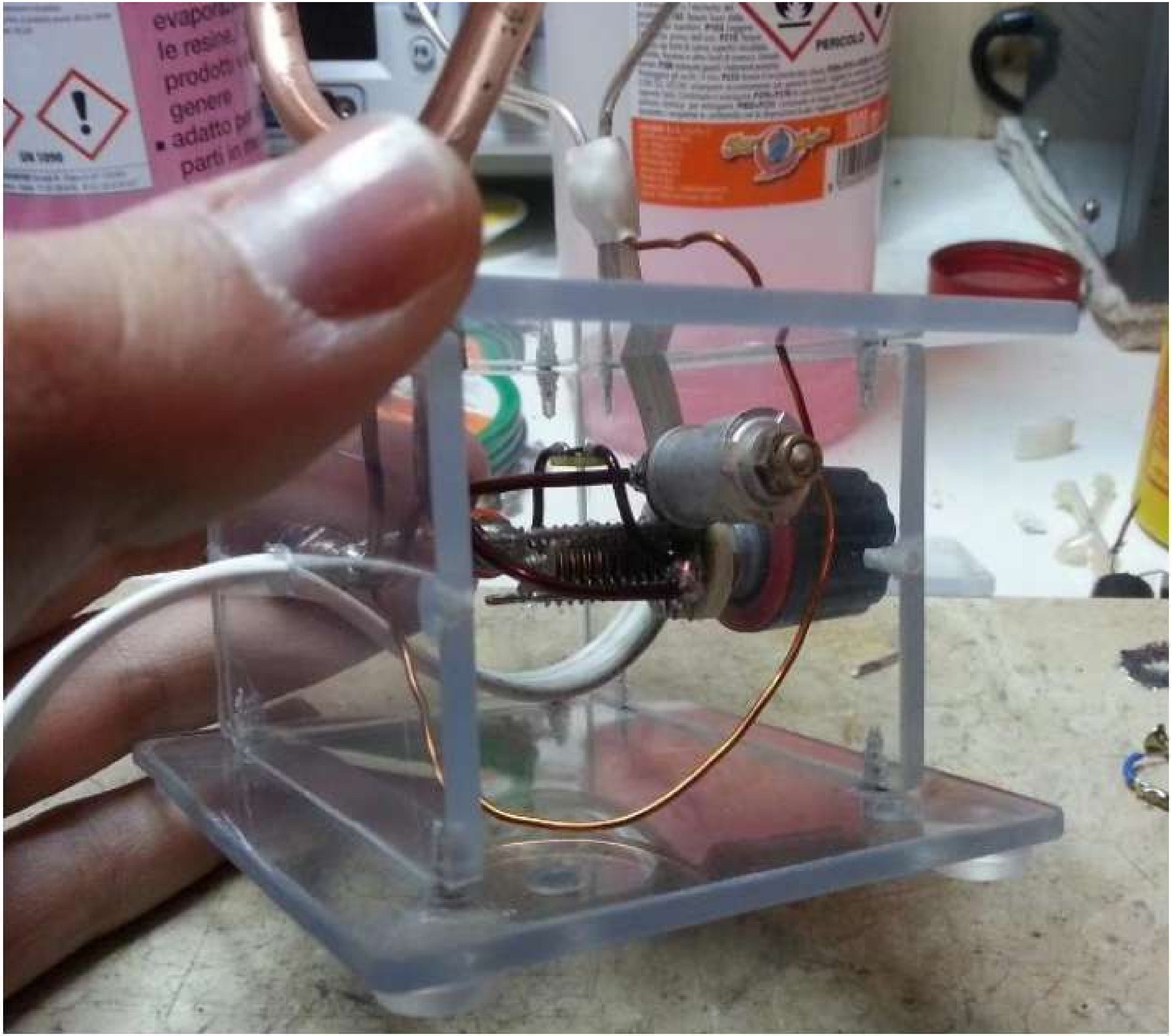











le resine
genere
UN 1090
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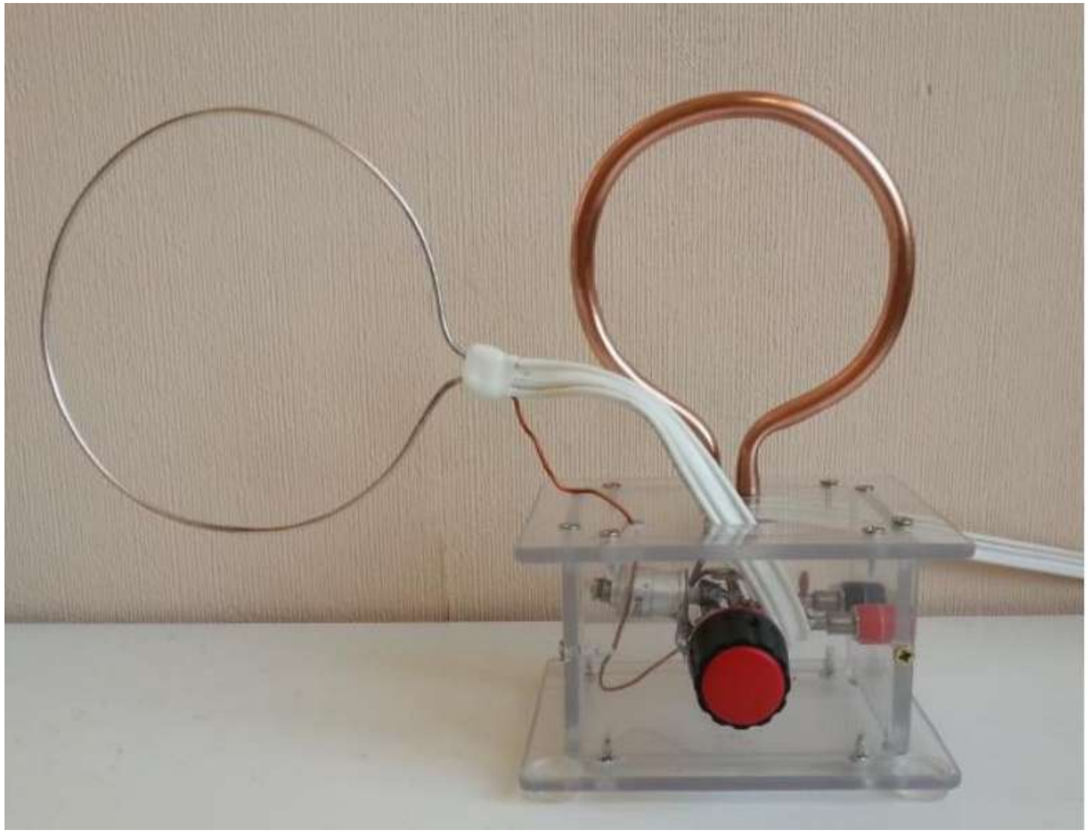
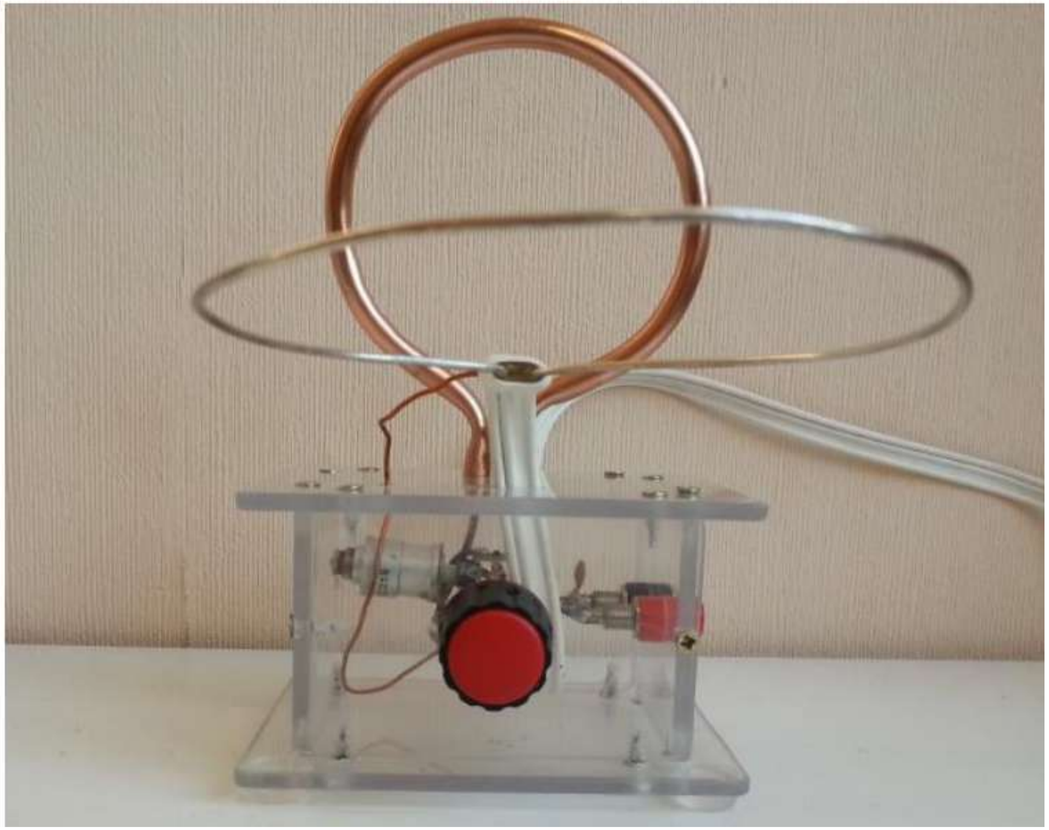
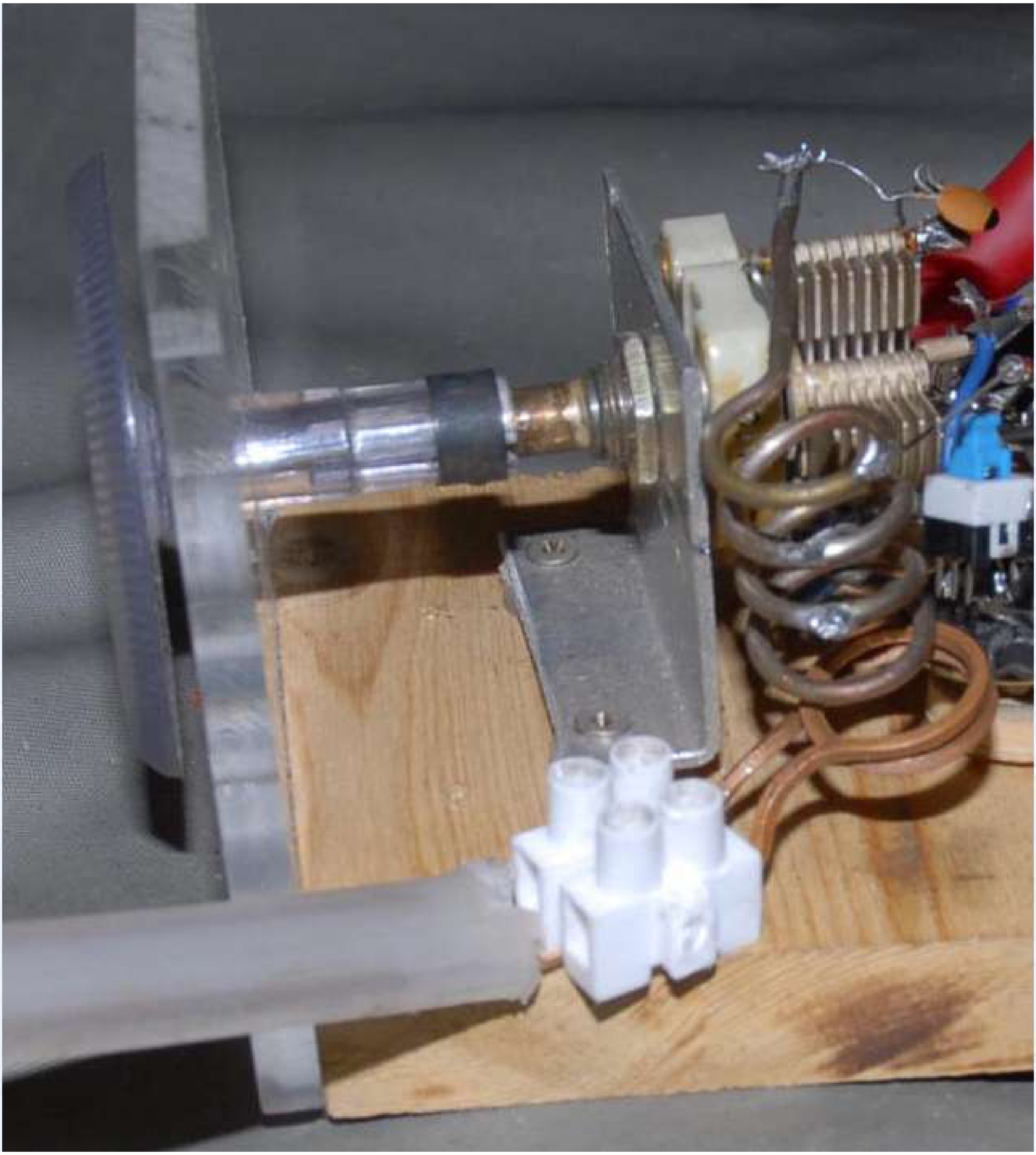
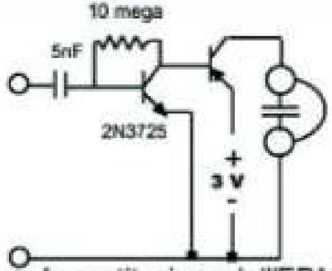
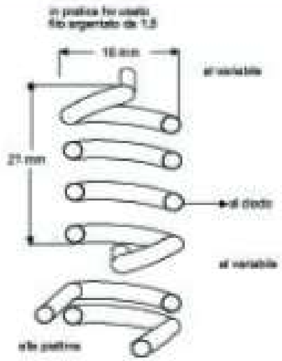
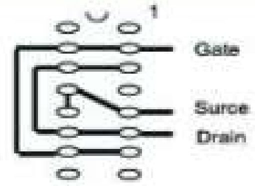





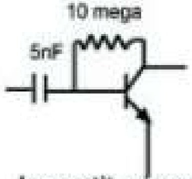


In sostituzione dell'EPAD: fa fortissimo ma occorre una pila



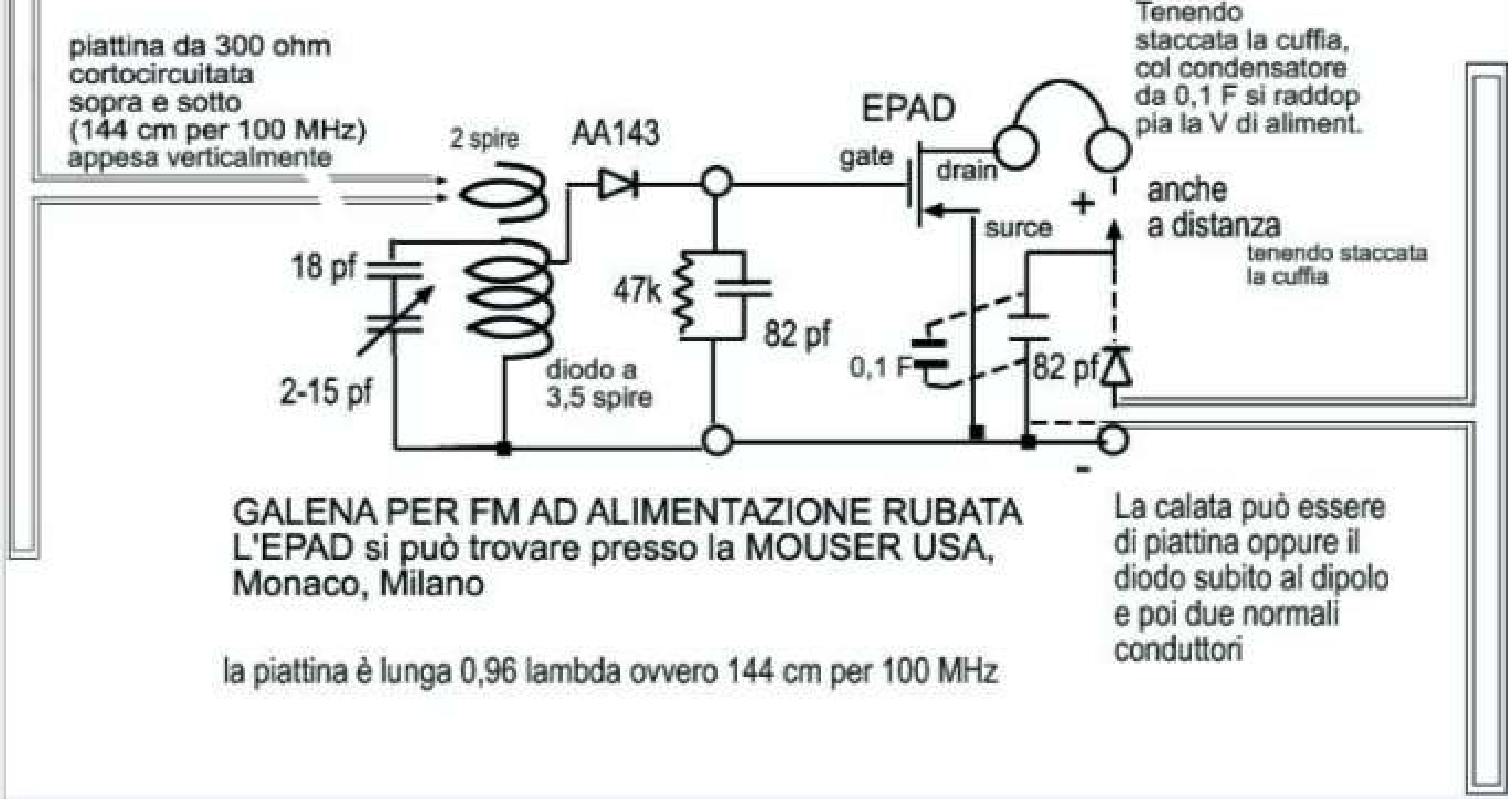


ALD110800vista dal sotto



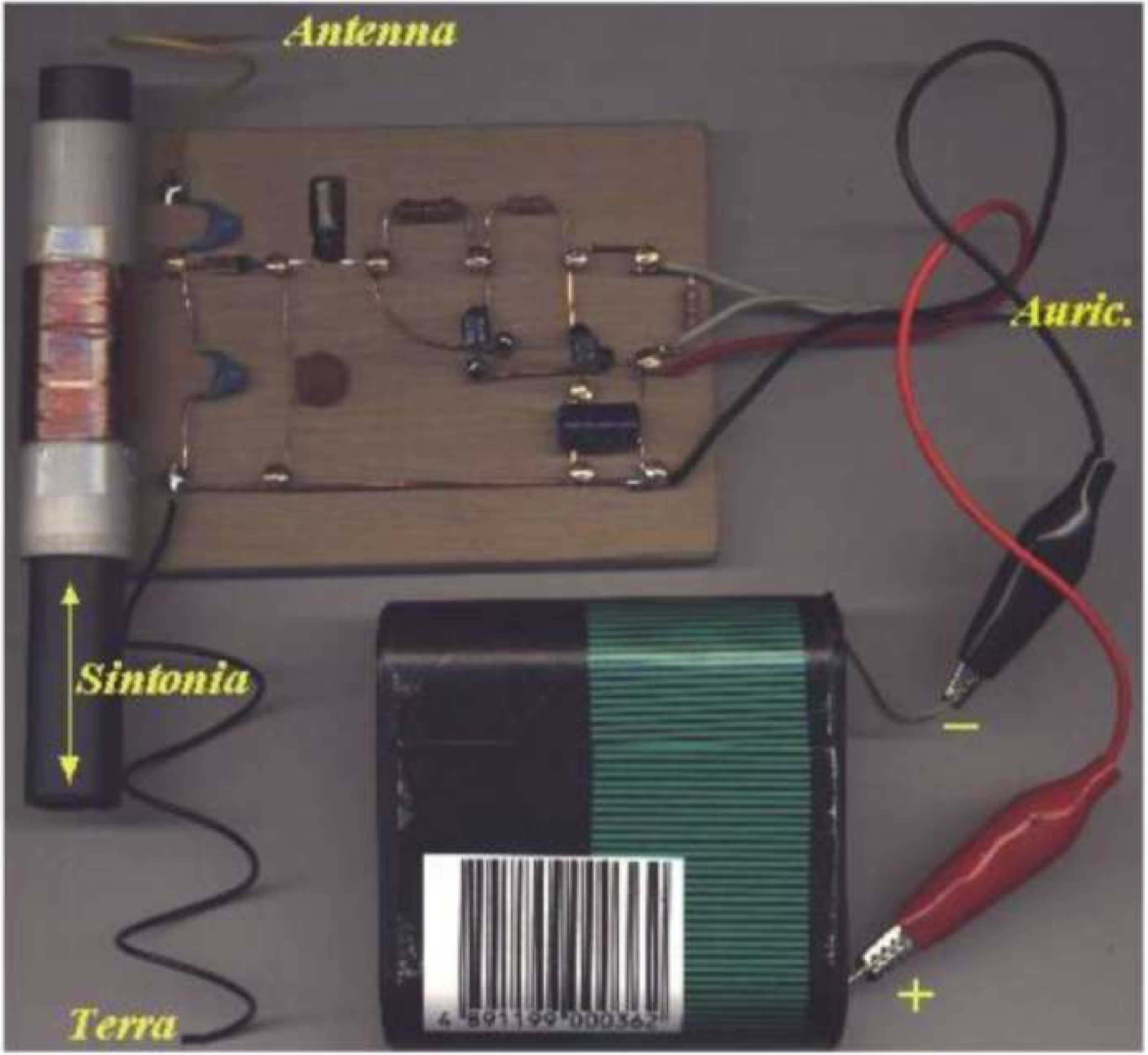
In sostituzione dell'EPAD,
ma richiede almeno 1 V
di alimentazione rubata

NOTA
con un buon segnale
funziona senza amplificatore



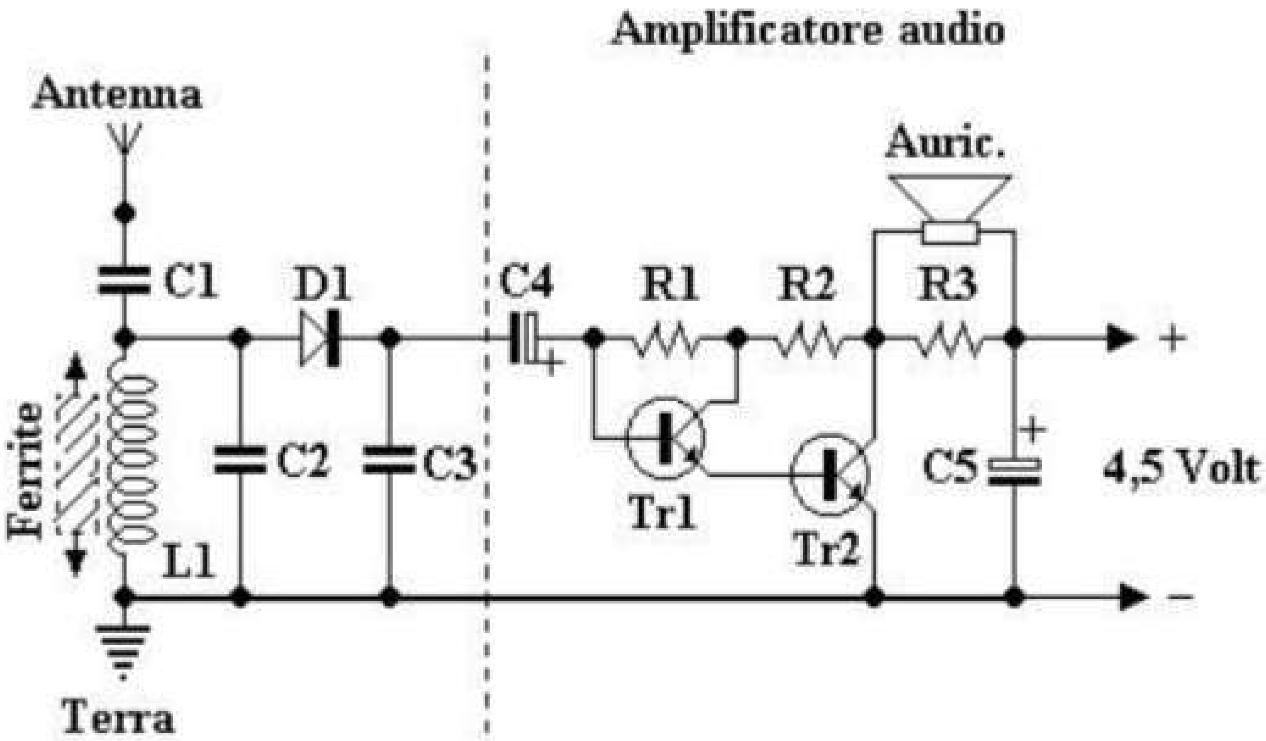
GALENA PER FM AD ALIMENTAZIONE RUBATA
L'EPAD si può trovare presso la MOUSER USA,
Monaco, Milano

la piattina è lunga 0,96 lambda ovvero 144 cm per 100 MHz



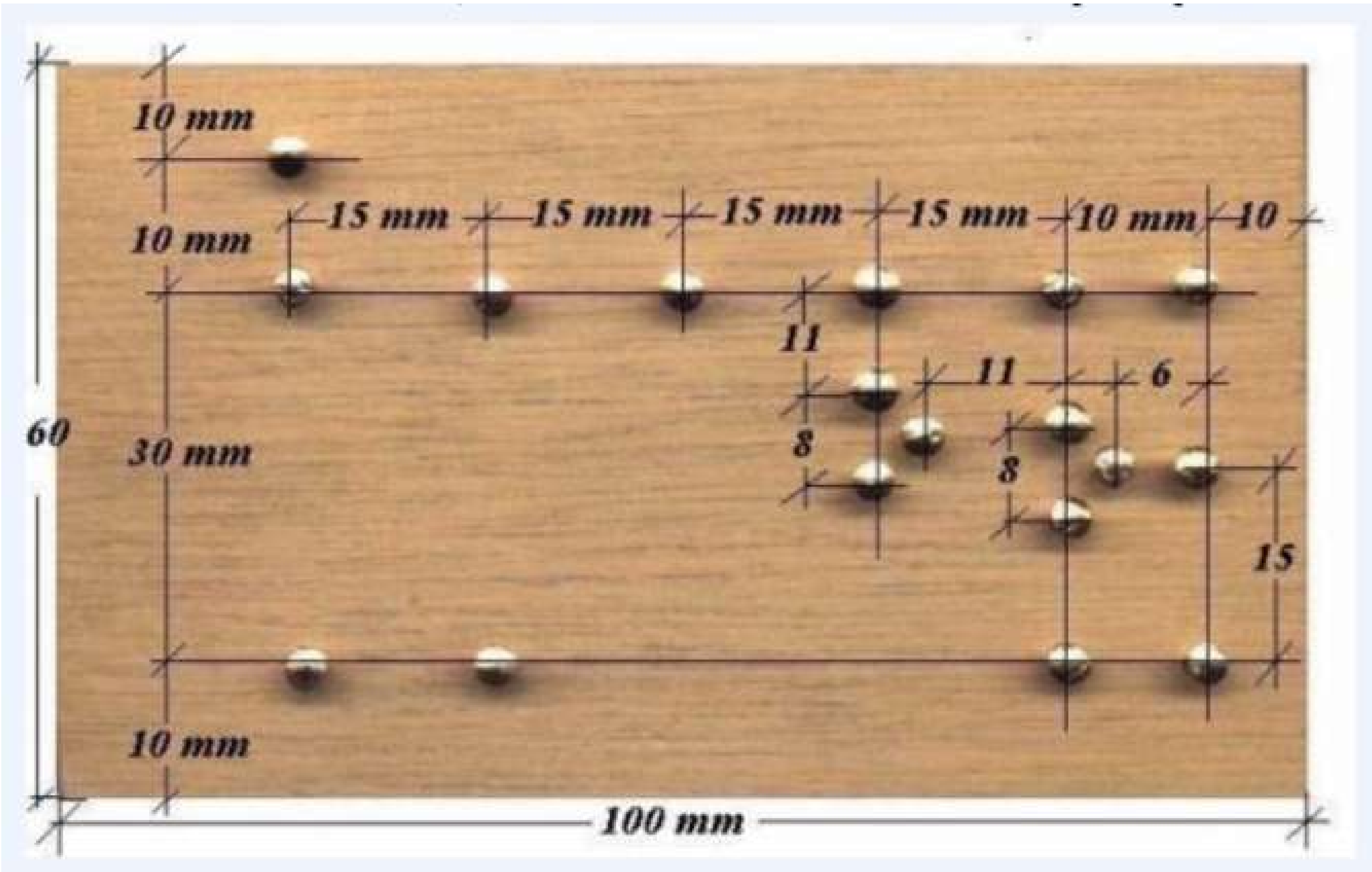
Antenna
Auric.
Sintonia
Terra
–
+

Schema elettrico

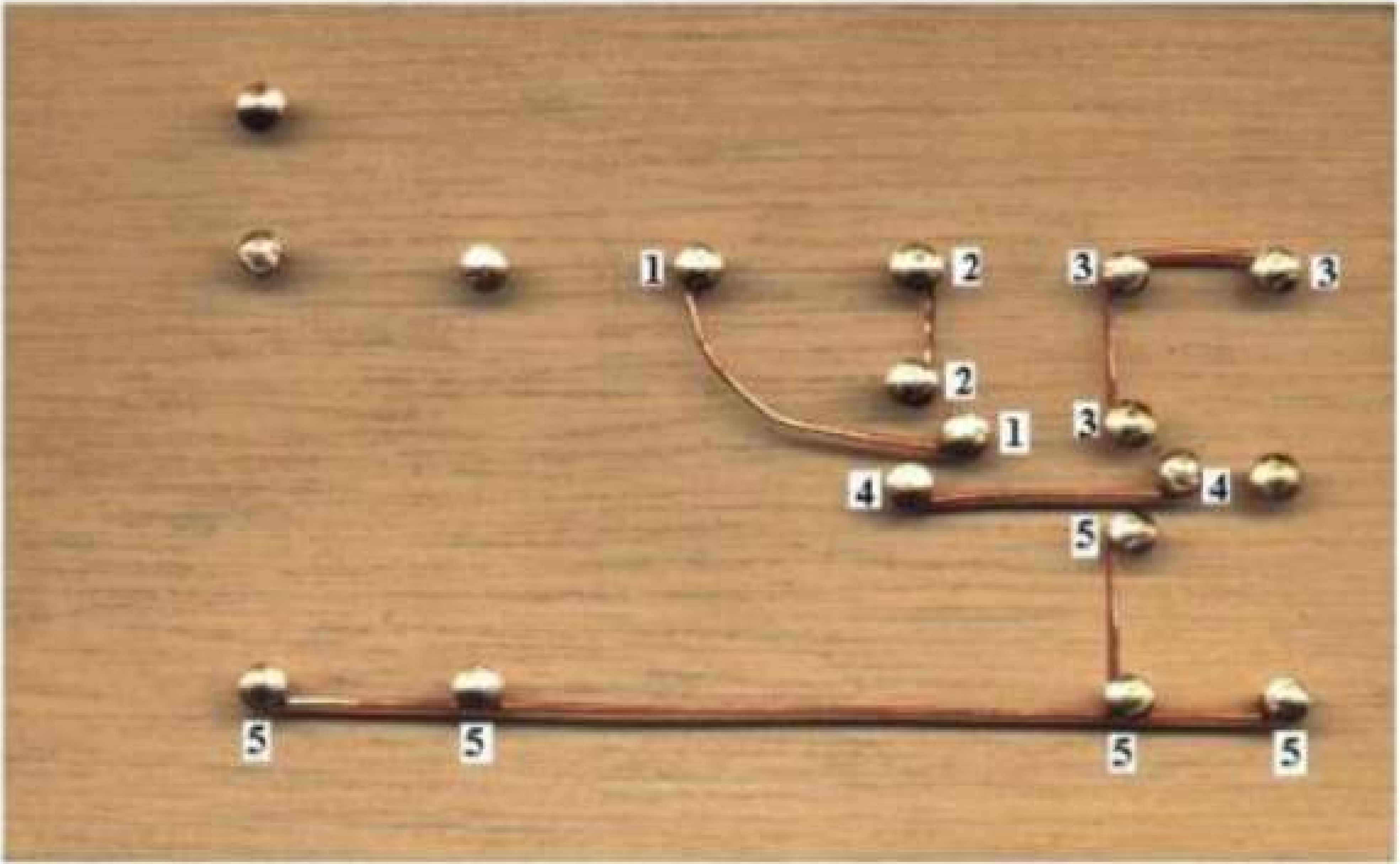


Componenti:

L1 = bobina 60/70 spire
C1 = condensatore 470 pF
C2 = condensatore 220pF
C3 = condensatore 4,7 nF
C4 = condensatore 1 uF elettr.
C5 = condensatore 47 uF elettr.
R1 = resistore 1 Mohm
R2 = resistore 4,7 Kohm
R3 = resistore 2,2 Kohm
D1 = diodo al germanio
Tr1 = transistor NPN BC547
Tr2 = transistor NPN BC547
Auricolare = Z da 100 Kohm
Ferrite = nucleo scorrevole di sintonia

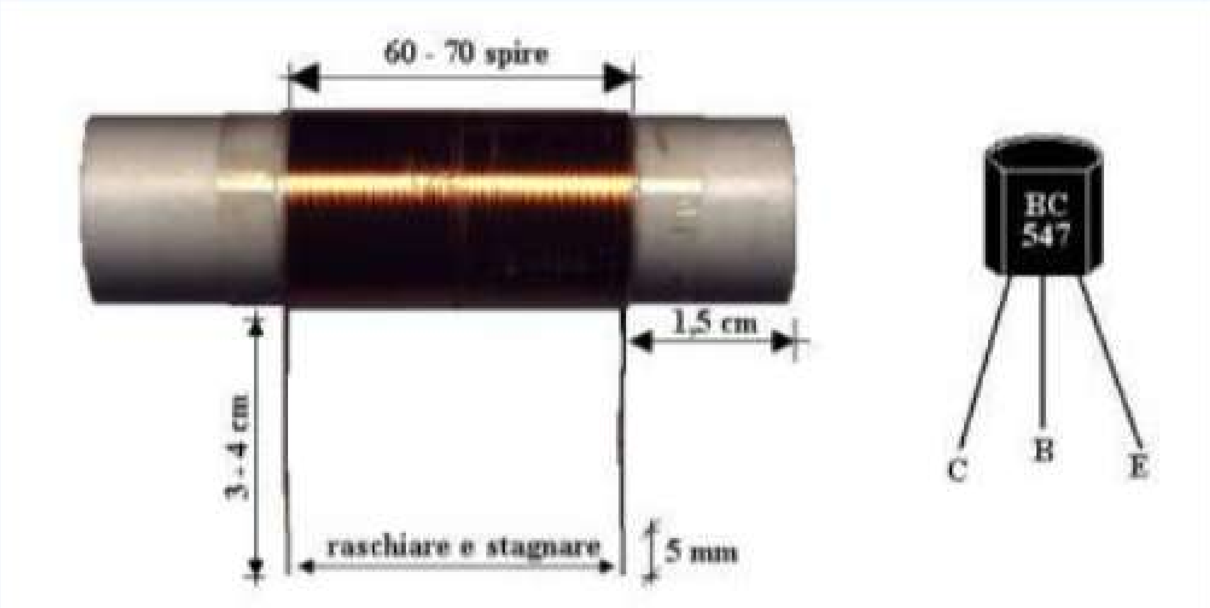


10 mm
10 mm
15 mm
15 mm
15 mm
15 mm
10 mm
10
11
11
6
8
8
60
30 mm
15
10 mm
100 mm

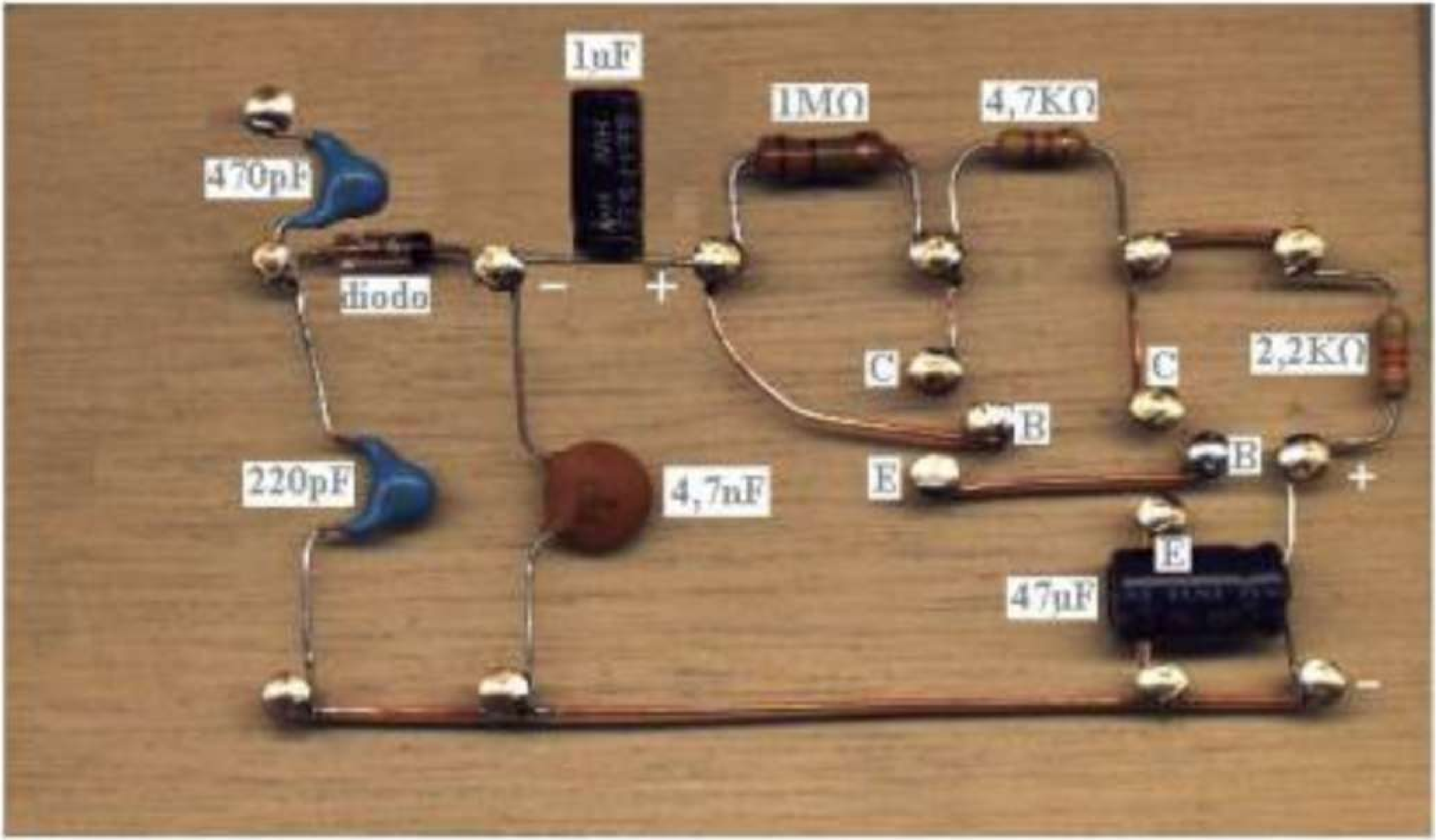


1
2
3
3
2
1
3
4
4
5
5
5
5
5

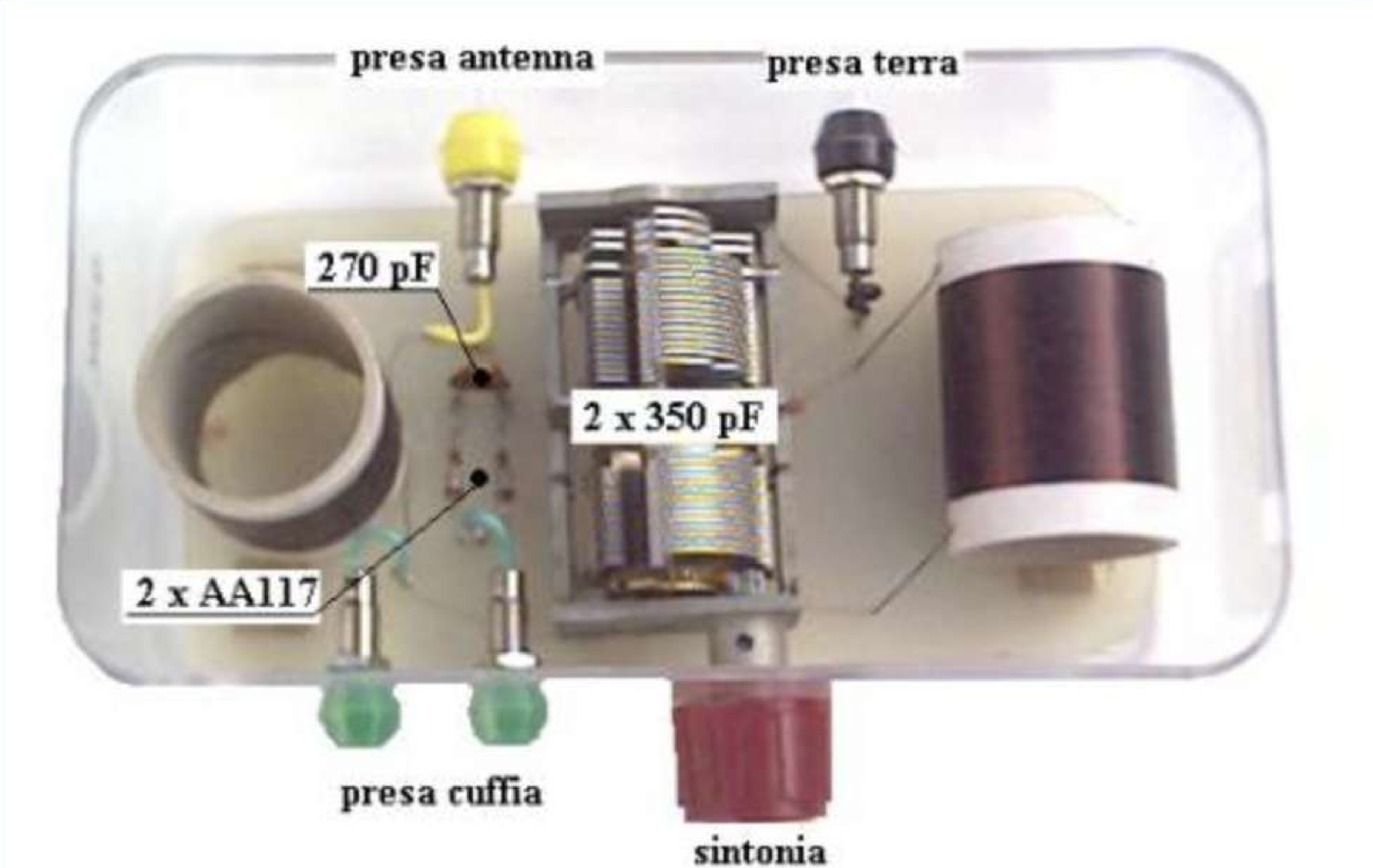
Terminato l'avvolgimento, perché questo non si svolga, sarà bene rivestirlo con un giro di nastro adesivo trasparente, i terminali vanno raschiati dallo smalto e stagnati, la bobina trova spazio sul lato sinistro della basetta e va collegata ai capi del condensatore da 220 pF, due gocce di colla saranno sufficienti a tenerla in posizione, anche la colla a caldo o il silicone sono una buona soluzione.

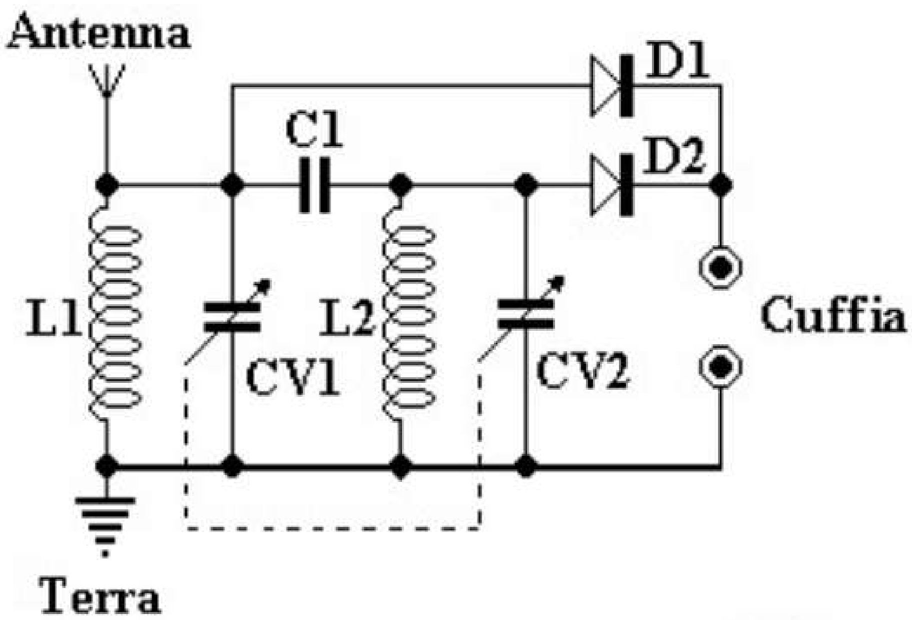


A questo punto si salderanno, al loro posto direttamente sulla testa dei chiodini, i due transistor (occorre fare attenzione per non sbagliare nell'identificare i terminali), i fili rosso-nero provvisti delle pinzette a coccodrillo per il collegamento alla pila, l'auricolare o la cuffia ai capi della resistenza da 2,2 Kohm, il filo d'antenna al terminale del condensatore da 470 pF, il filo per il collegamento di terra al negativo.


1nF
1MΩ
4,7KΩ
470pF
diodo
–
+
C
C
2,2KΩ
B
B
E
+
220pF
4,7nF
E
47µF
–

Un progetto di Luciano Loria





Materiale occorrente

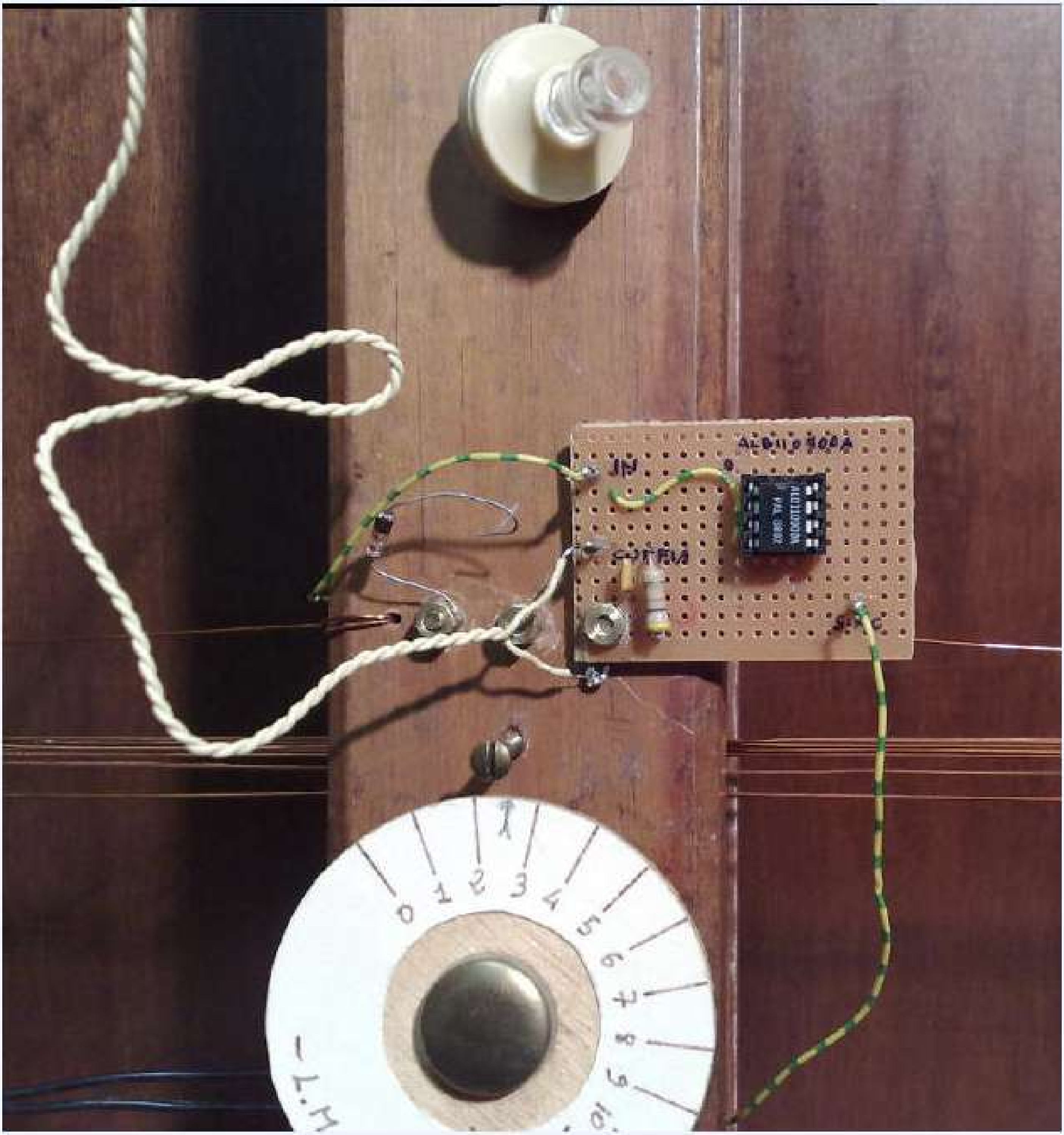
L1; L2 = 90 spire filo rame smaltato Ø 0,3 mm
su tubo isolante Ø 3 cm

CV1; CV2 = variabile in aria 350 + 350 pF

C1 = condensatore ceramico 220÷330 pF

D1; D2 = diodo al germanio (AA117)

Schema elettrico

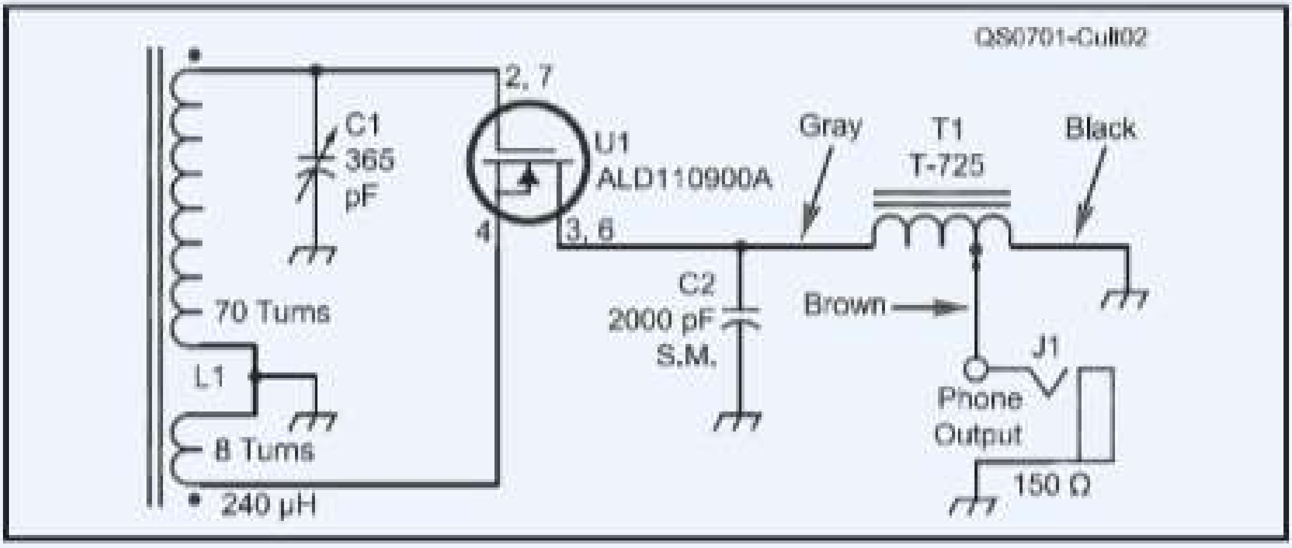


can see I left the existing 1N34 diode mounted, so that it can be reinserted to make compariso

We increase sensitivity through the use of a modern zero-threshold mosfet, always without power supply

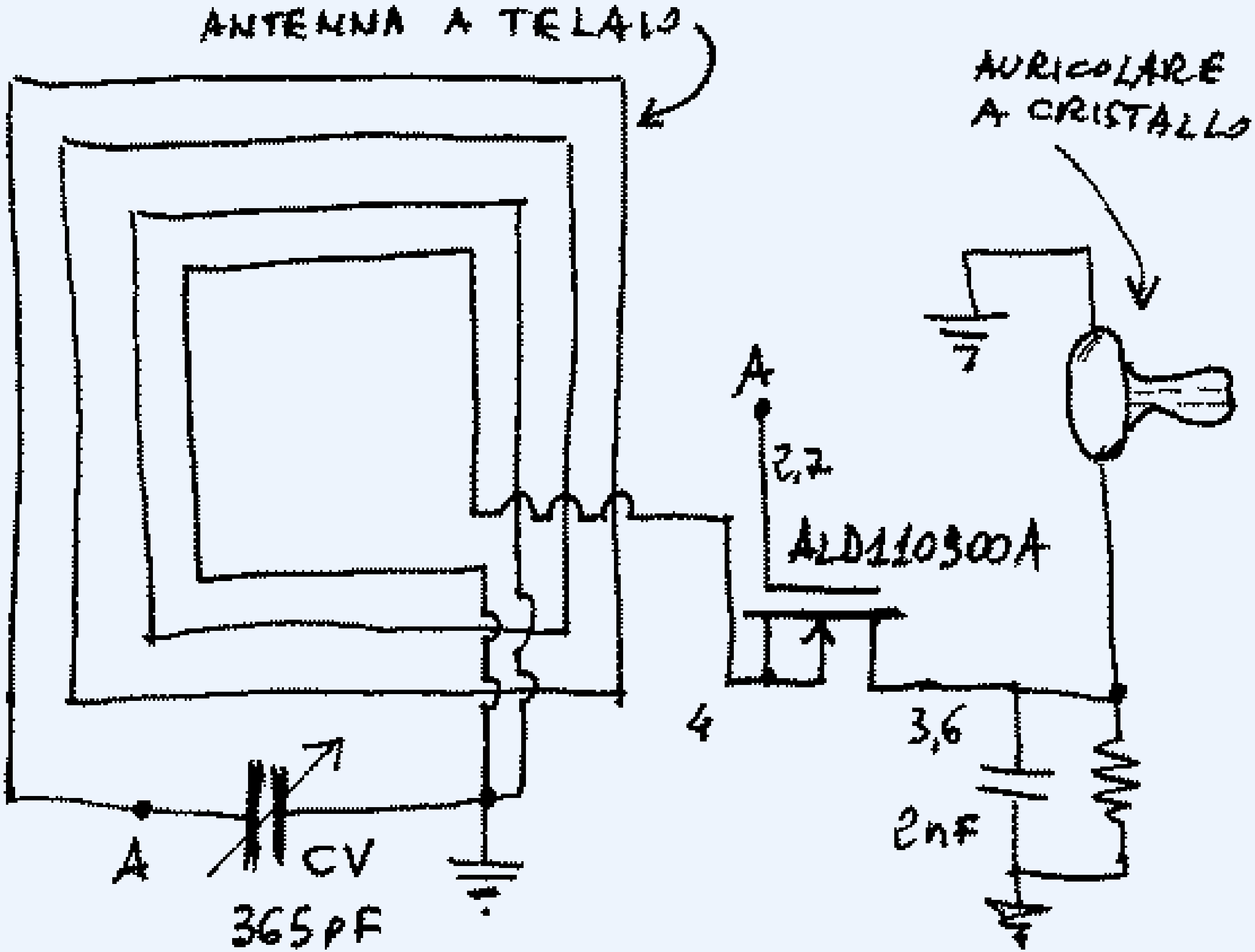
Principle of operation

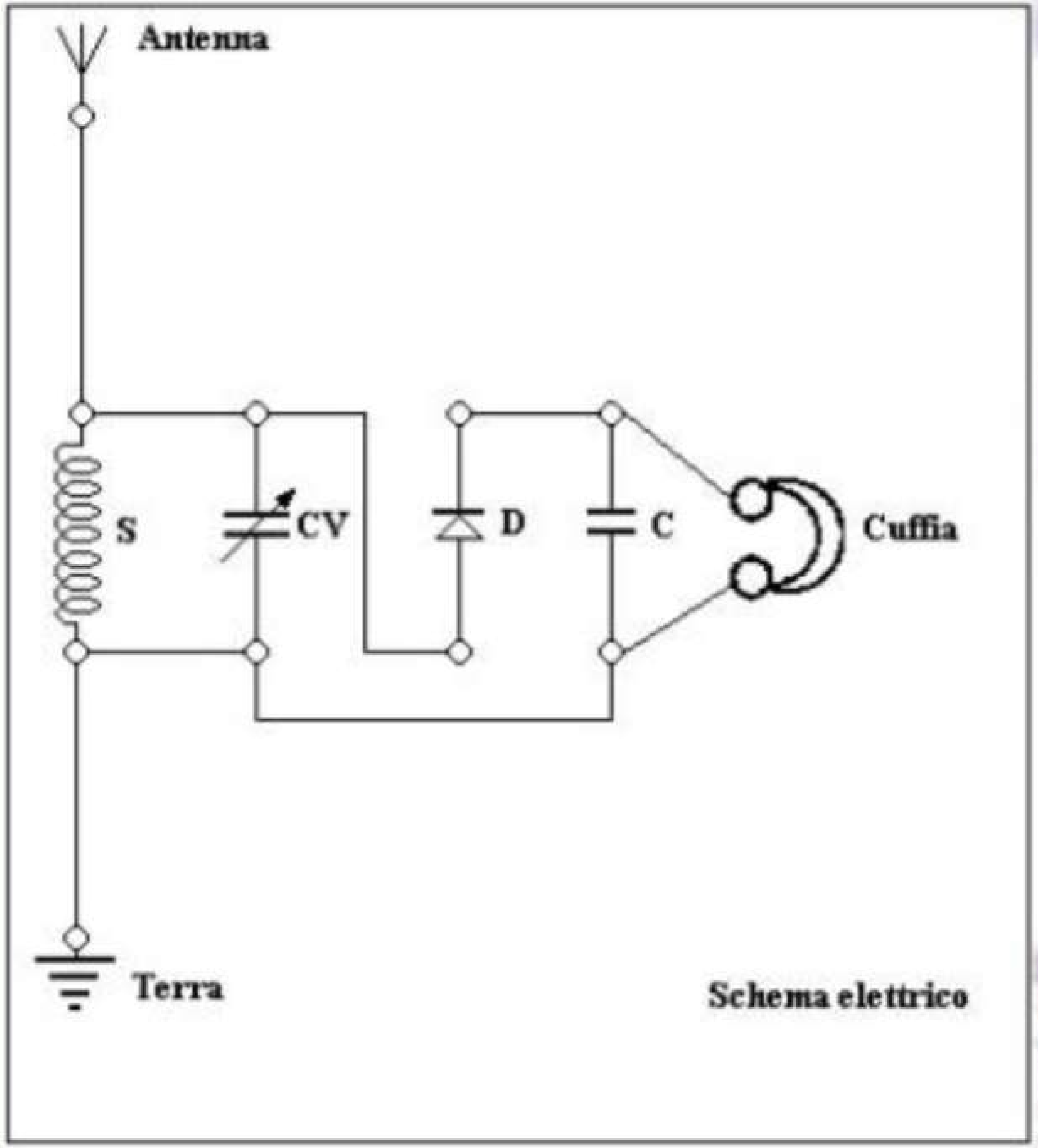
From time to time, some new devices appear on the market for electronic components, suitable for experimentation in a "crystal" reception circuit. It happened a few years ago with low-fall "schottky" diodes (BAT46 etc.), which were proposed as good substitutes for old germanium diodes. Recently I have read this article by Peter Hobbs, in which a recently released device is presented, the ALD110900A , mounted in a "high sensitivity" crystal receiver. This is a double mosfet with **a conduction threshold equal to zero**, ideal for detecting without loss a very weak signal like the one that is formed in a crystal receiver. The author proposes the realization of a scheme similar to the following one, which turns out to be of the synchronous detection type.



According to the author, the sensitivity is so high as to allow the realization of a receiver without an external antenna, based on the use of only the ferrite antenna, like that of transistor receivers. Its scheme uses as a transducer a telephone capsule coupled to the receiver by an adaptation transformer (this solution deserves to be better investigated).

For the tests I used my receiver with a panel antenna , experimented with great satisfaction a few years ago. To adapt the reception circuit I had to make some small changes, obtaining a scheme like the one below:




Antenna
S
CV
D
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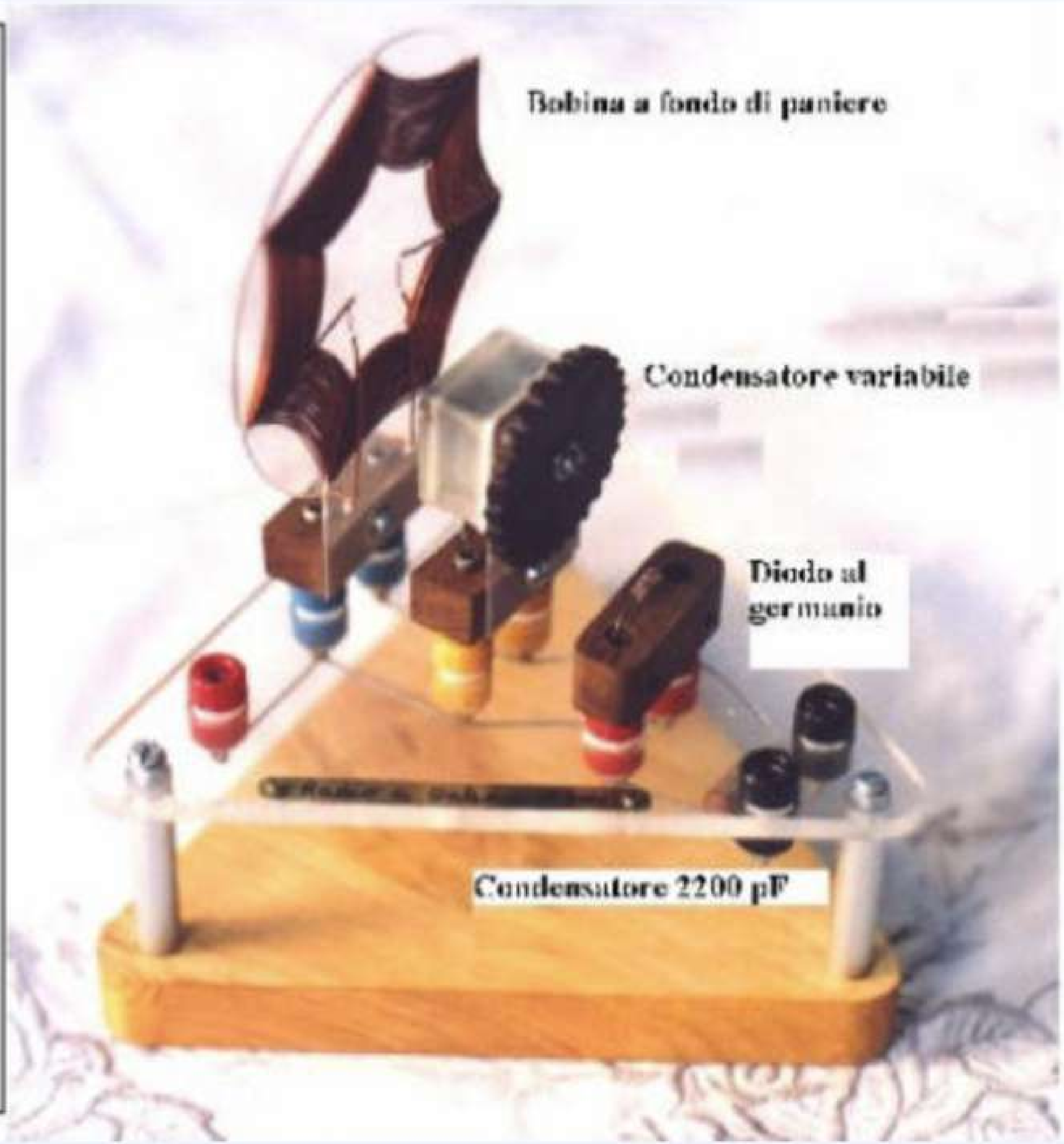
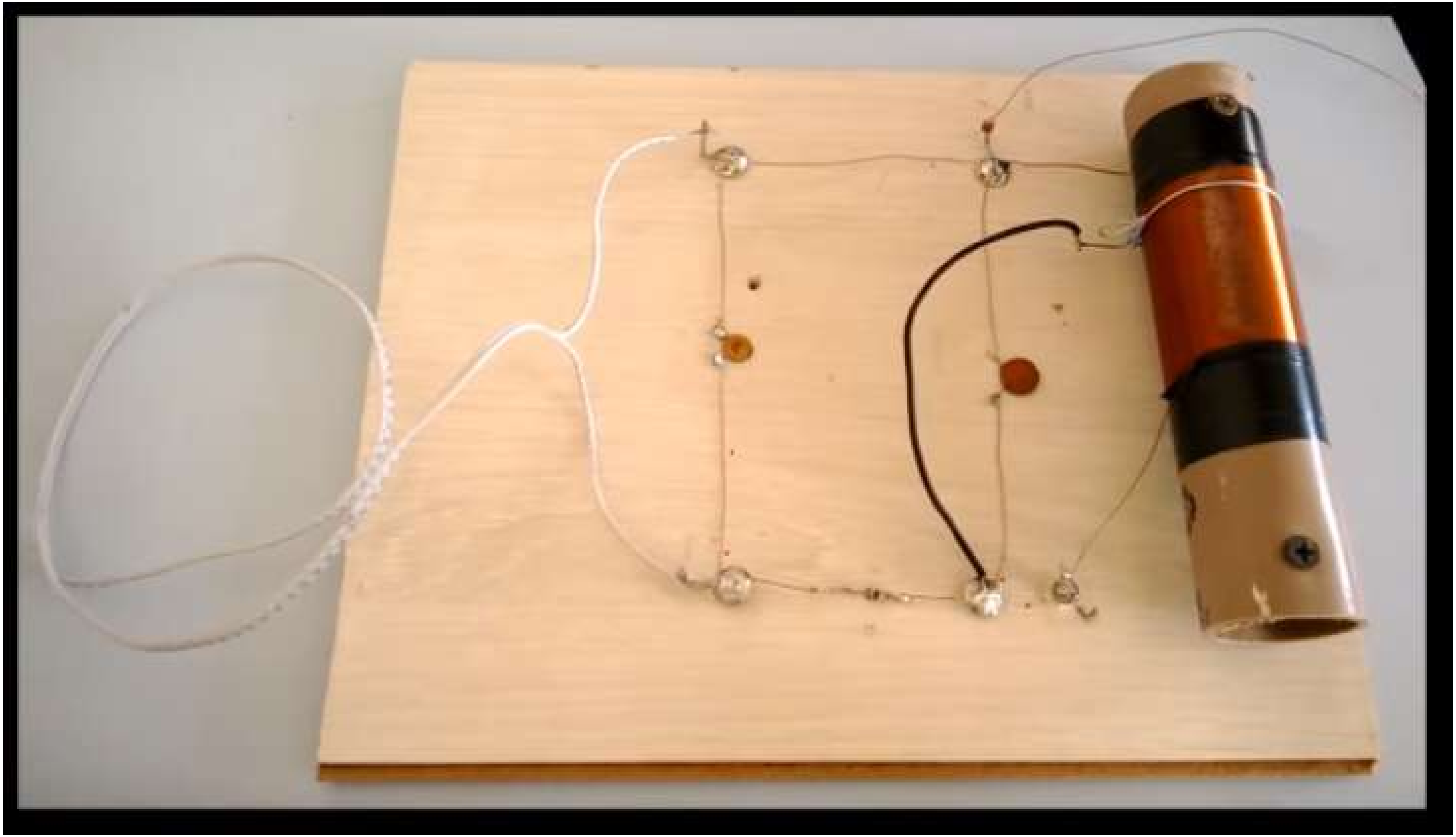
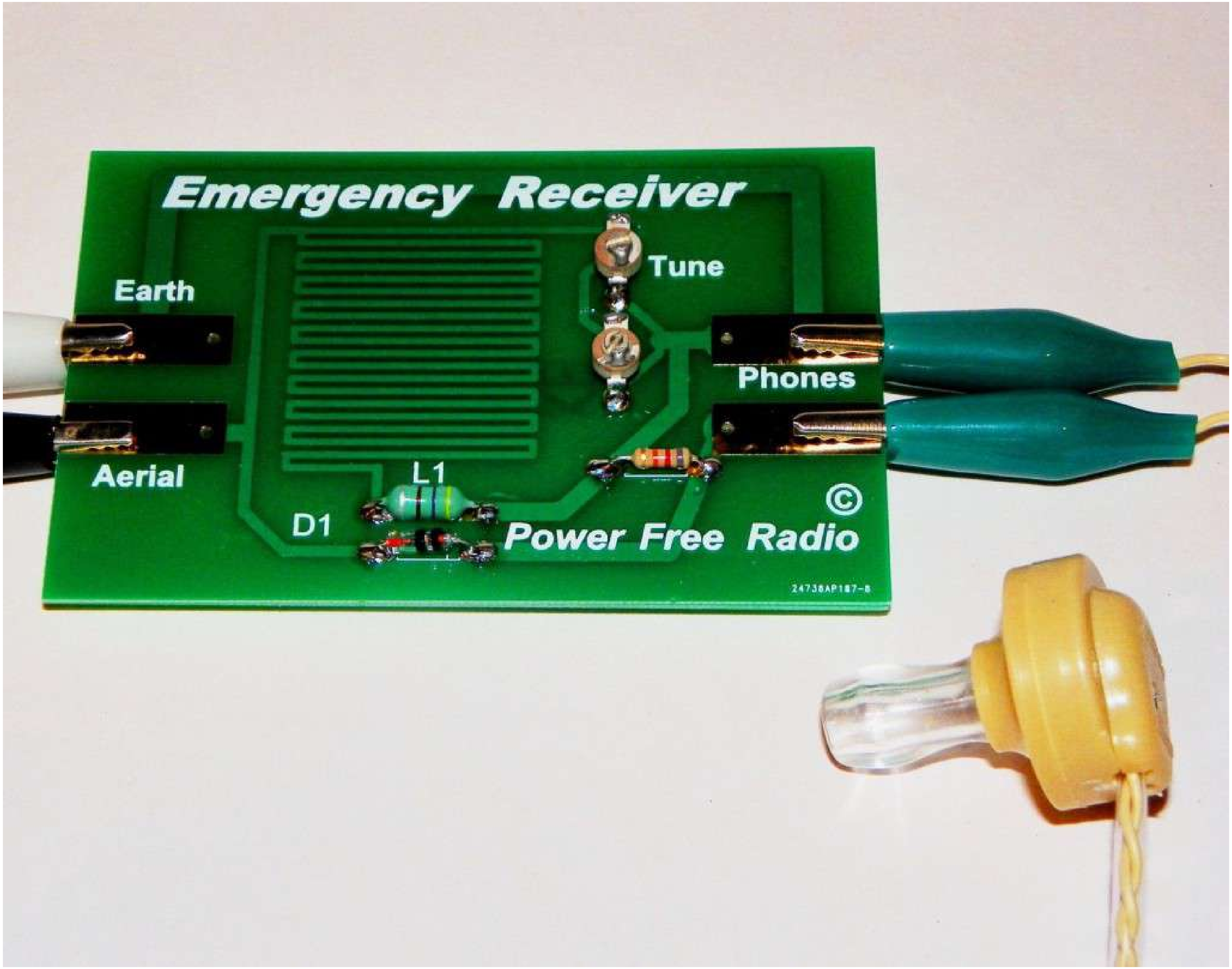
Schema elettrico

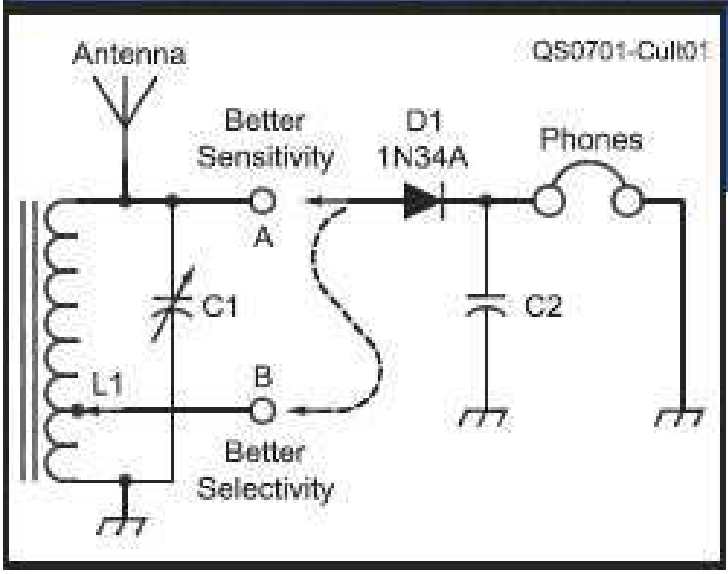

Bobina a fondo di paniere
Condensatore variabile
Diodo al germanio
Condensatore 2200 pF

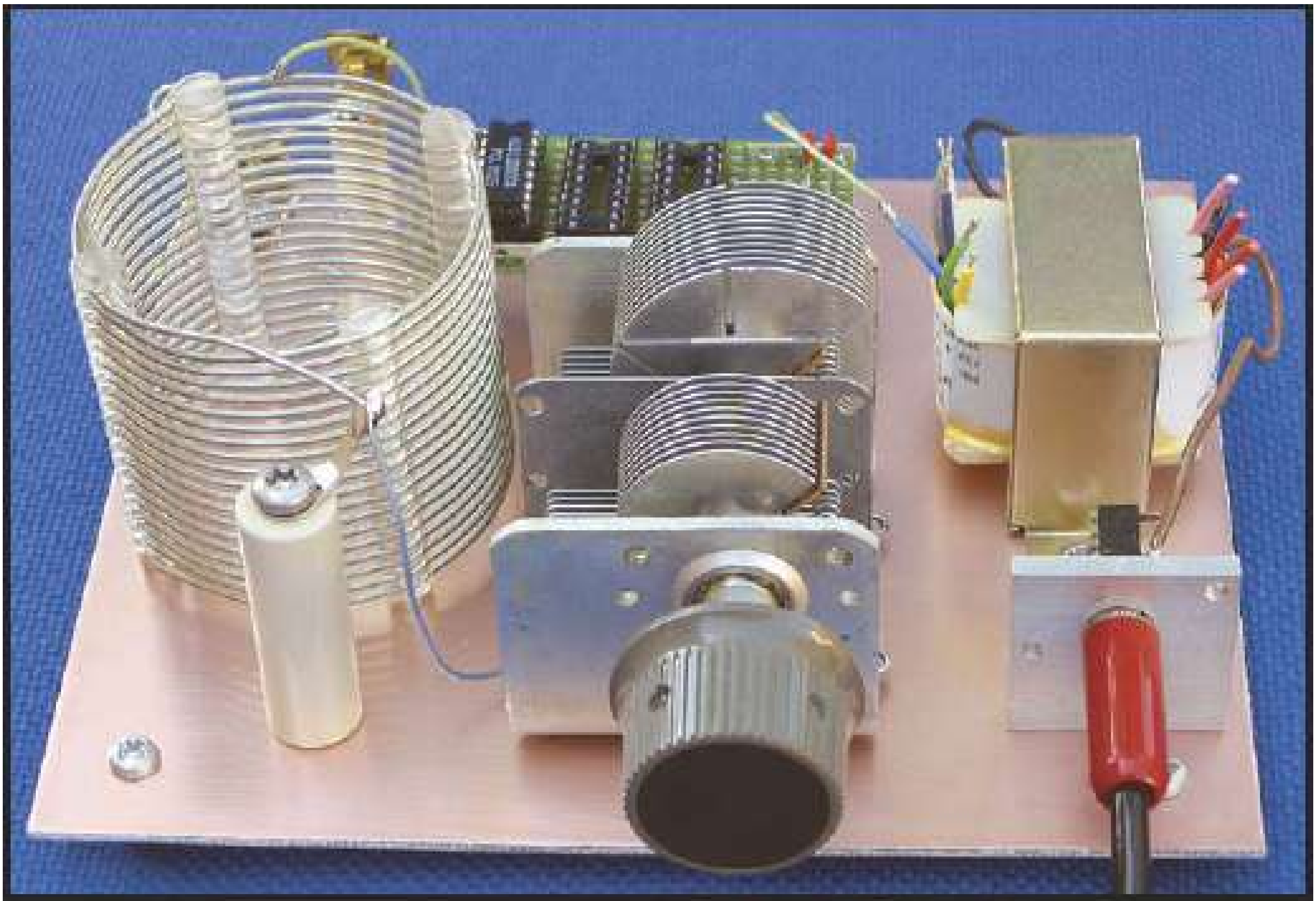

DIODO 1N270
INDUTOR
WWW.RADIODX.QSL.BR

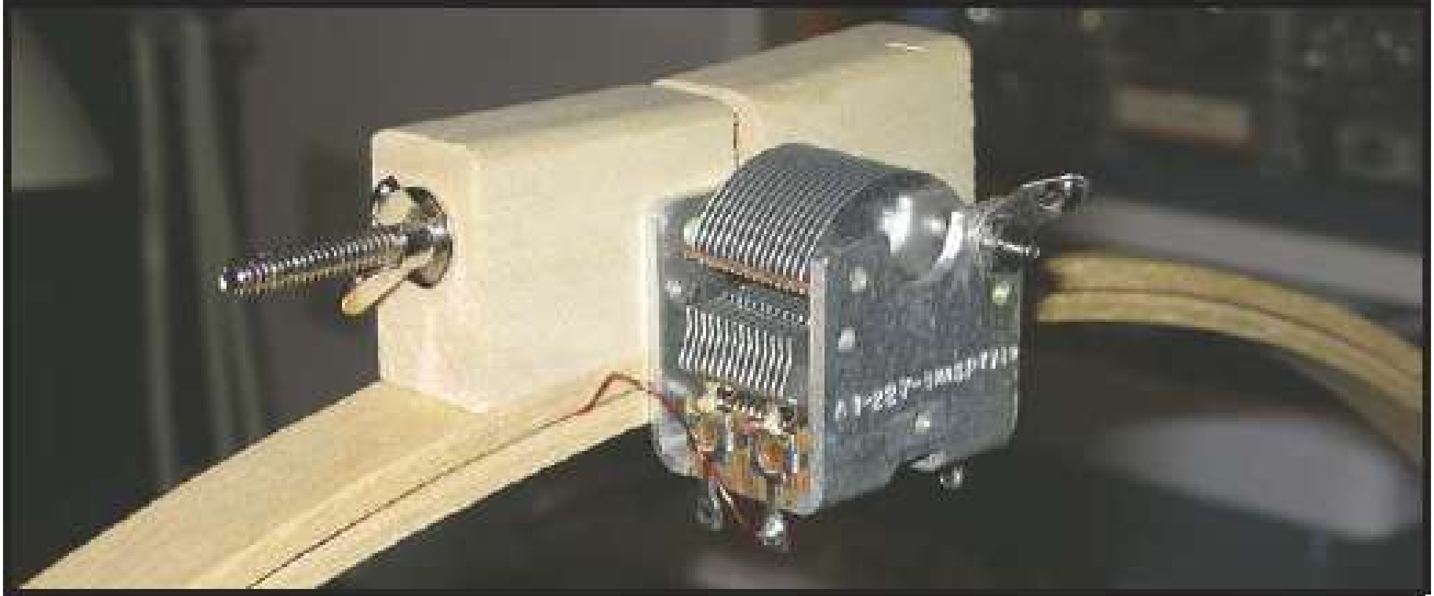

Fone Cristal
DIODO
UTOR
WWW.RADIODX.QSL.B

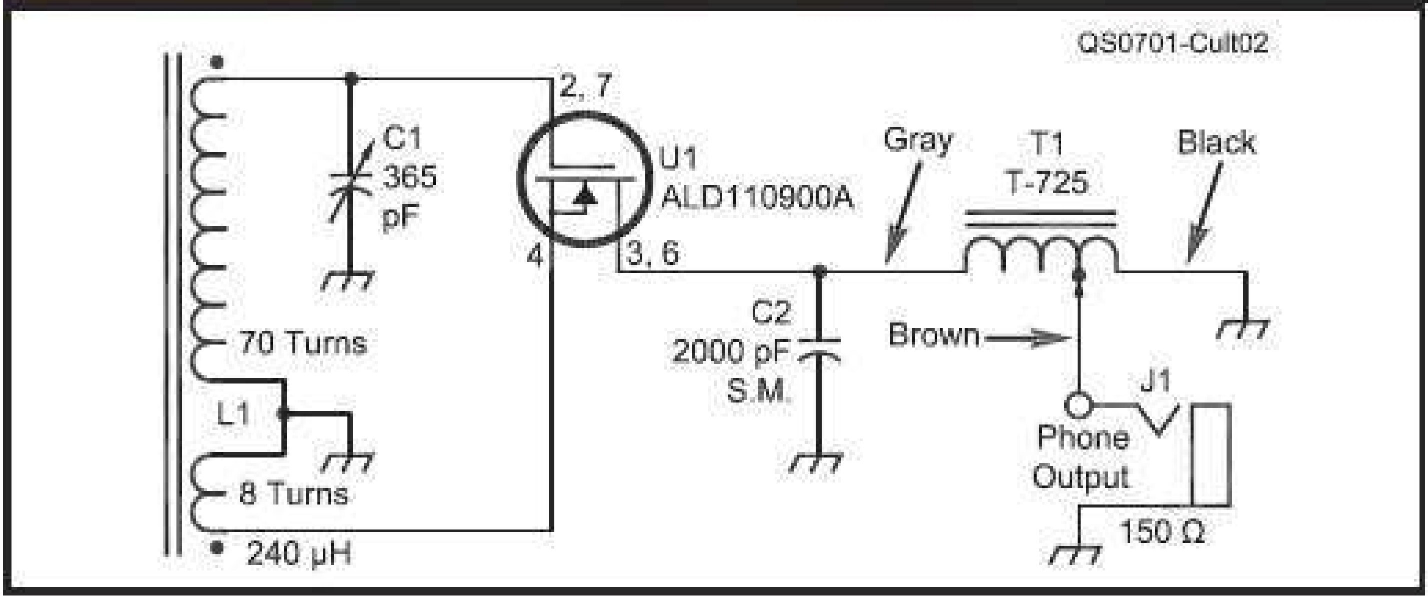


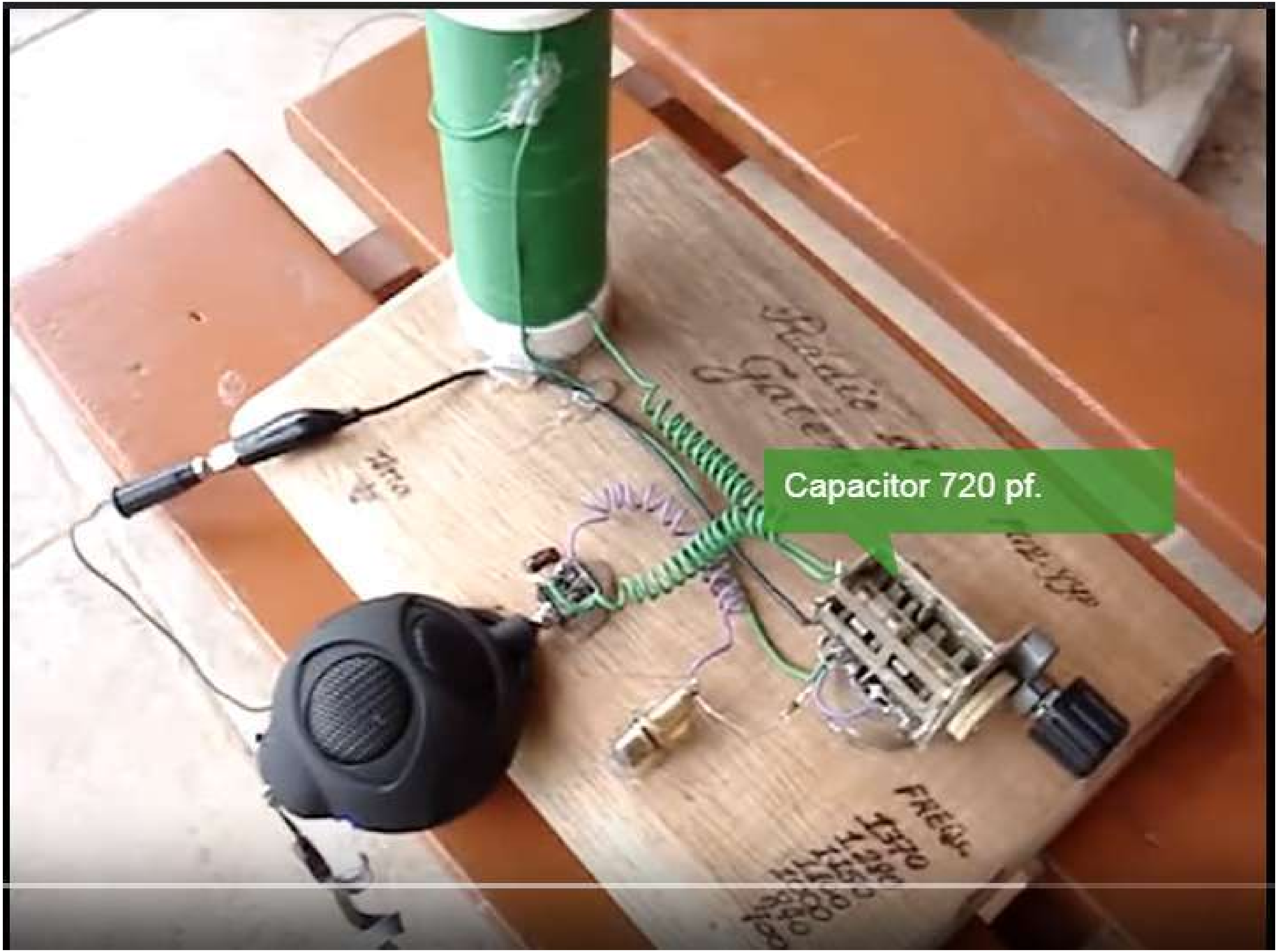

Emergency Receiver
Tune
Earth
Phones
Aerial
L1
D1
©
Power Free Radio

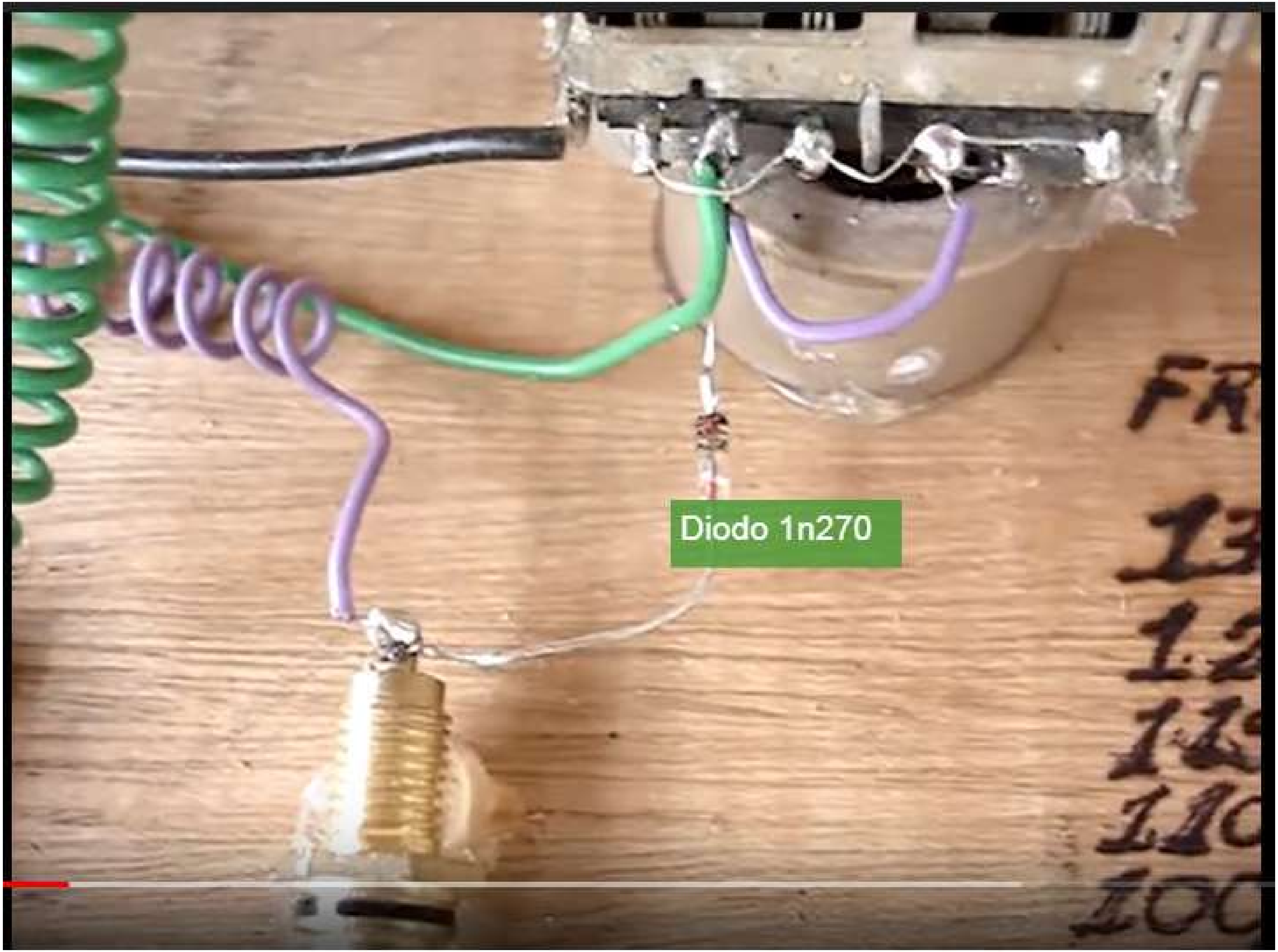

Antenna
QS0701-Cult01
Better
Sensitivity
D1
1N34A
Phones
A
C1
C2
L1
B
Better
Selectivity





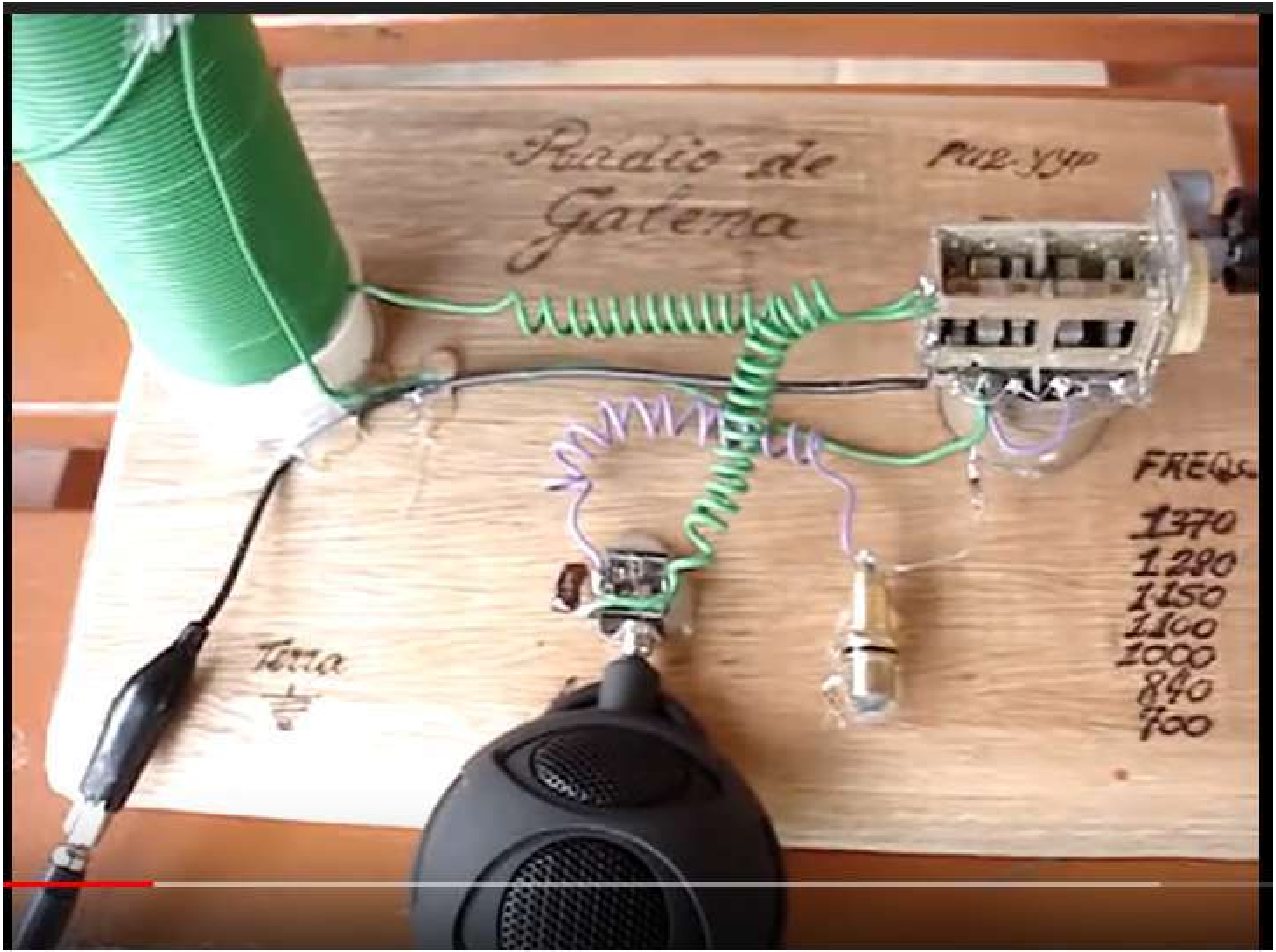

QS0701-Cult02
C1
365
pF
2, 7
U1
ALD110900A
4
3, 6
Gray
T1
T-725
Black
C2
2000 pF
S.M.
Brown
J1
Phone
Output
150 Ω
70 Turns
L1
8 Turns
240 µH


Capacitor 720 pf.

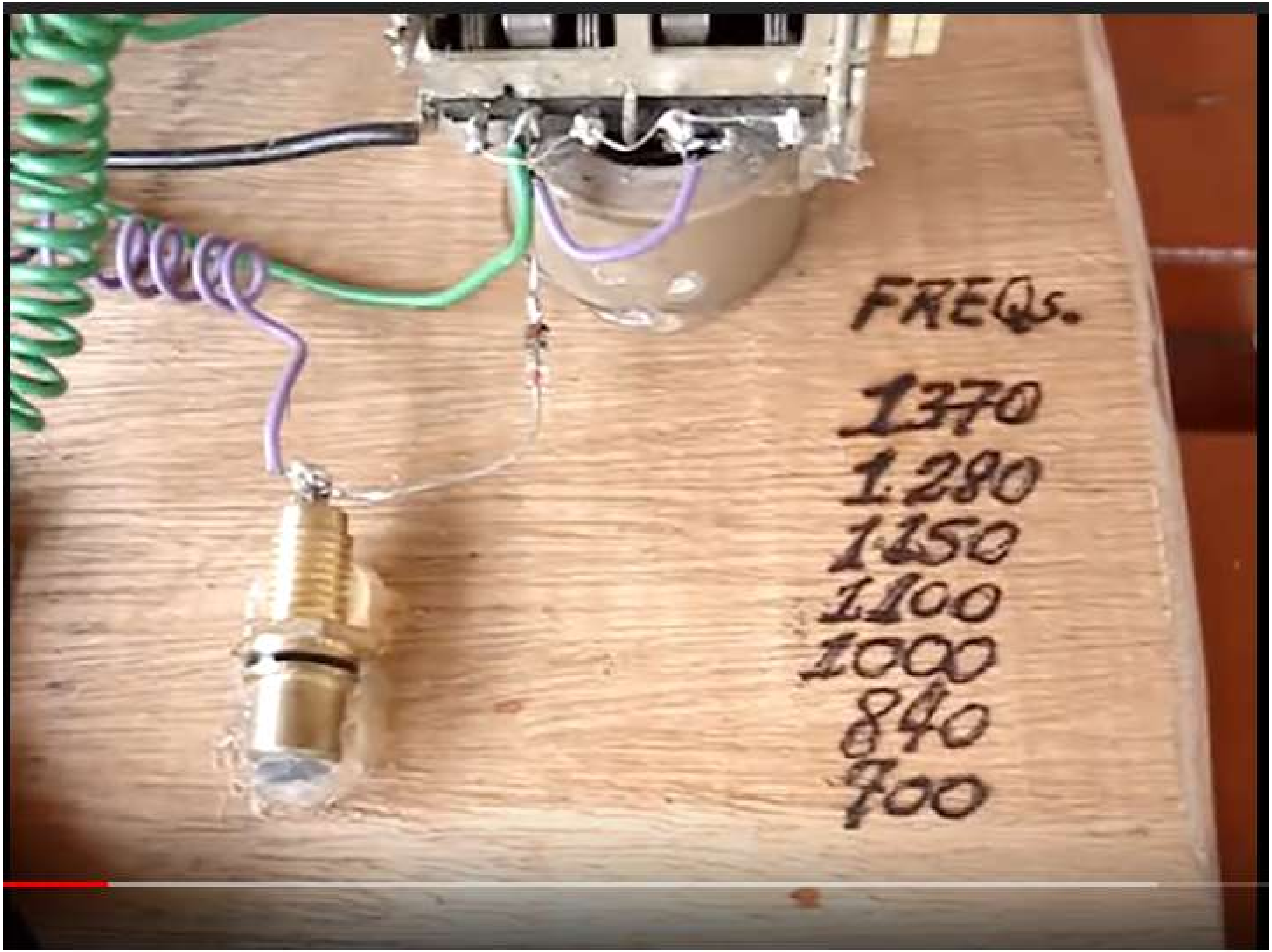

Diodo 1n270


Terra


Rádio de
Galena


Radio de
Galena
Terra
1370
1280
1150
1100
1000
840
700


FREQs
1370
1280
1150
1100
1000


FREQs.
1370
1280
1150
1100
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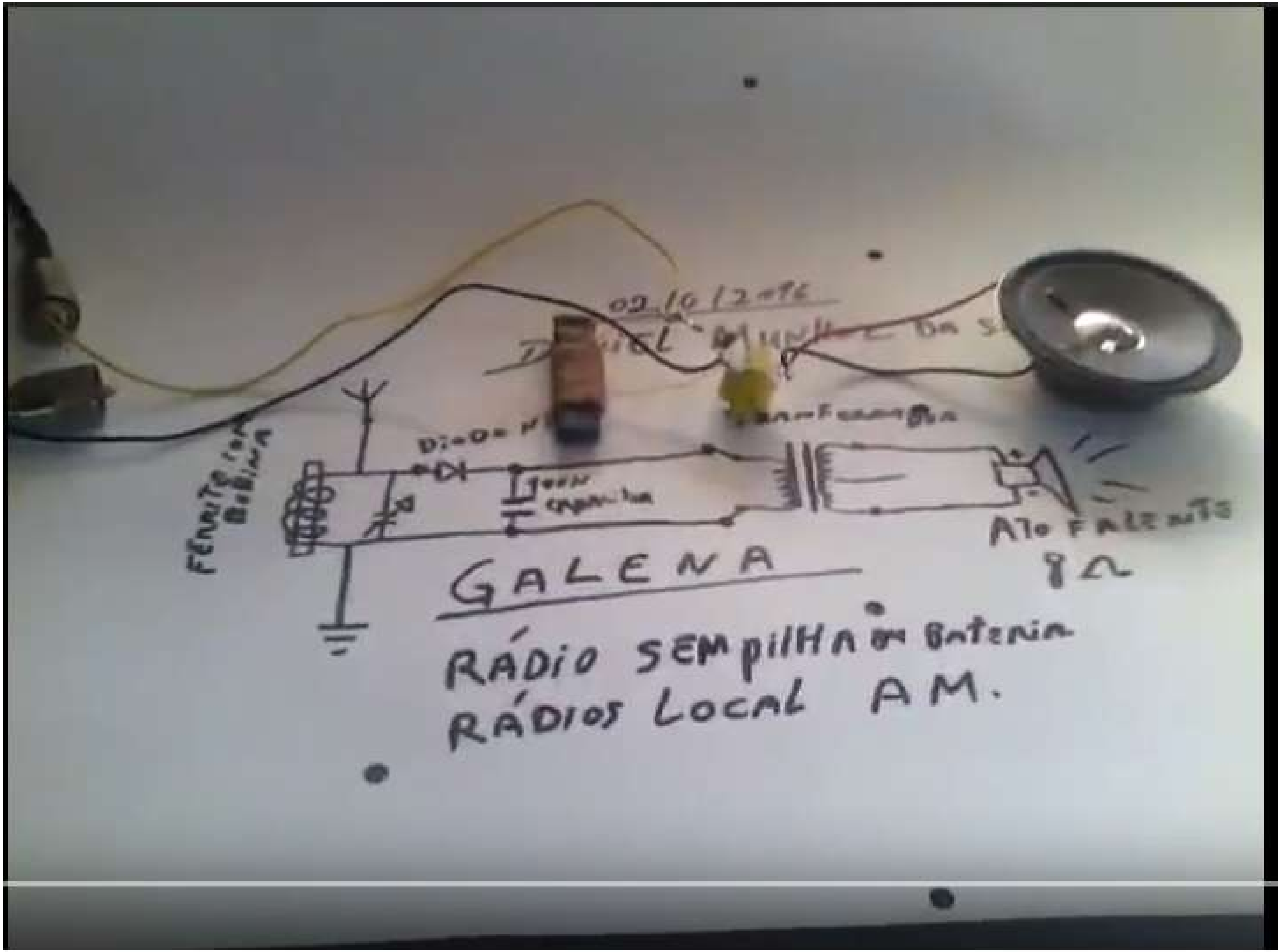
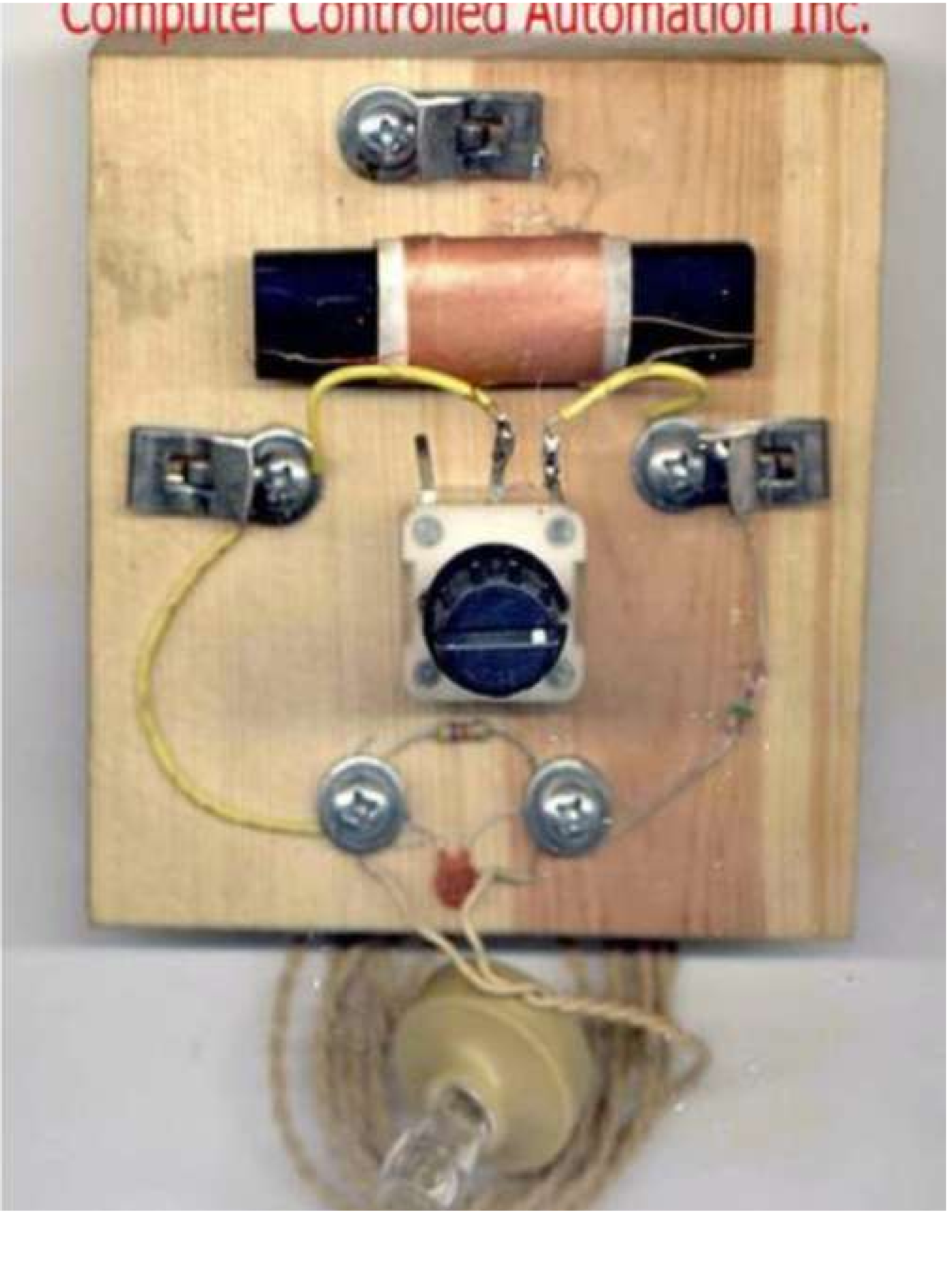
840
700


02/6/2016
DANIEL MUNHOZ
DIODO
100N



GALENA
RÁDIO SEM pilHA ou Bateria
RÁDIOS LOCAL AM.


02/6/2016
DANIEL MUNHOZ DA S
DIODO
100N
TRANFORMADOR
ALTO FA
8Ω
GALENA


Computer Controlled Automation Inc.

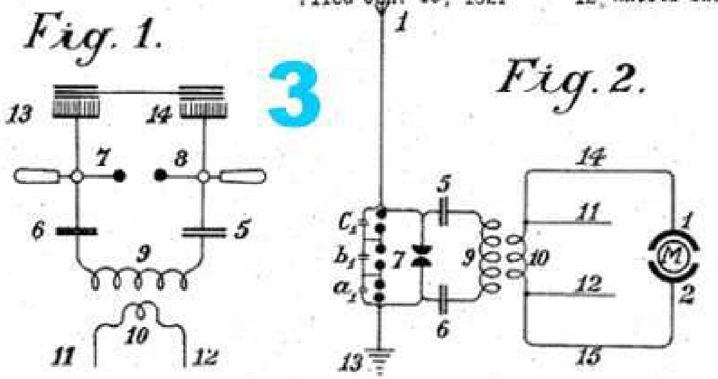
1. Mahlon Lumis (США) уже в середине XIX века применил пламенные ионизаторы для питания атмосферным электричеством телеграфной связи в Западной Вирджинии
2. Walter Pennock (США) предложил систему для собирания атмосферного заряда на сетки, подвешенные к аэростатам из металлизированной ткани. Энергия накапливалась в лейденских банках
3. Herman Plauson (Германия) впервые предложил полную систему для получения и преобразования атмосферного электричества в энергию обычного стандарта. Электрический заряд, накапливаемый поверхностью приемников, с помощью инвертора превращался в ток промышленного стандарта. Мощность опытных установок от 0,72 до 3,4 кВт.
4. Современная установка для питания от атмосферного электричества метеорологической аппаратуры. Россия. Патент RU 2245606 (2003 г.)

Methods Suggested by Loomis for the Harnessing of Electricity from the Atmosphere

June 9, 1925. H. PLAUSON 1,540,998

CONVERSION OF ATMOSPHERIC ELECTRIC ENERGY

Filed Jan. 13, 1921 12 Sheets-Sheet 1



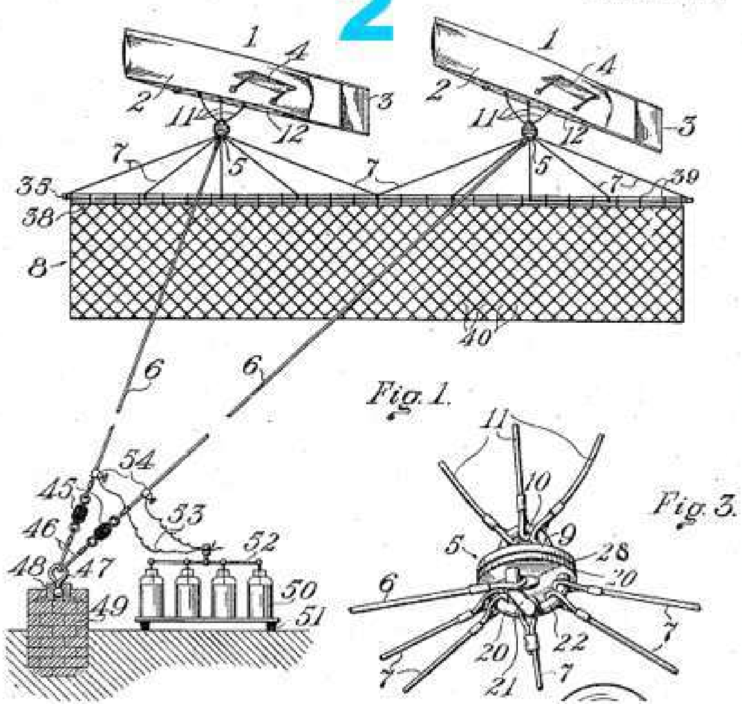
W. I. PENNOCK.

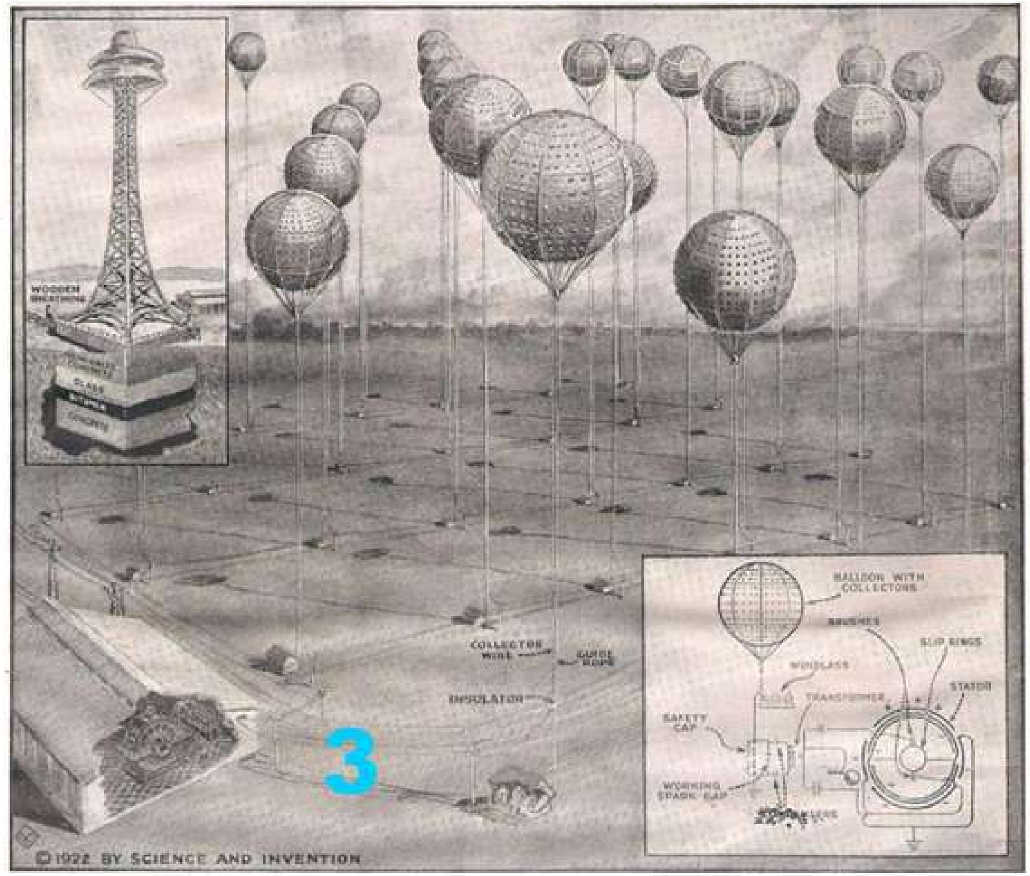
APPARATUS FOR COLLECTING ELECTRICAL ENERGY.

APPLICATION FILED JAN. 4, 1911.

1,014,719. Patented Jan. 16, 1912.

2 SHEETS-SHEET 1.





(A) comprises of an electronic data storage unit and pulse generator in one unit. The monostatic 1.5 GHz antenna (B) is encased within a broom-like device (C), which includes a survey wheel essential for horizontal spatial control. The monitor display (D) allows for on-site cursory analysis. A hundred foot cable (E) attaches the antenna to the control unit. A direct current (DC) power conversion unit (F) may also be necessary if the power source originates from a 110-volt alternating current source. More recent radar systems are now available that are more compact for field portability.

Figure 1 – Ground Penetrating Radar System Components

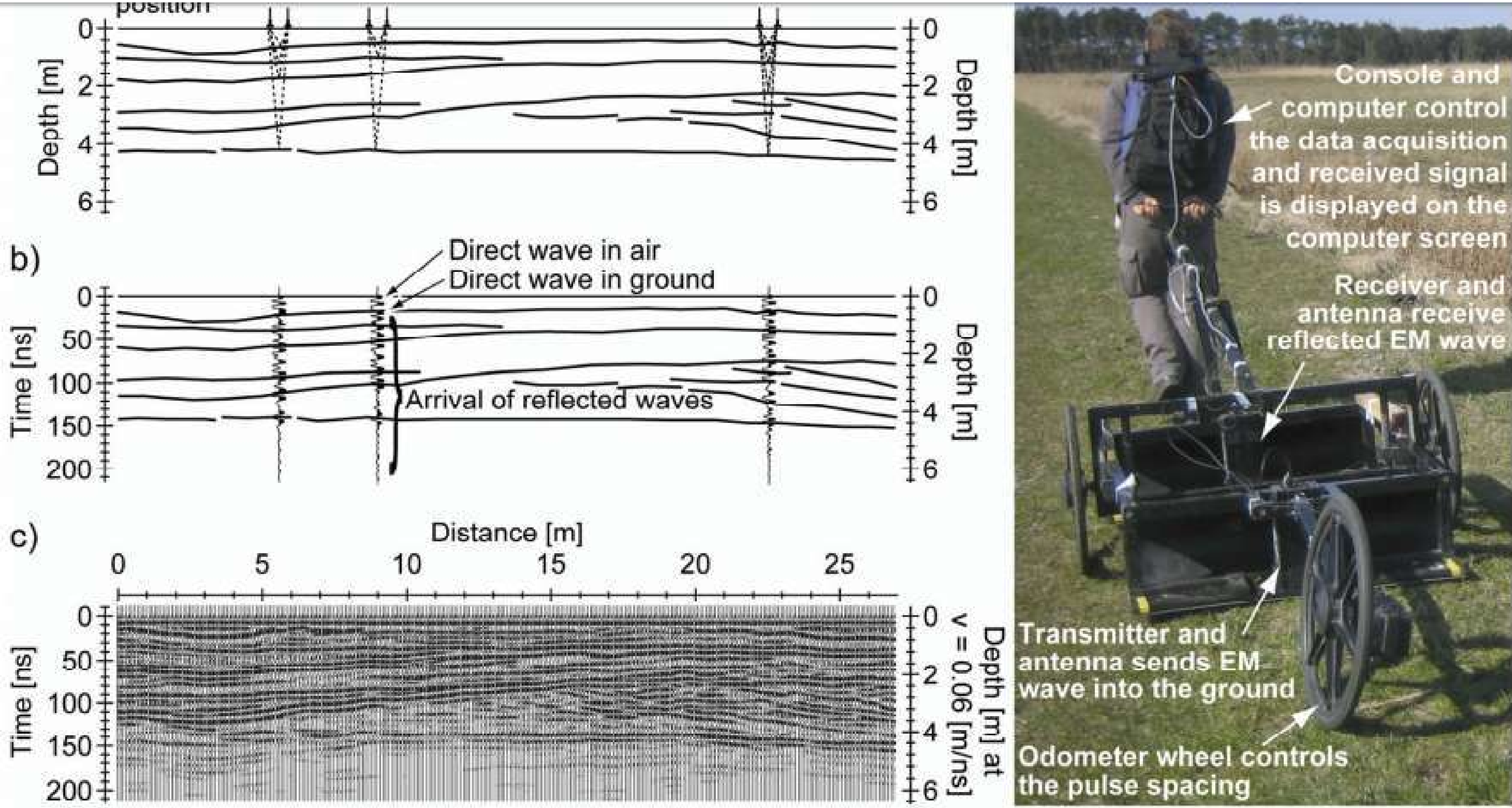


Fig. 4.7.1: Principles of GPR in reflection profiling mode. a) In reflection profiling a set of transmitting antenna and receiving antenna with constant separation is moved along the profile. The path of some of the reflected waves is sketched for antenna position 56, 91 and 226 of the GPR profile in (c). b) The received signal of these antenna positions is displayed in wiggle mode. c) GPR profile acquired with 200 MHz system in a coastal environment. The horizontal axis displays the distance along the profile. The vertical axis to the left displays the two-way travel time and the axis to the right displays the converted depth. d) Photo of a GPR system equipped with 100 MHz antenna. The text on the photo explains the different part of the system.

Fig. 4.7.2: Principles of GPR in CMP mode. a) In CMP mode a set of a transmitting antenna (Tx) and a receiving antenna (Rx) are moved away from each other. The six first antenna positions are shown with the path of the reflected wave from the first reflector. b) Sketch of the path of the most common waves that is present in a CMP. c) Diagram of the received signals in a CMP. The horizontal axis displays the distance between the transmitting and the receiving antenna. The vertical axis displays the two-way travel time. d) Photo of a GPR system that is ready for a CMP sounding.

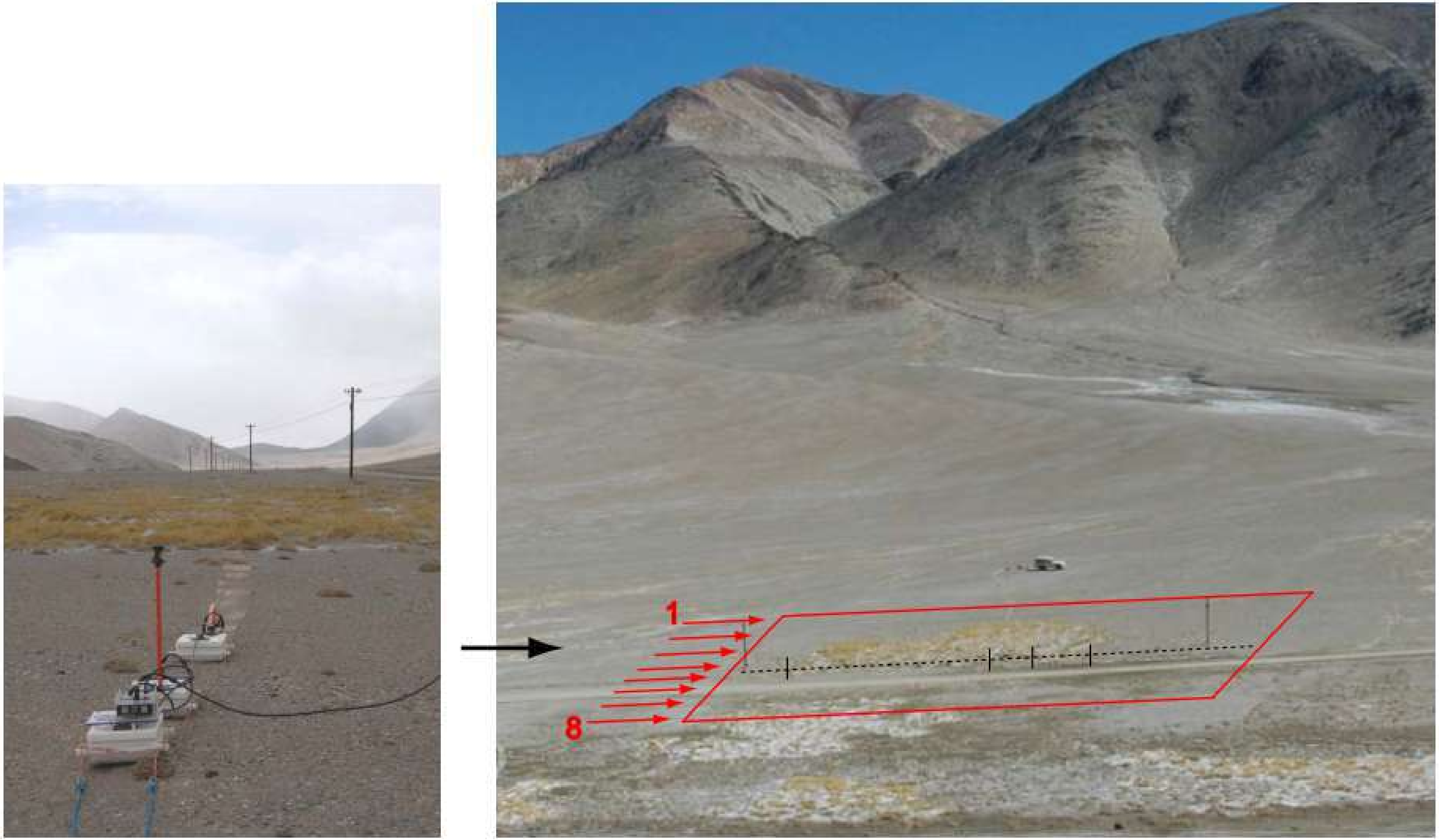
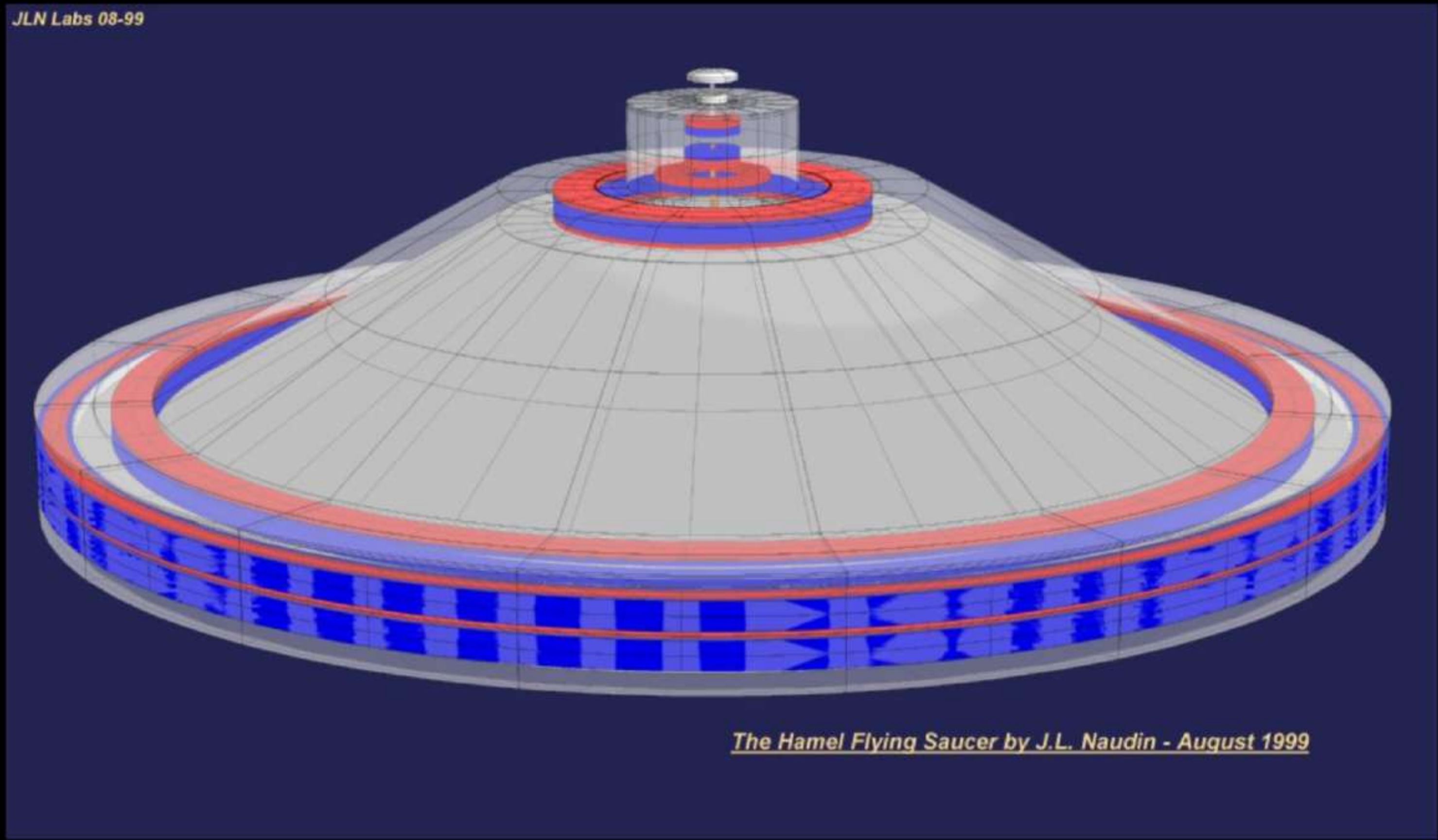


Fig. 2. Photographs of the study area: GPR measurements were acquired at the foot of an alluvial fan, partly across bare soil, a small vegetated area and the roadbed of the Xinjiang-Tibet Highway (red box; arrows indicate the direction of GPR lines as shown in Fig. 4; thin dashed line: transect discussed in Sect. 4.1, Figs. 4 to 6, transitions between vegetated and non-vegetated areas are marked separately). A detailed photograph of the vegetated area and the adjacent bare soil is provided on the left photograph, the black arrow indicates the location and viewing direction of the photograph at the left.



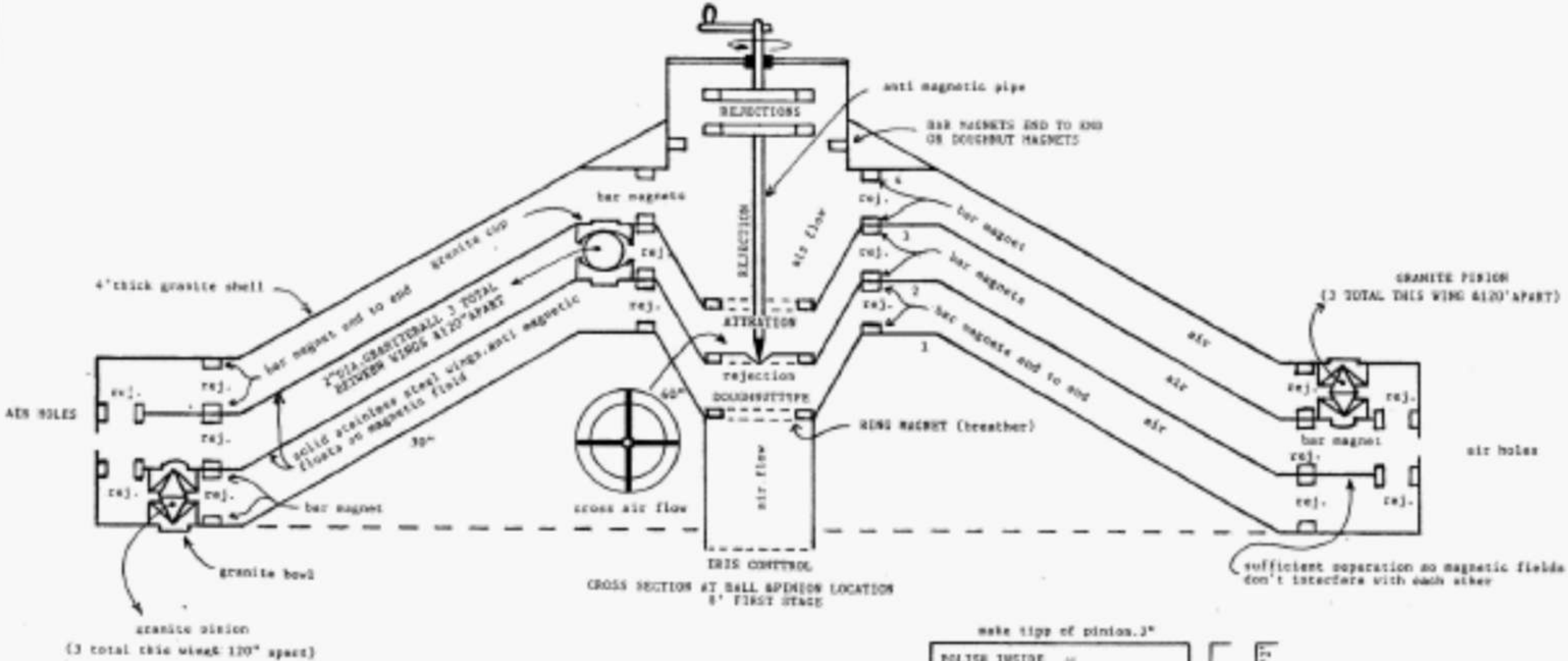
The David Hamel's Pictures Album

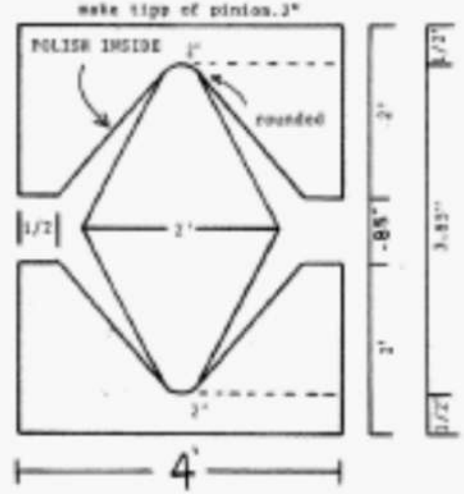
Courtesy of **Tracy** from the ***Hamel's Teamwork***

created on September 18th, 1999 - ***JLN Labs*** *- Last update September 21th, 1999*

The Hamel's Flying Saucer (HFS) under construction

GRAVITOMAGNETIC DRIVE

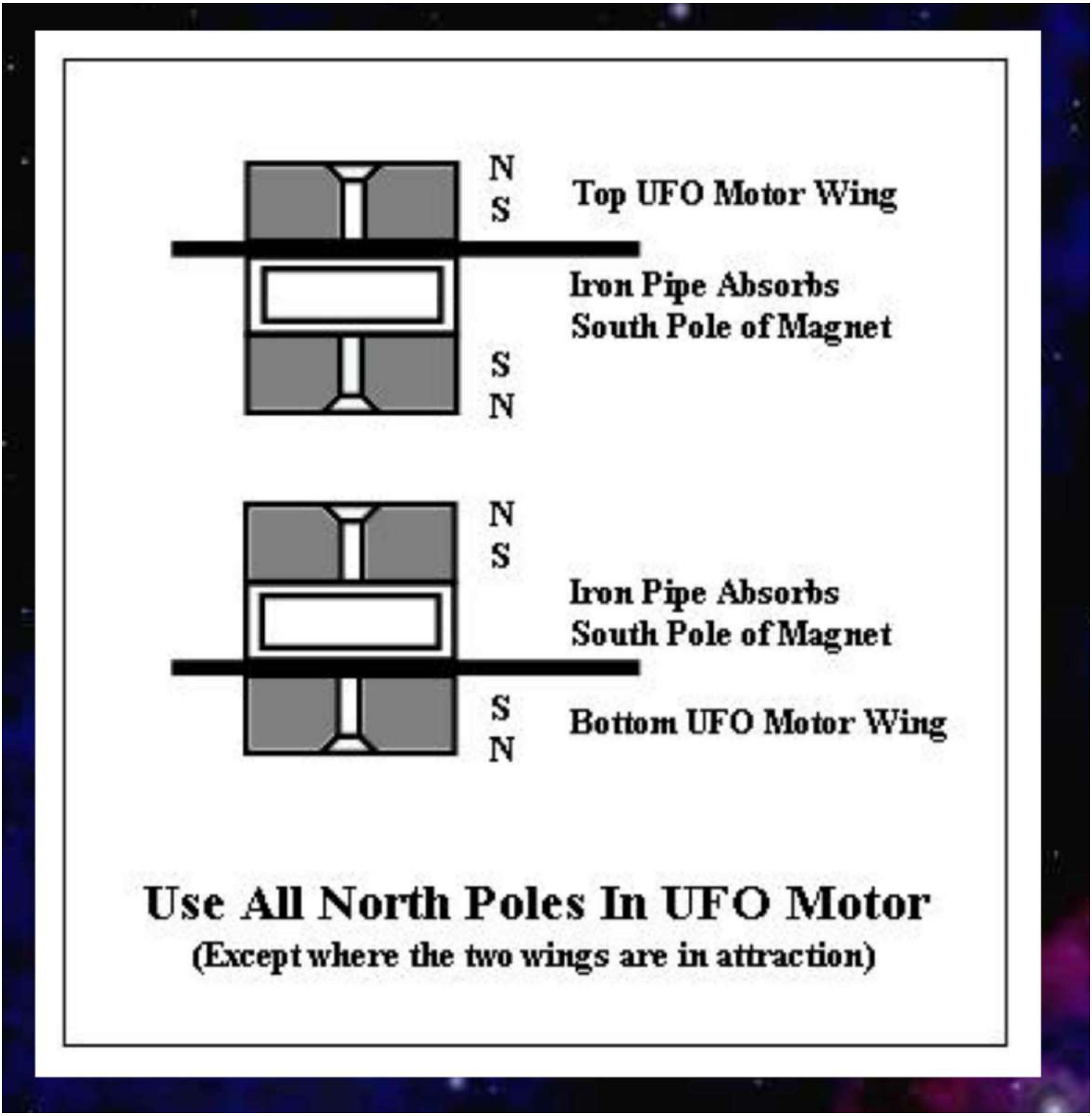


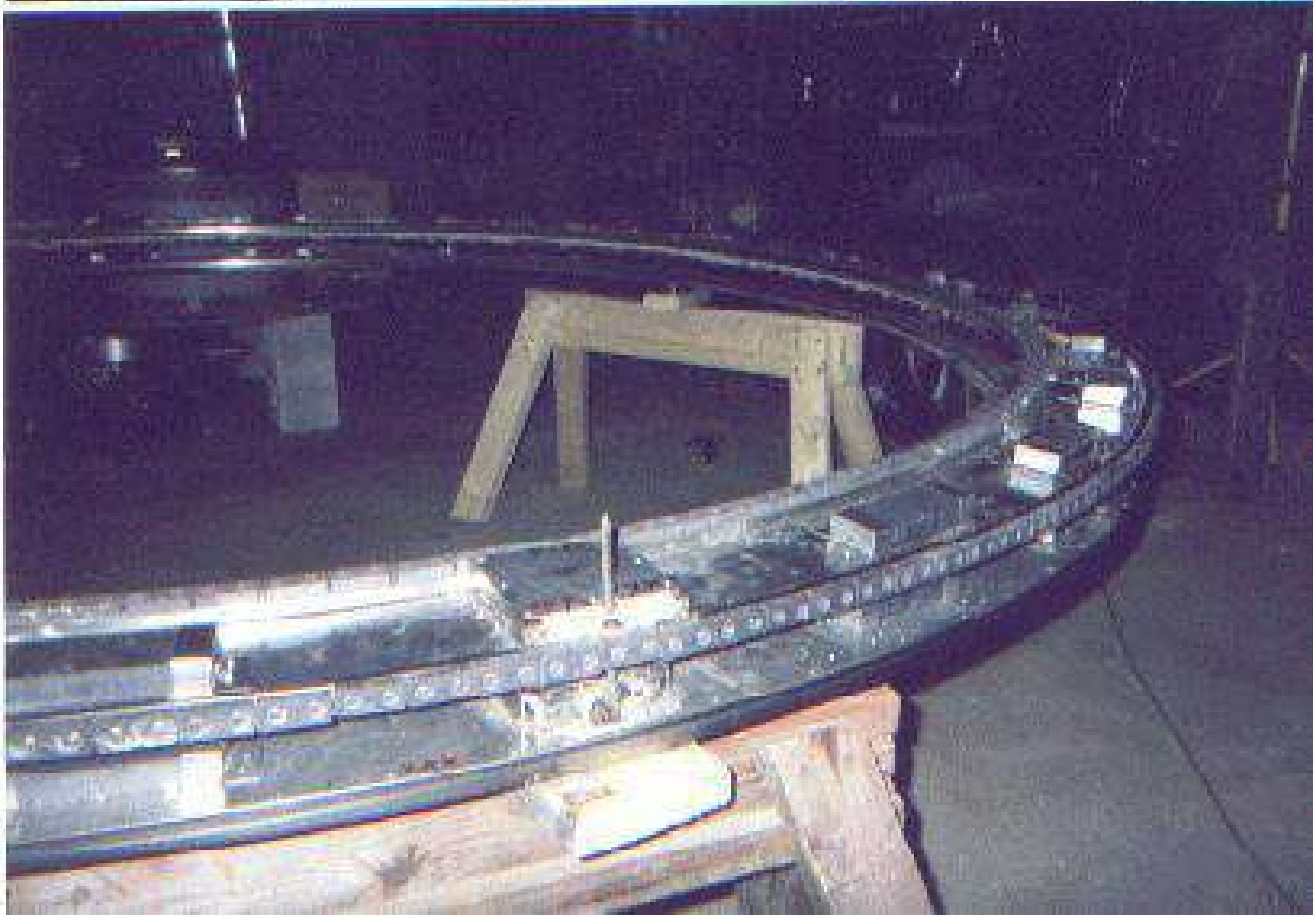


-REVERSE ORDER FOR INSIDE CONTROL

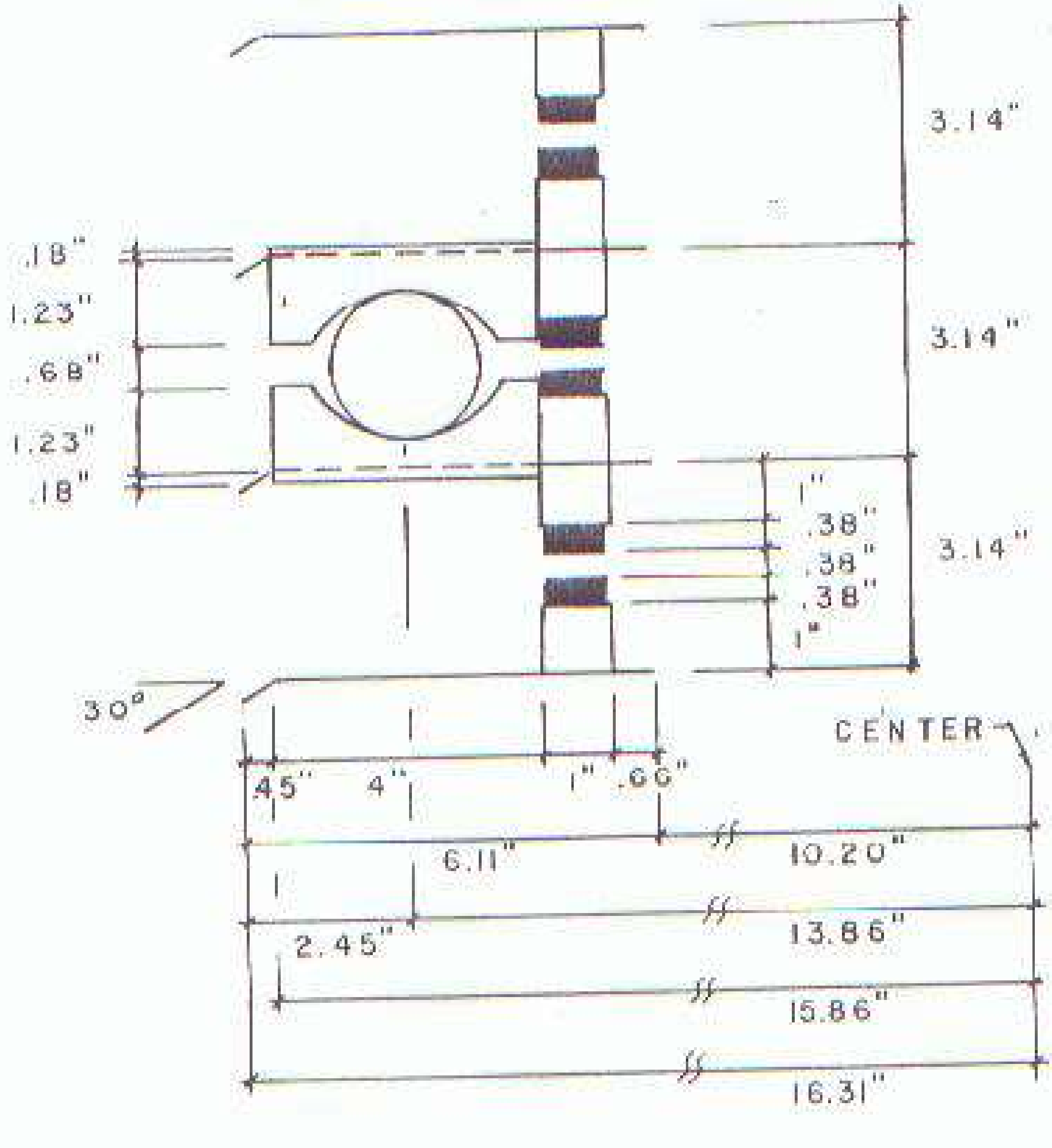
NOTES:
(1) WINGS MUST BALANCE PERFECTLY.
(2) ATTACTION PRODUCES ENERGY BETWEEN.
MIDDLE WINGS AT BREATHER-CREATES SPARK.
(3) SECOND STAGE PLACED BELOW FIRST STAGE WITHPLACEMENT OF TRANSFORMERS.ALL COMPONENTS ARE DOUBLED.CROSS PLACED AT UPPER WING AND CONTROL HANDLE WITH COLLAR PLACE BELOW 1ST CONE FOR SECOND STAGE.
(4) THIRD STAGE BELOW 2ND STAGE WITH LIVING QTRS AND ALL COMPONENTS ARE AGAIN DOUBLED.TWO POWERS CAN CREATE FOUR POWERS.4TH STAGE FOLLOWS.
(5) DIMENTIONAL SIZE MUST BE CORRECT.
(6) AIR BEING CHARGED PRODUCES NATURAL GASES.
(7) WINGS NEED SUFFICIENT CLEARANCE FOR EXPANSION.
(8) CERAMIC 5 BAR MAGENTS MEASURING 1.875x.875x.390w/2.18) COUNTERSUNK HOLES THRU.390 DIAMETER HOLES.LARGER#5 MAGNETTS
MAY BE USED.8.33x4.66 CERAMIC 5 CENTER MAGNETS ARE DOUGHONUT SHAPED.

maybe used.8.33x4.66 CERAMIC 5 CENTER MAGNETS ARE DOUGHNUT SHAPED. INSIDE MAGNETS ARE END TO END. OUTSIDE VERTICAL.ALL BAR MAGNETS ARE IN REJECTION.


N
S
Top UFO Motor Wing
Iron Pipe Absorbs
South Pole of Magnet
S
N
N
S
Iron Pipe Absorbs
South Pole of Magnet
S
Bottom UFO Motor Wing
N
Use All North Poles In UFO Motor
(Except where the two wings are in attraction)

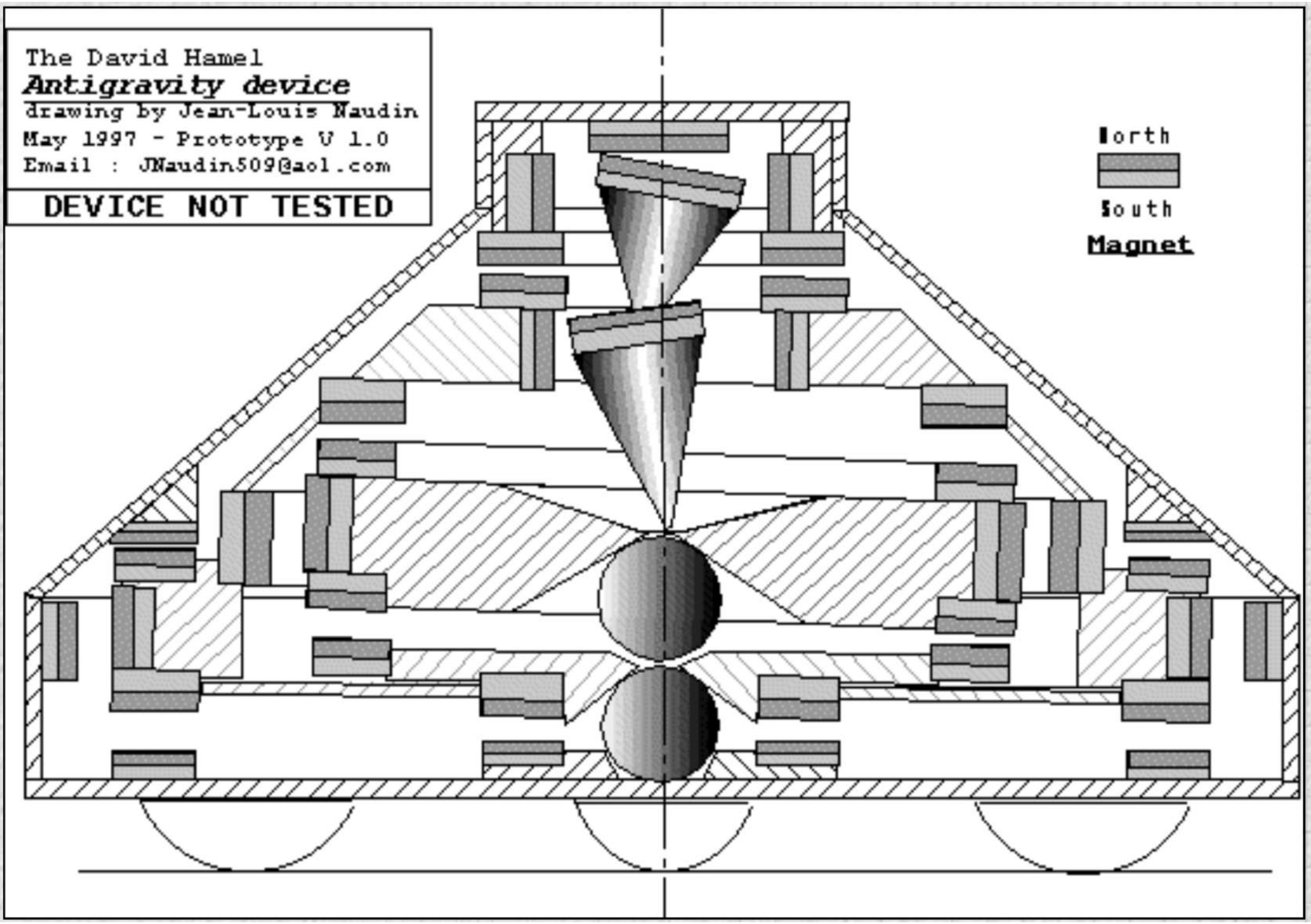



Lower Ring

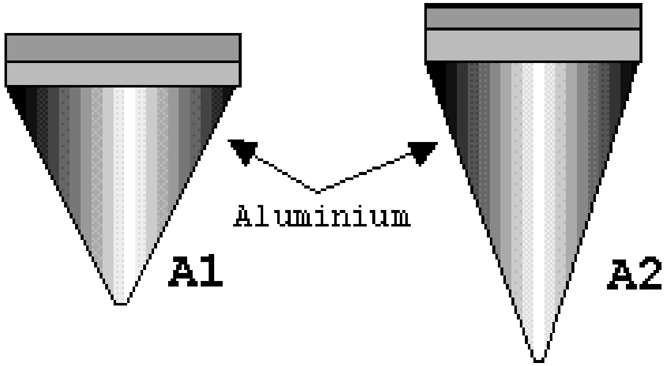

3.14"
3.14"
3.14"
.18"
1.23"
.68"
1.23"
.18"
1"
.38"
.38"
.38"
1"
30°
CENTER
.45"
4"
1"
.66"
6.11"
10.20"
2.45"
13.86"
15.86"
16.31"

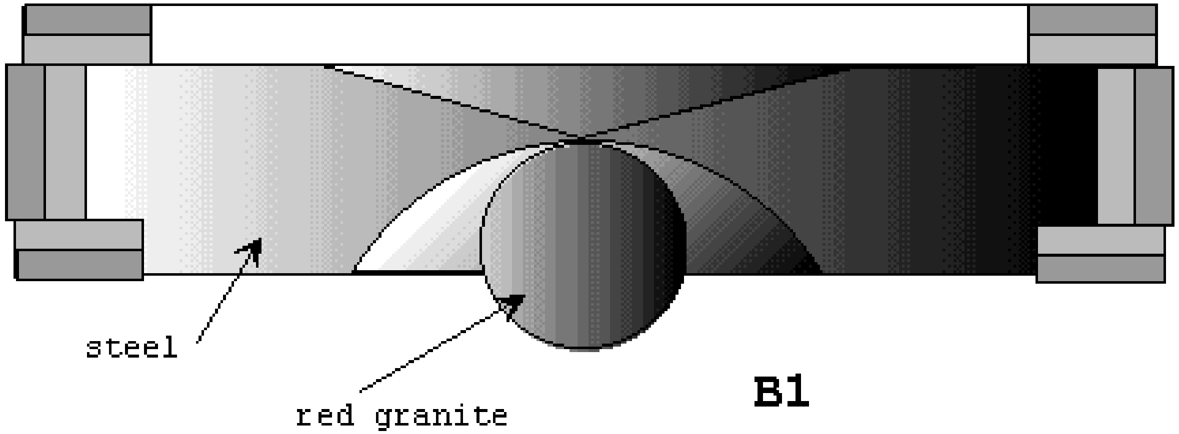


Reynolds Wrap



The David Hamel
Antigravity device
drawing by Jean-Louis Naudin
May 1997 - Prototype V 1.0
Email : JNaudin509@aol.com
DEVICE NOT TESTED
North
South
Magnet





The David Hamel

Antigravity device

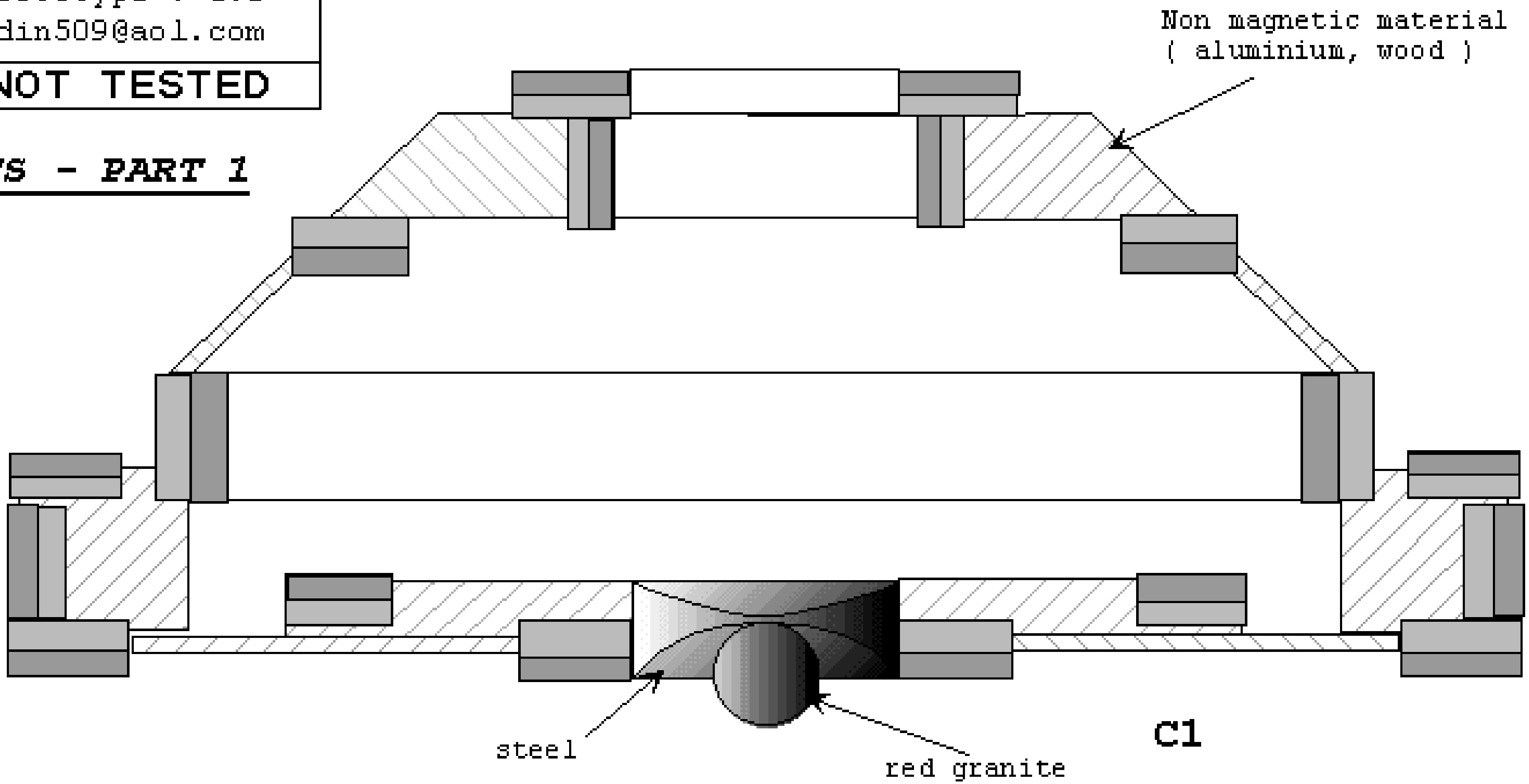
drawing by Jean-Louis Naudin

May 1997 - Prototype V 1.1

Email : JNaudin509@aol.com

DEVICE NOT TESTED

COMPONENTS - PART 1



The David Hamel

Antigravity device

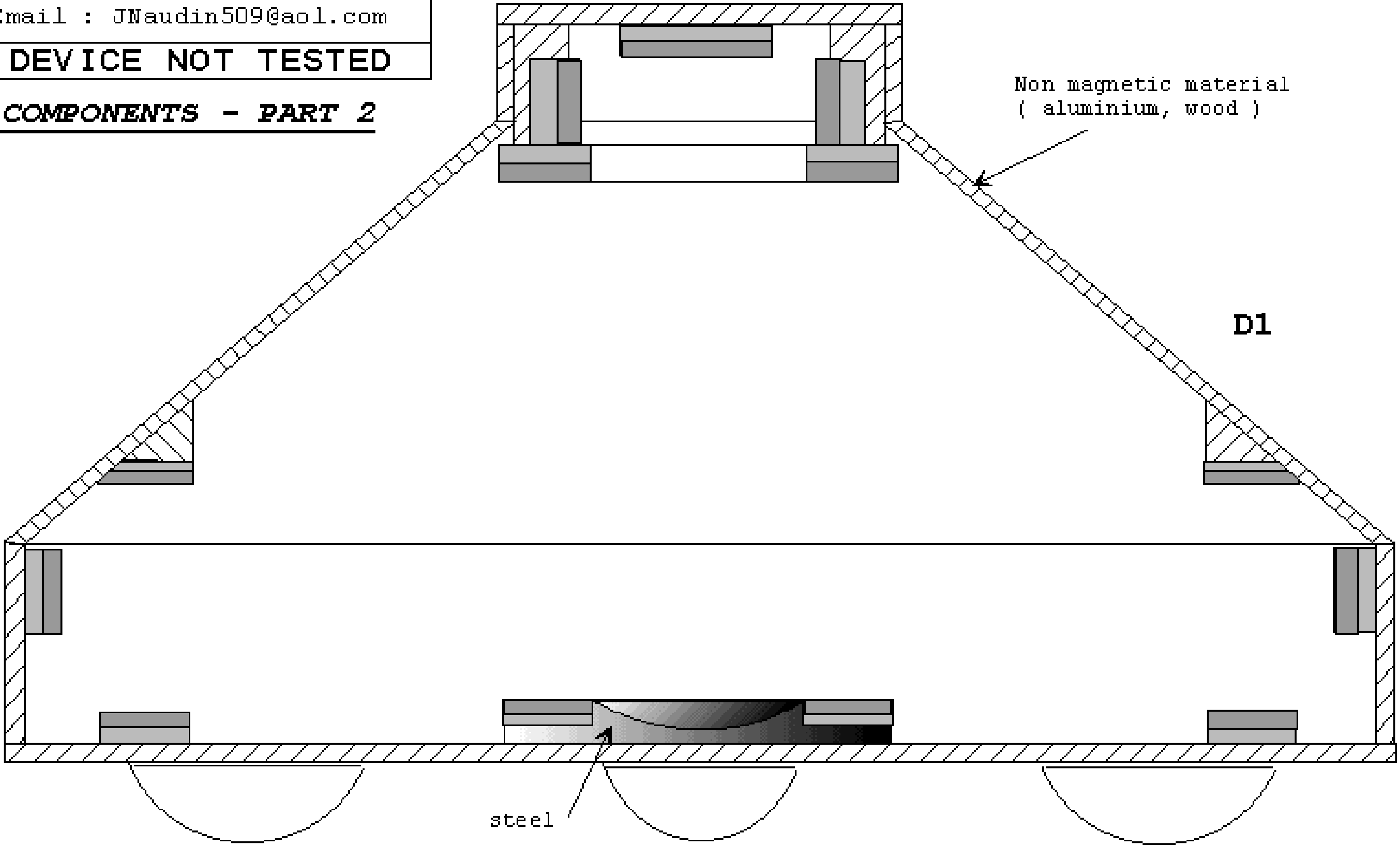
drawing by Jean-Louis Naudin

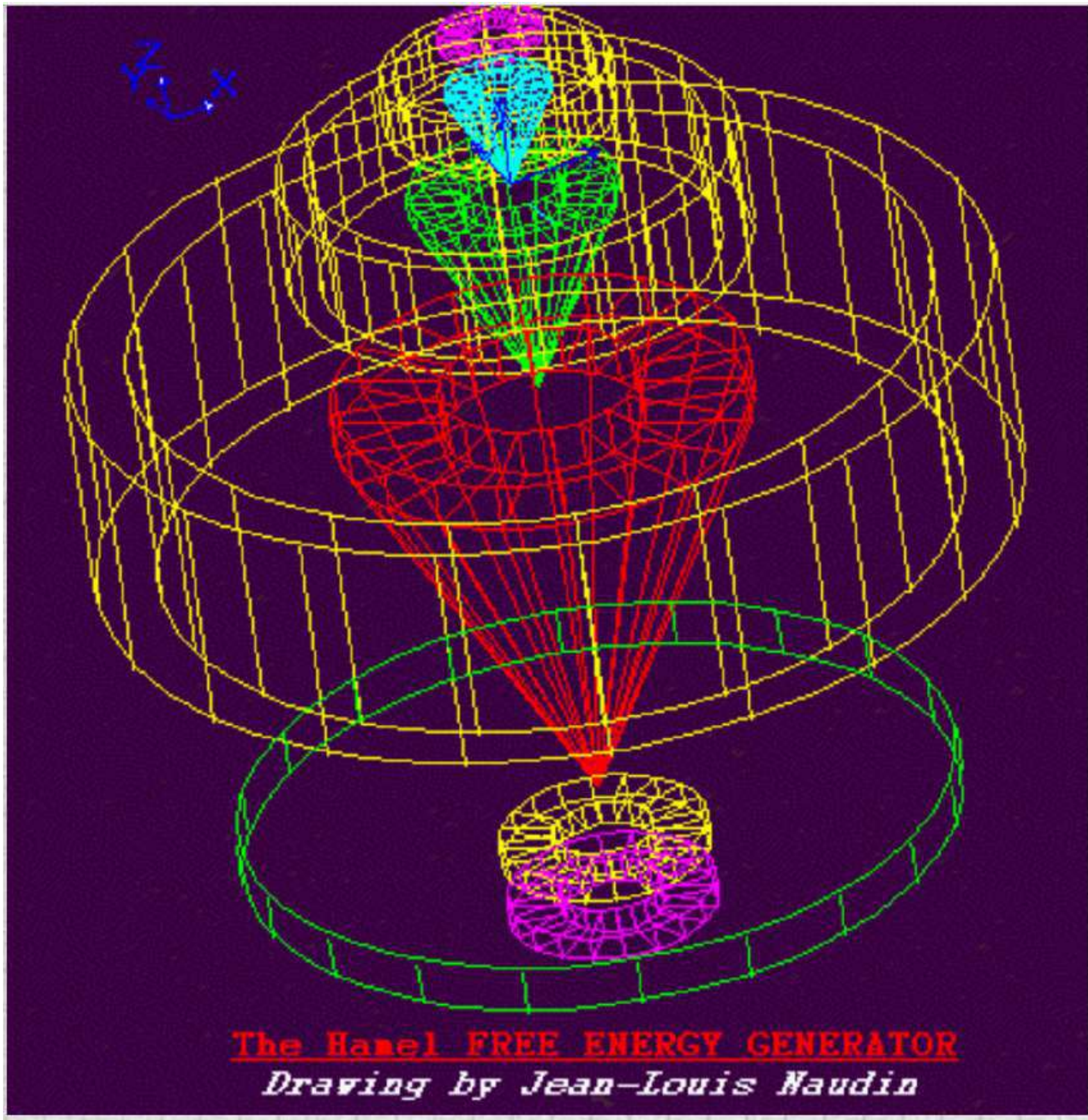
May 1997 - Prototype V 1.1

Email : JNaudin509@aol.com

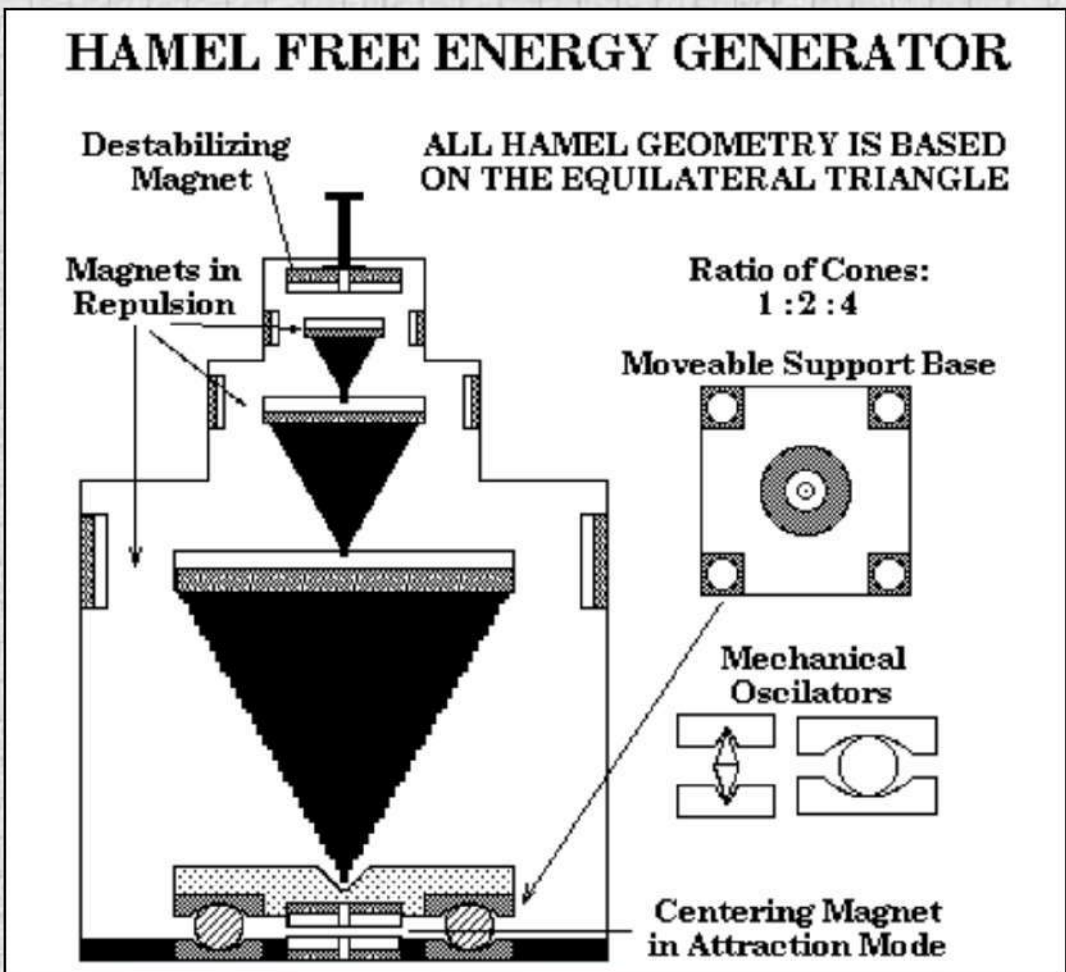
DEVICE NOT TESTED

COMPONENTS - PART 2

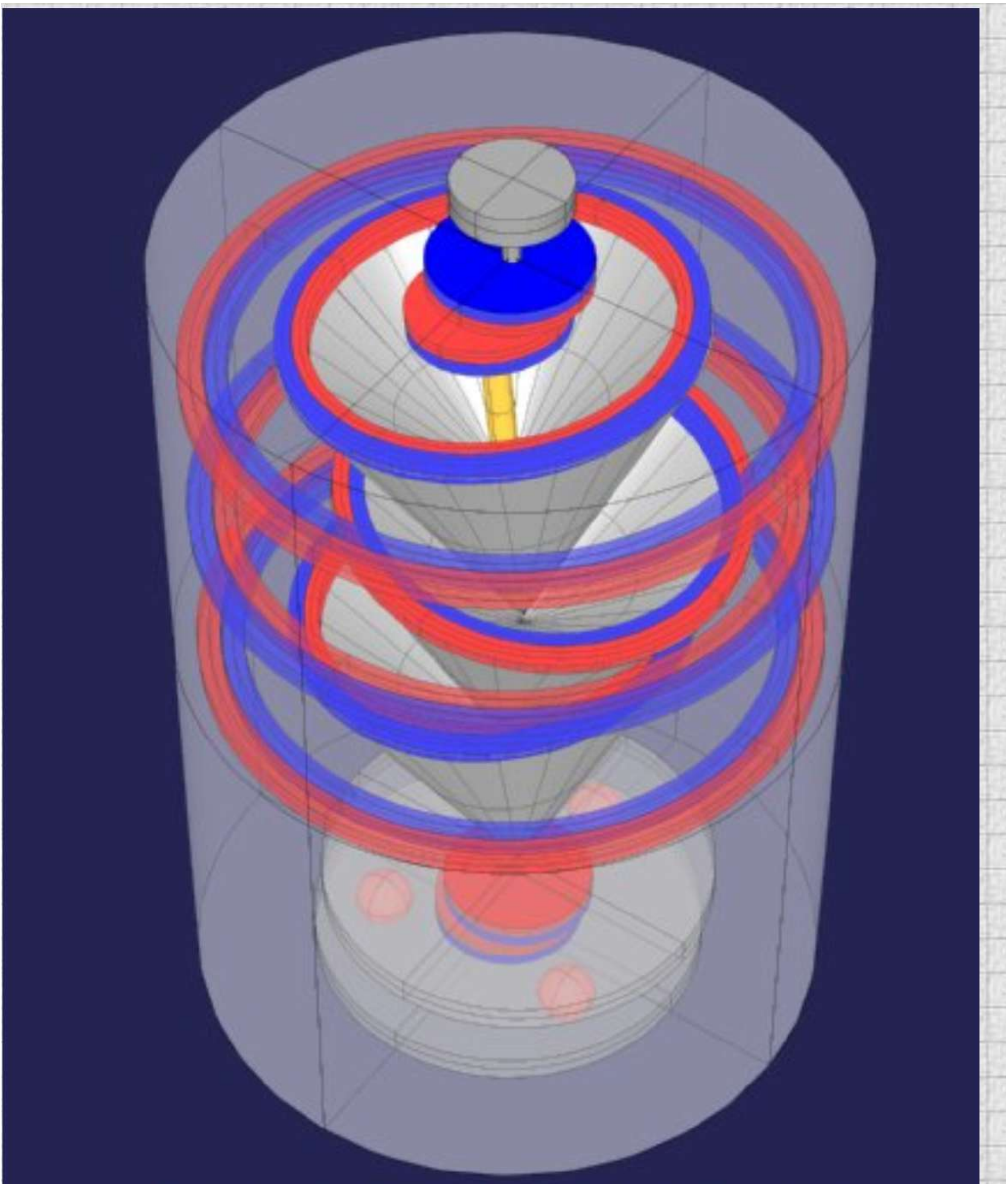




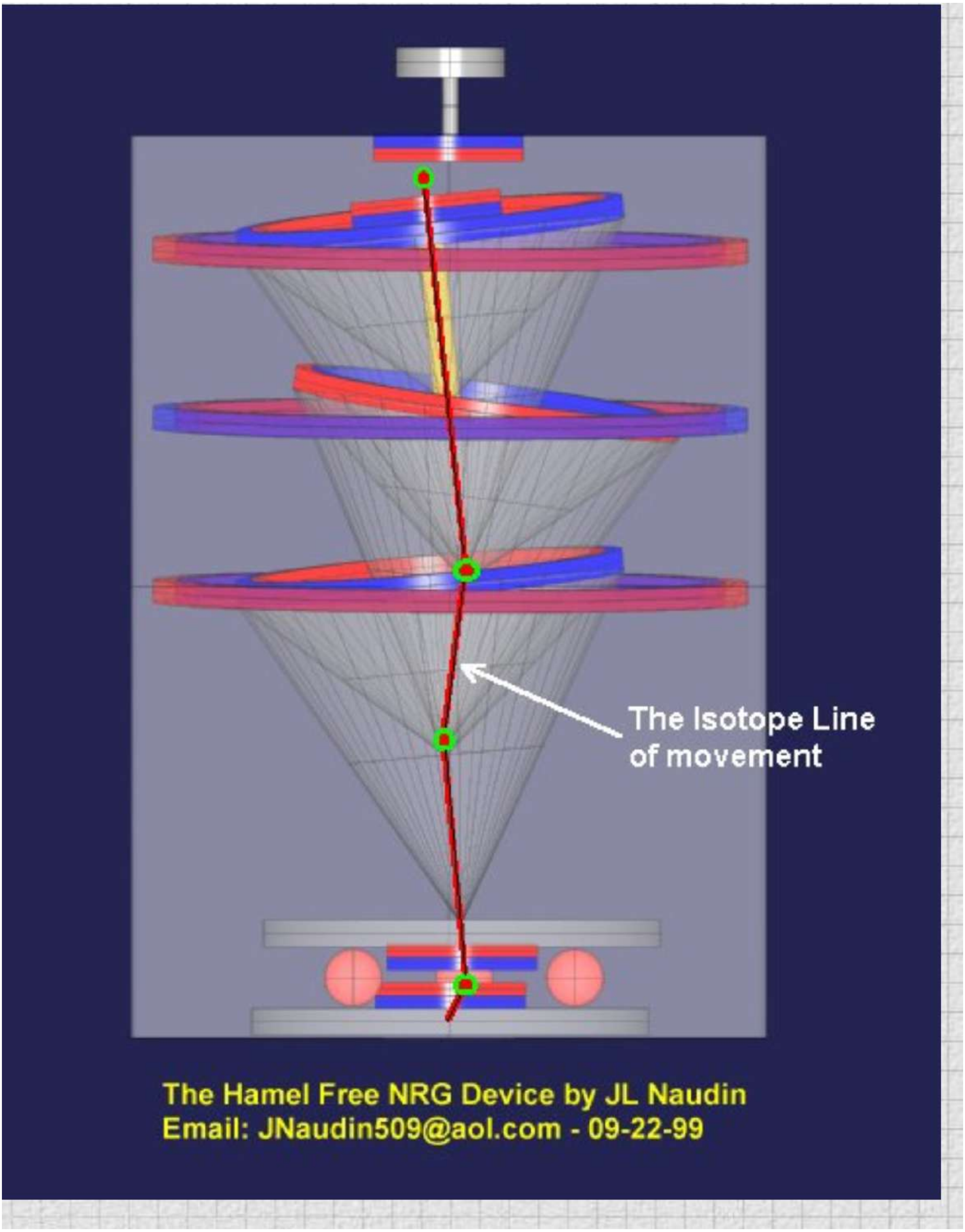
Z
Y
X
The Hamel FREE ENERGY GENERATOR
Drawing by Jean-Louis Naudin



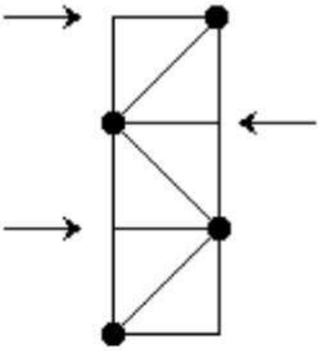
HAMEL FREE ENERGY GENERATOR
Destabilizing Magnet
ALL HAMEL GEOMETRY IS BASED ON THE EQUILATERAL TRIANGLE
Magnets in Repulsion
Ratio of Cones: 1 : 2 : 4
Moveable Support Base
Mechanical Oscilators
Centering Magnet in Attraction Mode



The Hamel Free NRG Device by JL Naudin
Email: JNaudin509@aol.com - 09-22-99

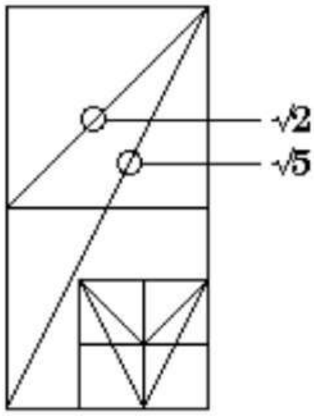

The Isotope Line
of movement
The Hamel Free NRG Device by JL Naudin
Email: JNaudin509@aol.com - 09-22-99

"Broken Line"

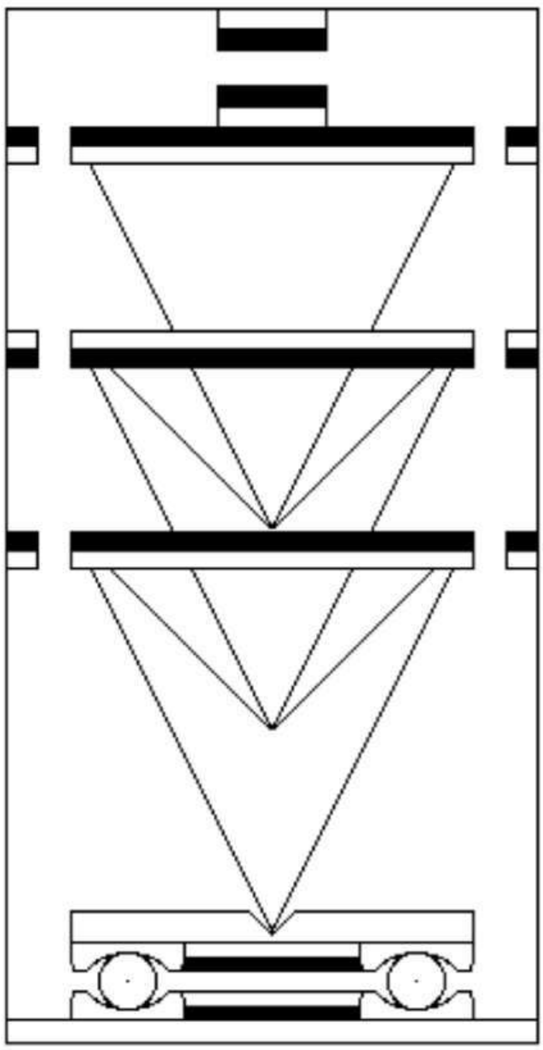


Oscillating Movement of Cones

Sacred Roots



Epyptian Djed



This device is based on Hamel magnetic motor demonstration. The Magnetic gate is build with 13 ferrite magnets 40x25x10 mm sticked outside a 100 mm PVC tube. The Hamel spinning disc is build with a ring magnet (outer diam 70 mm, inner diam 33 mm, 8 mm thick) sticked on a 67 mm steel ball (490 gr weight).

Operation :

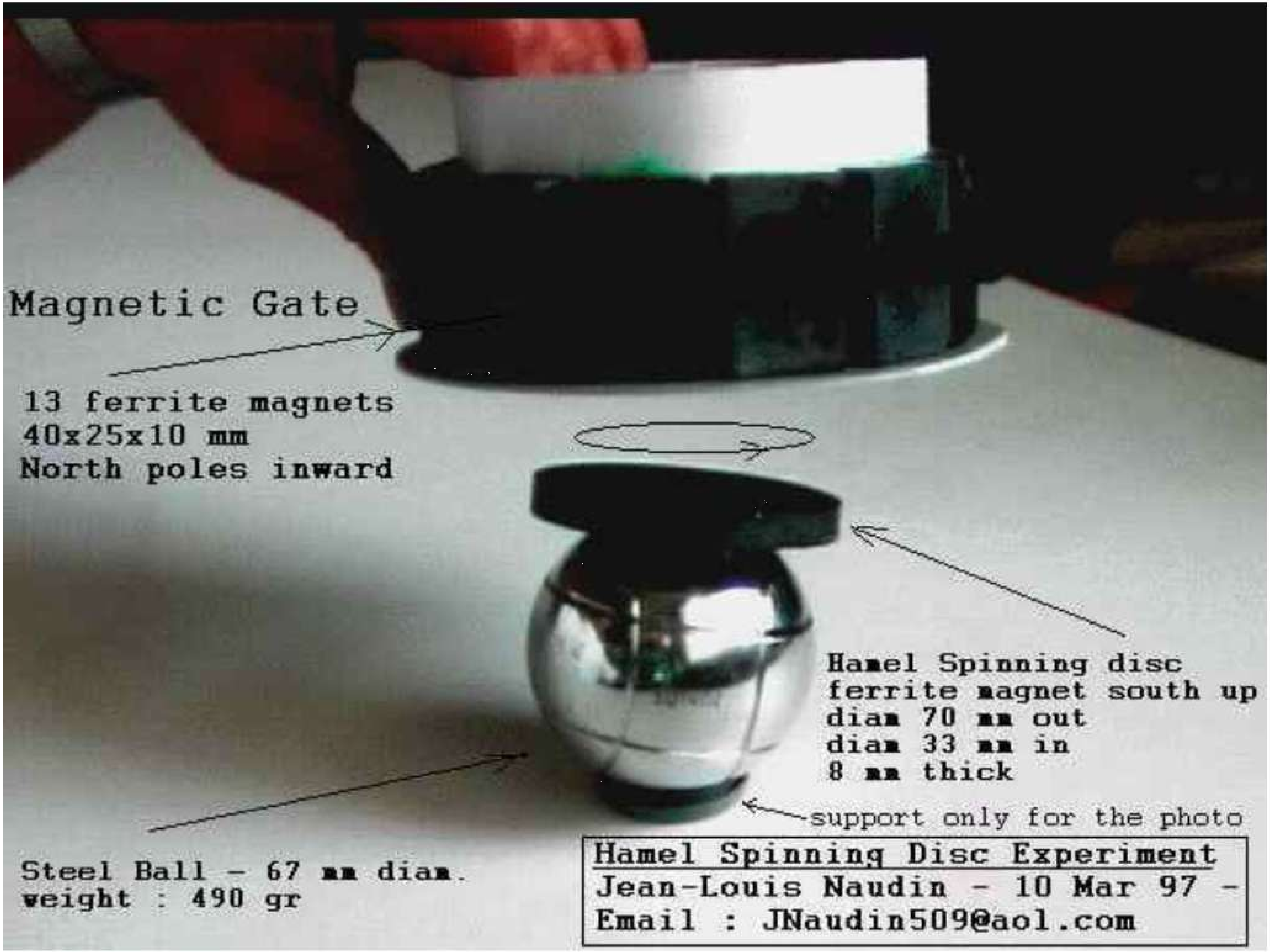
Take your magnetic gate in hands under the Hamel spinning device. The ring magnet start to spin fast like a top, if you tune correctly the distance between the magnetic gate and the ring magnet The magnetic gate above must be tilted and slightly offset axially... poles arranged so the magnets attract, not repel.

Comments :

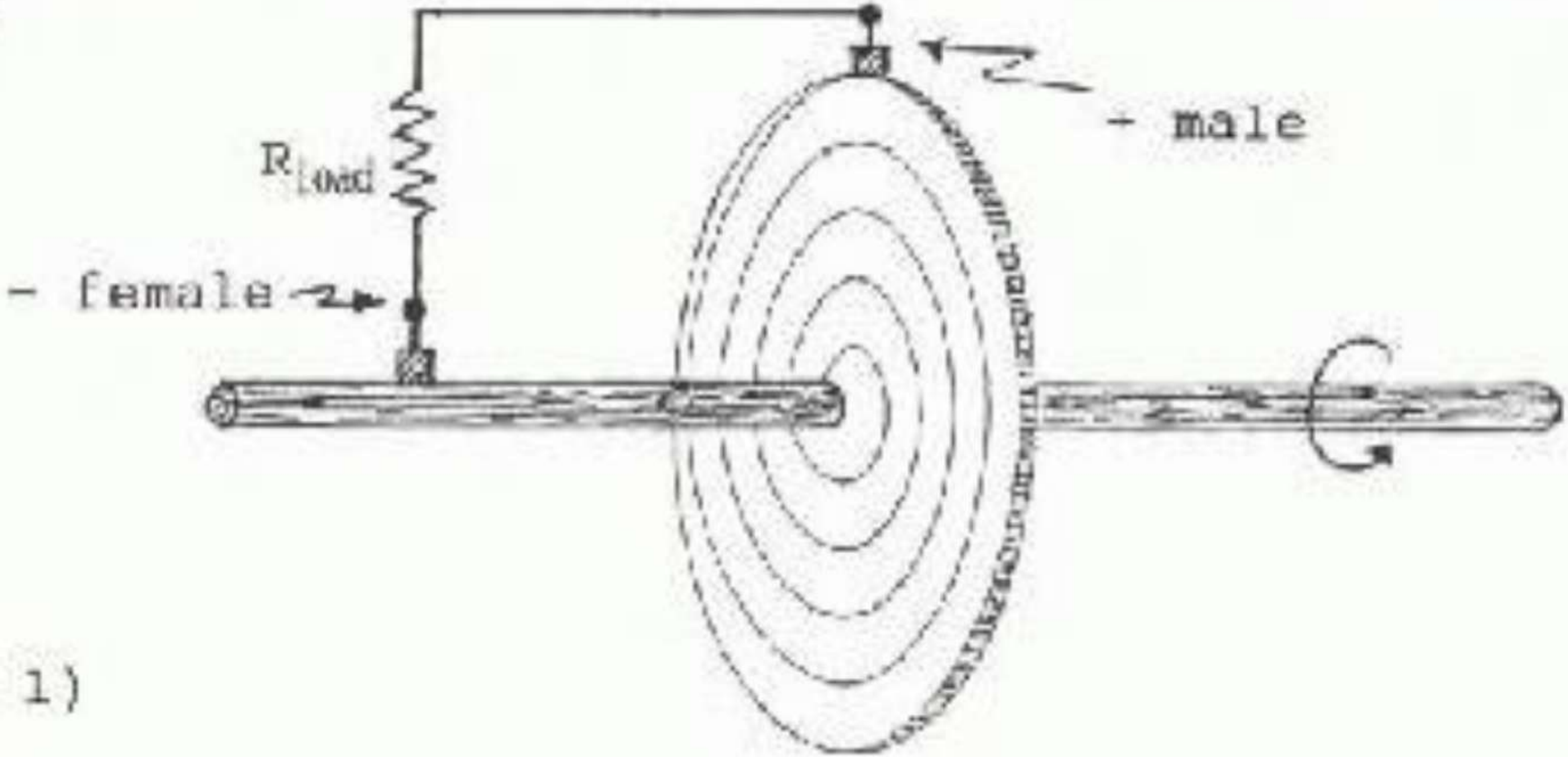
I can keep it spinning by moving and tilting the upper assy slowly from side to side. This changes the force vector to one side of the ring/ball and precession takes over. This MANUAL ALTERATION (with hands !!) of the force vector and precession is the reason of the result spin. If you put the magnetic gate in a fixed position, the Hamel spinner disc begin to spin but stops after a short time.....

(For more informations about "magnetic gate" see at : John Bedini's Magnetic Gate)

If you need more informations or if you have any suggestions, send me your Feedback

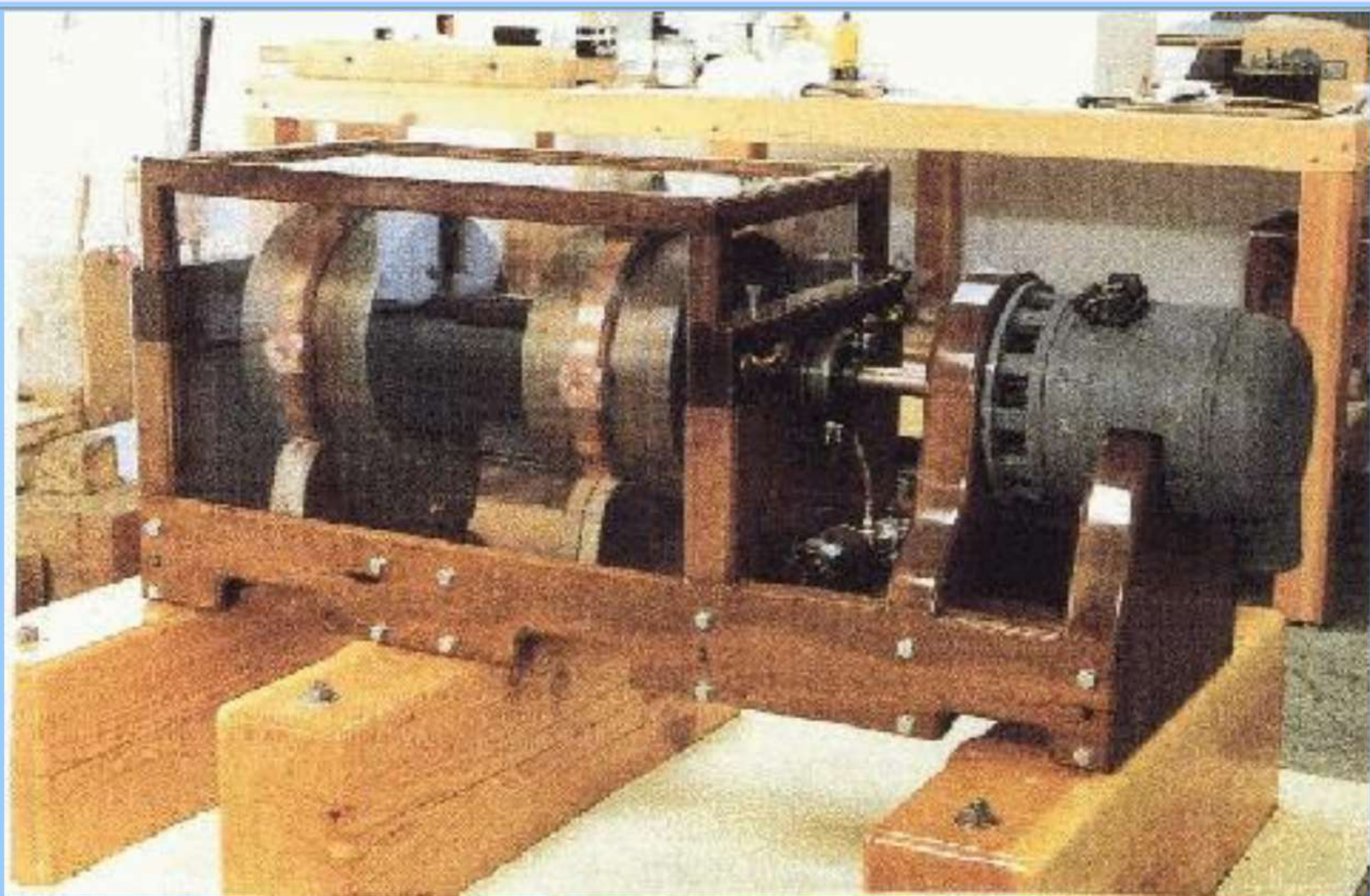

Magnetic Gate
13 ferrite magnets
40x25x10 mm
North poles inward
Hamel Spinning disc
ferrite magnet south up
diam 70 mm out
diam 33 mm in
8 mm thick
support only for the photo
Steel Ball - 67 mm diam.
weight : 490 gr
Hamel Spinning Disc Experiment
Jean-Louis Naudin - 10 Mar 97 -
Email : JNaudin509@aol.com

potentials is a rotating, magnetised, electrically c
spiral.



(figure 1)

PRIMORDIAL ENERGY



N-1 Homopolar Generator

"If you can imagine it, it's imaginable - if it's imaginable, it must be real."

- Bruce DePalma, 1997

Quadra pole N-machine

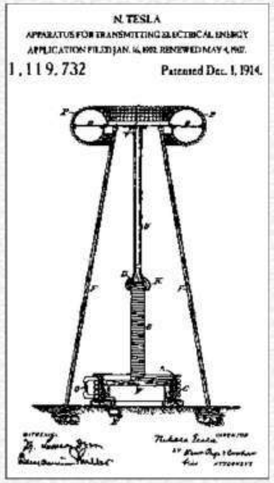
under test condition in 1995

Avramenko's Free Electrons Pump (AFEP v1.0)

By Jean-Louis Naudin

*created on November 1st, 1999 - **JLN Labs** - Last update November 3rd, 1999*

The AFEP experiment is based on the russian patent application filed on May 10th, 1993 by Stanislav and Konstantin [Avramenko]() ([PCT/GB93/00960]()). This a staight-forward application of the single-wire electrical energy transmission based upon the principle of longitudinal electrostatic waves as described by Nikola Tesla in the 1890s.



The **AFEP device v1.0** uses two main effects :

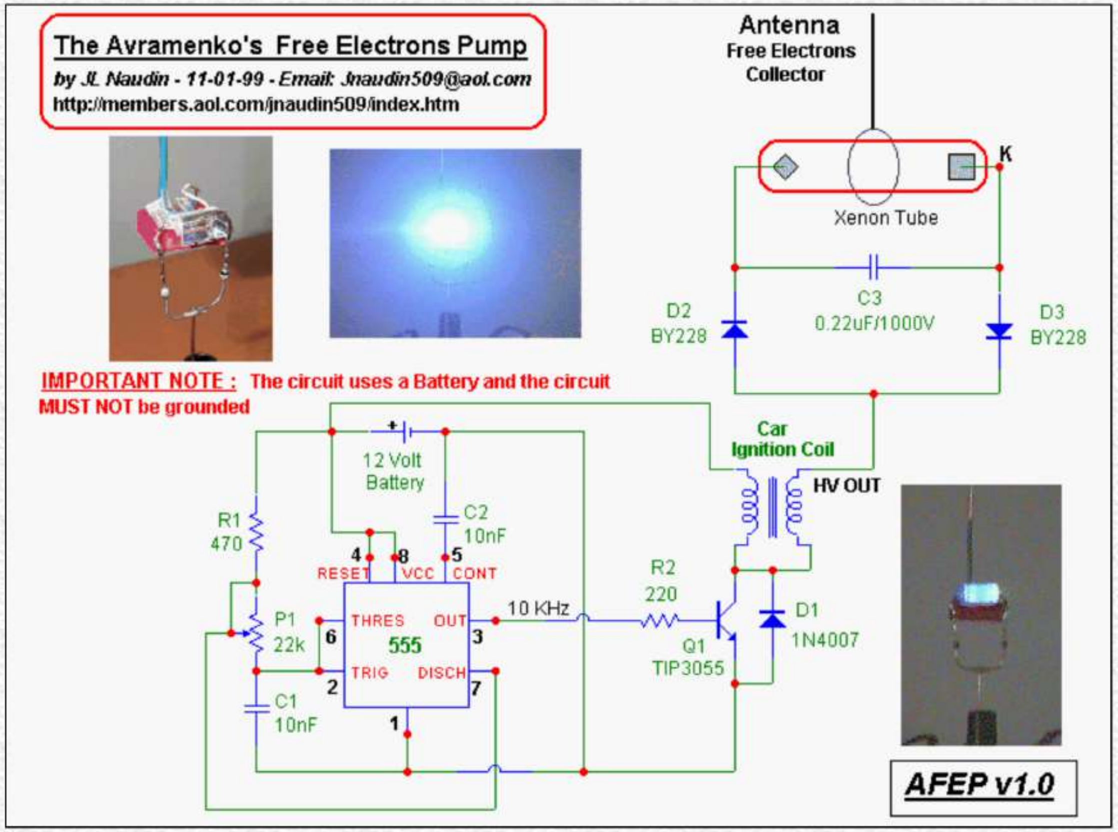
- The Avramenko's single wire transmission plug system
- The capacitance coupling with the earth atmosphere for tapping free electrons in the air medium.

Some testing devices and experiments have already been done successfully by Stefan Hartmann with the "Car ignition coil experiments with Avramenko plug" and freely released on the Web on October 26th, 1999 (thanks Stefan...).

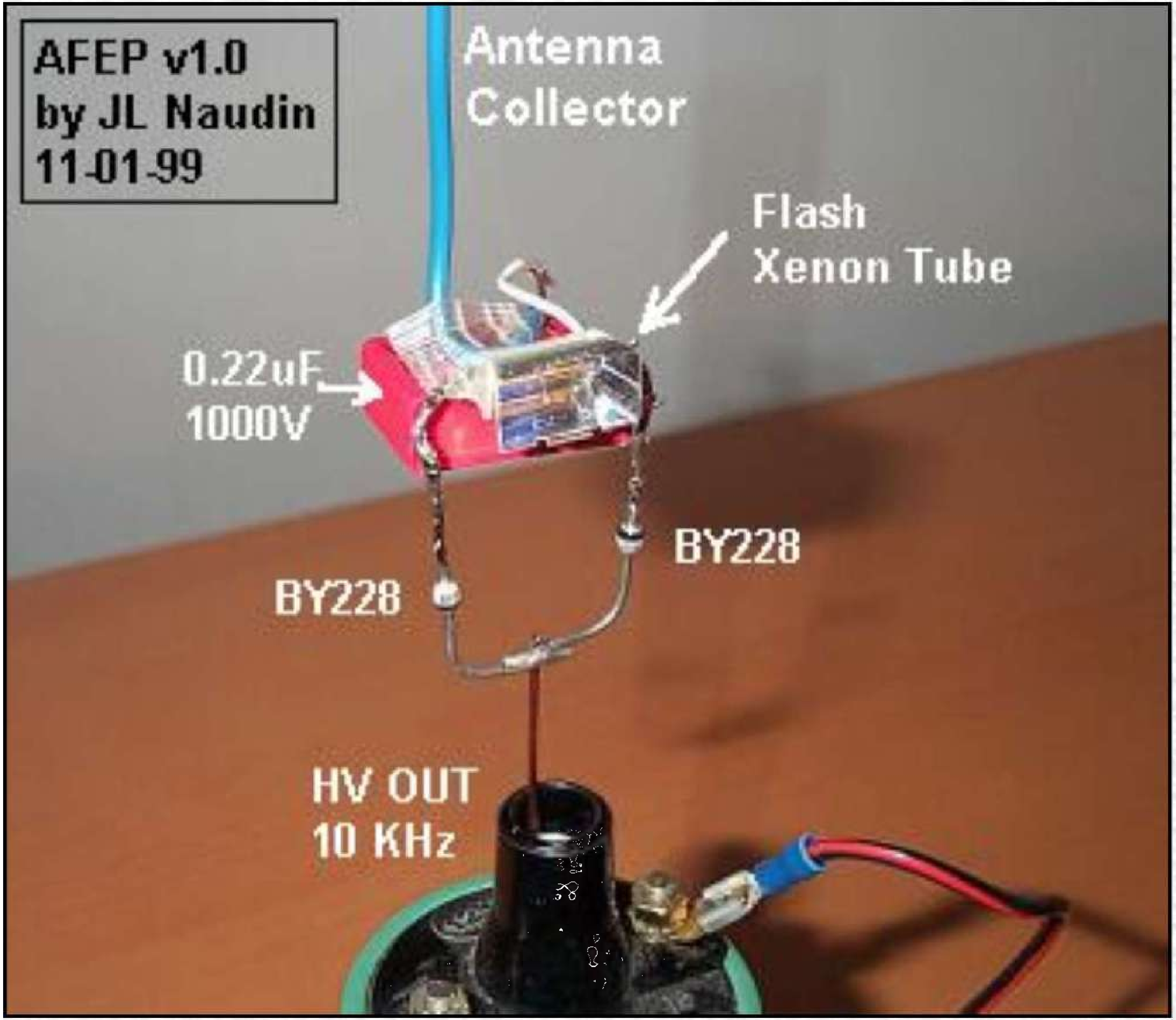
So, today, I have reproduced successfully the Hartmann's setup with some improvements :

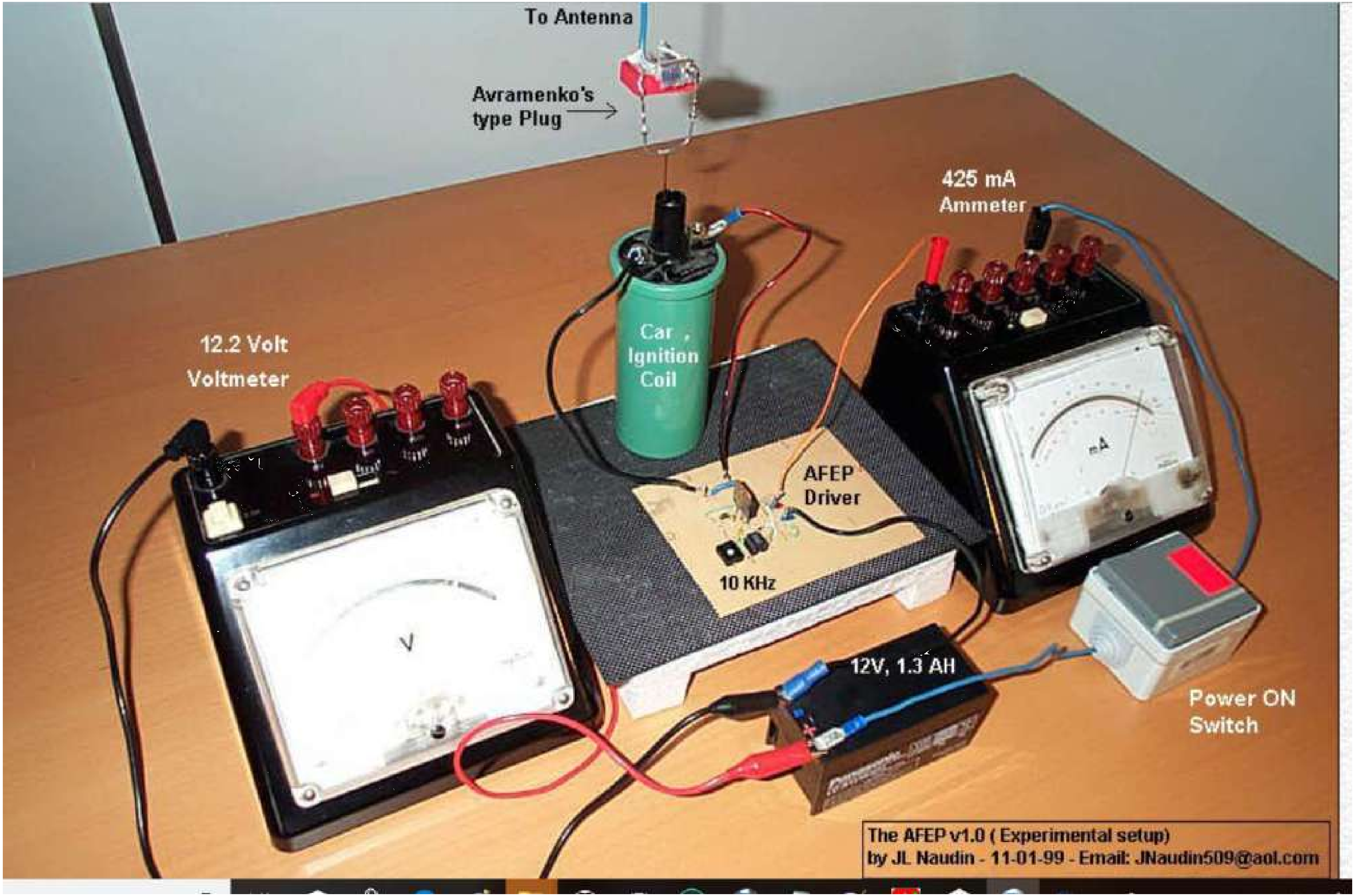
- The electronic generator (aka the Avramenko's monovibrator) runs at a higher frequency (10KHz),
- I have used a xenon flash tube instead of a simple spark gap,
- I have used a copper wire as an antenna for the coupling with the earth atmosphere (and not with the ground as in the Stefan's test), the sucked free electrons act as a trigger for the xenon flash.

The AFEP device MUST BE powered by a battery source (I have used a 12V 1.2 AH lead acid battery) and MUST NOT BE GROUNDED. This is very important, because the system MUST BE OPEN. If you ground the AFEP generator circuit, you build a common closed system and free electrons can't be tapped from the atmosphere.



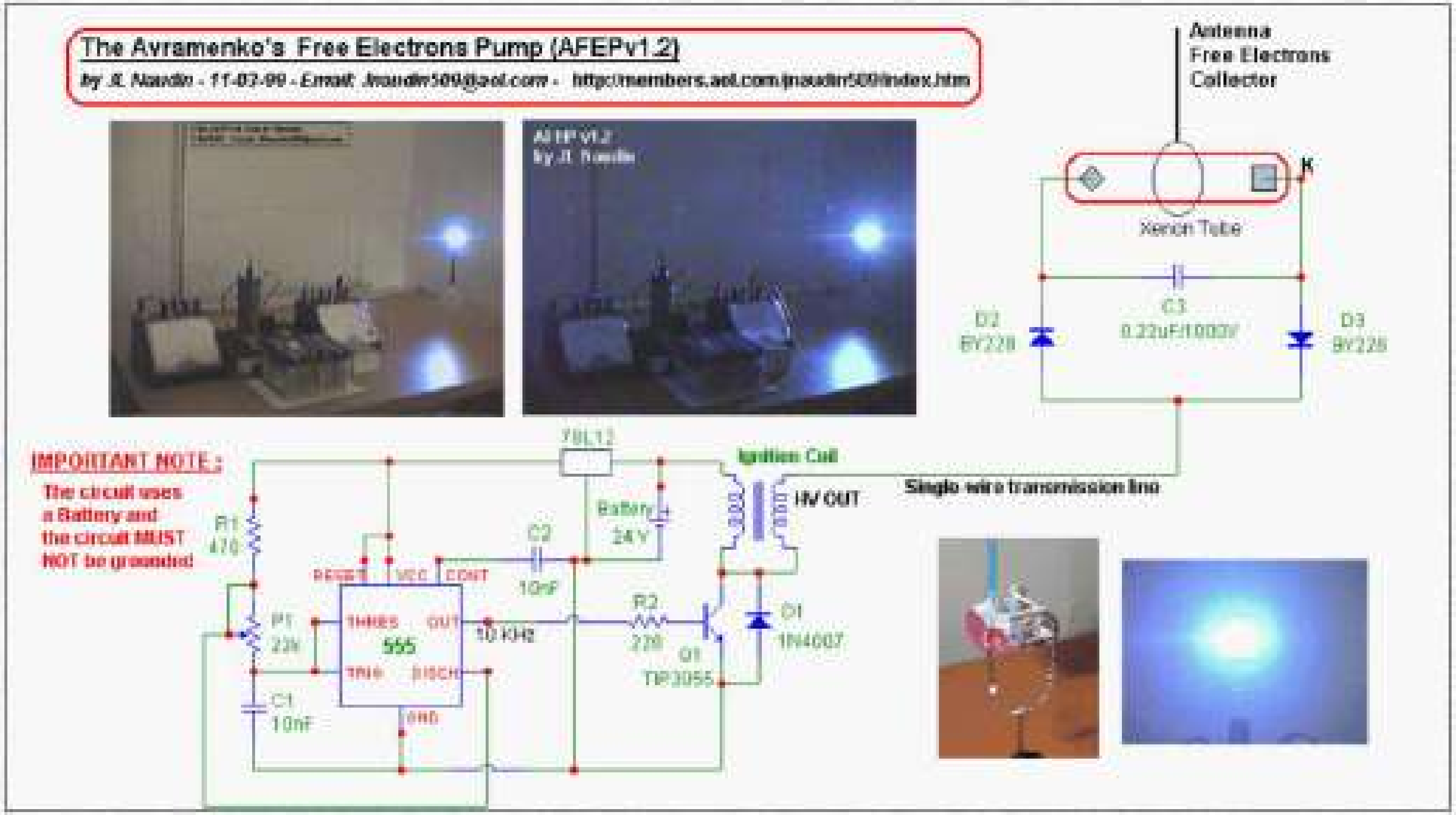
The main driver circuit uses a basic 555 square waves oscillator tuned at 10 KHz for the best output. The TIP 3055(Q1) is used as a common switcher for the car ignition coil. The most important part is the enhanced Avramenko's plug :


AFEP v1.0
by JL Naudin
11-01-99
Antenna
Collector
Flash
Xenon Tube
0.22uF
1000V
BY228
BY228
HV OUT
10 KHz


To Antenna
Avramenko's type Plug
425 mA Ammeter
12.2 Volt Voltmeter
Car Ignition Coil
AFEP Driver
10 KHz
12V, 1.3 AH
Power ON Switch
The AFEP v1.0 (Experimental setup)
by JL Naudin - 11-01-99 - Email: JNaudin509@aol.com

*The **AFEP experiment** is based on the russian patent application filed on May 10th, 1993 by Stanislav and Konstantin Avramenko (PCT/GB93/00960). This a staight-forward application of the single-wire electrical energy transmission based upon the principle of longitudinal electrostatic waves as described by Nikola Tesla in the 1890s.*

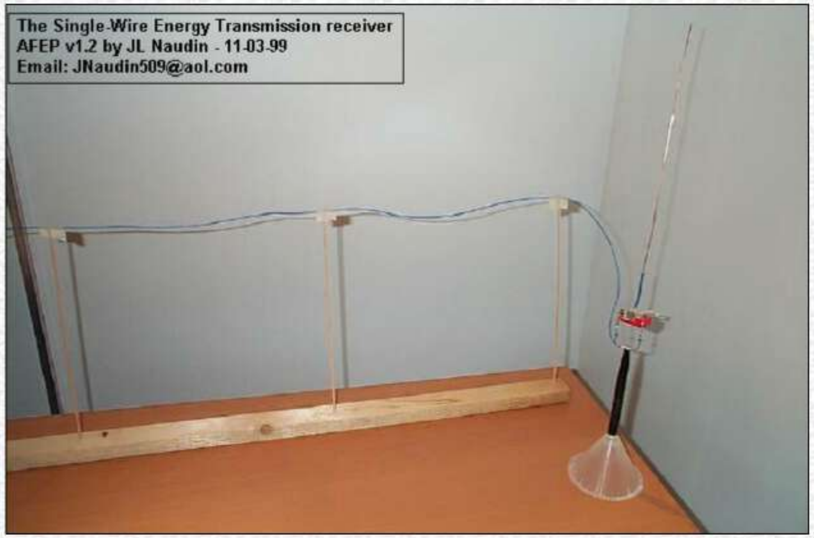
The AFEP v1.2 **is a improved version of the AFEP v1.0. I have added a small 78L12 DC regulator for the 555 square wave pulses generator circuit. The AFEP circuit is now powered with a 24V DC source (two lead acid 12V/4 AH batteries) and always ungrounded.**



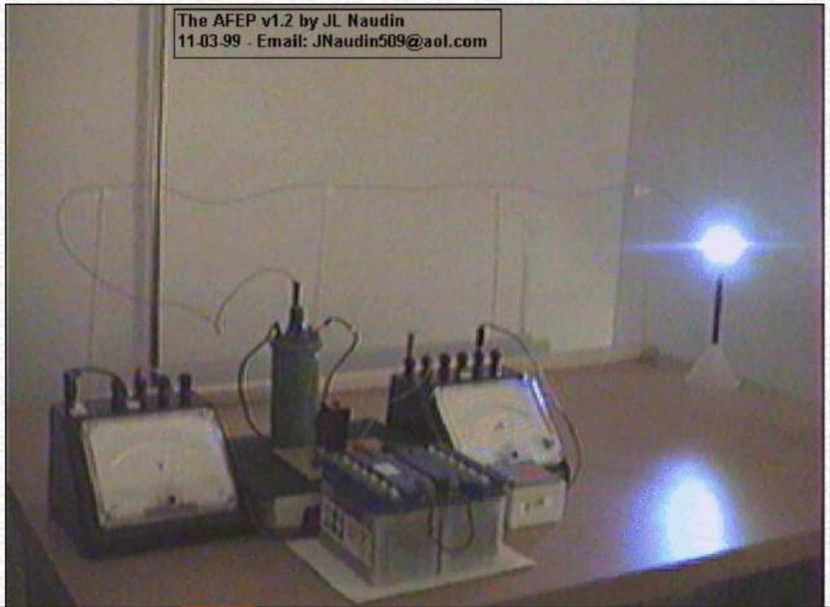
The First Single-Wire Energy Transmission test (11-03-99)

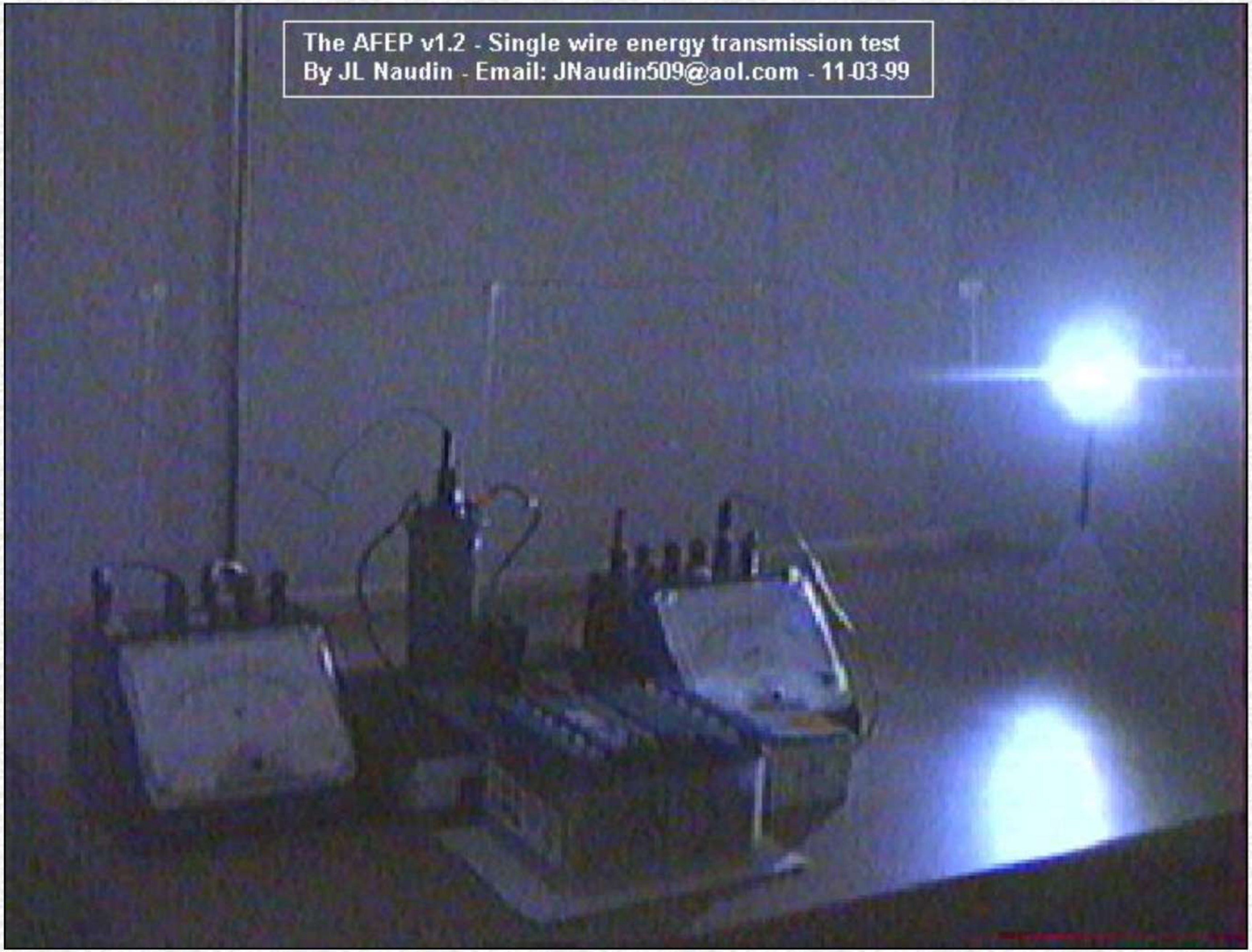
The purpose of this test is to check the inventor's claim about the energy transmission through a single wire with the Avramenko's plug.

the enhanced Avramenko's plug previously used with the AFEP v1.0 has been connected at the end (see below).



Test Results : When the AFEP generator is switched on, the xenon tube flash immediately with the same strenght and period than without the line. This confirms the Avramenko's claim.

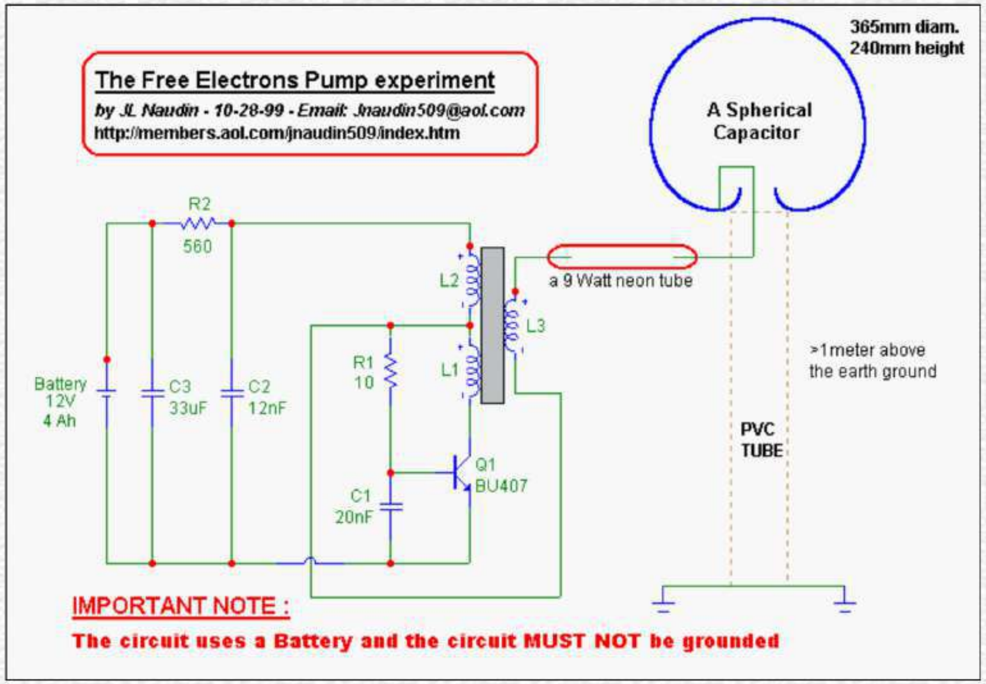




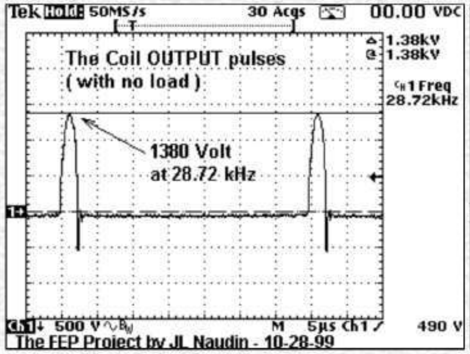
**A bright and strong flash light between the enhanced Avramenko's plug in the darkness of the JLN Labs.
Energy is transmitted through the single-wire and free electrons sucked from the air are used for triggering the flash...**

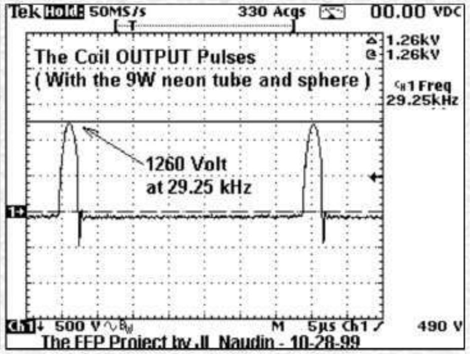
The FEP v1.0 is an enhanced version which uses a spherical capacitor coupled with the earth atmosphere. As Nikola Tesla had used in the Power Wave experiment in Colorado springs in June 26, 1899 and also during his tests of the first models of the [Tesla Magnifier Amplifier tower], the FEP v1.0 uses the same principle for sucking free electrons from the atmosphere : " *To produce an electrical movement of the required magnitude it is desirable to charge the terminal as highly as possible, for while a great quantity of electricity may also be displaced by a large capacity charged to low pressure, there are disavantages met with in many cases when the former is made too large. The chief of theses are due to the fact that an increase of the capacity entails a lowering of the frequency impulses or discharges and diminution of energy of vibration....* " (Tesla US Patent number 1,119,736 : "Apparatus for transmitting electrical energy" (issued Dec. 1, 1914)).

The FEP v1.0 uses a spherical capacitor made with an aluminum hollow sphere (365 mm diam. and 240 mm height). A 9 Watt neon tube (OSRAM 9W/Dulux S 41/82) is connected between the FEP generator and the aluminum sphere.

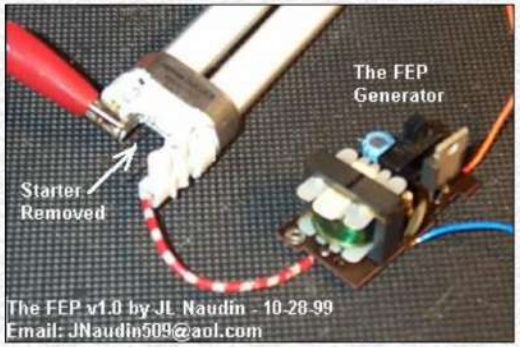


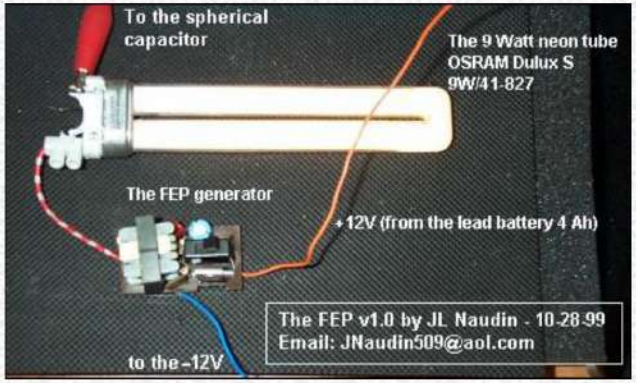
The FEP generator is a High Voltage Pulses generator which produces 1380 V pulses at about 29 kHz (see below). The FEP transformer (L1,L2,L3) is a high frequency transformer (with ferrite core) which can be found in common portable neon lights (used for camping). But you can also use L1 (7 turns of 4/10mm), L2 (6 turns of 5/10), L3 (750 turns of 1/10) wound on a ferrite core 10mm diam. If you find a ready made ferrite HF transformer, this will be better.





The 9W neon tube is a common low consumption light tube, but I have removed its original starter circuit.



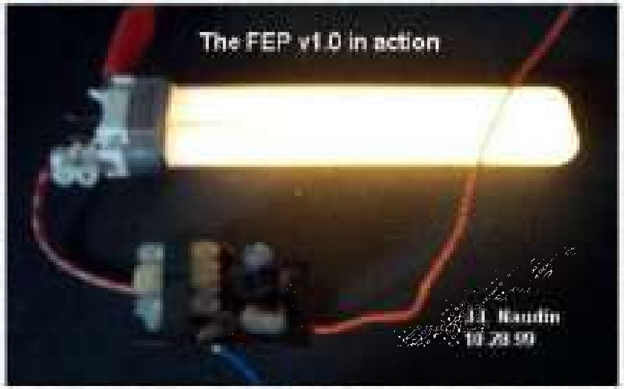


The FEP Generator <u>MUST BE powered by a battery source</u> (I have used a 12V 4 Ah lead acid battery) and <u>MUST NOT BE GROUNDED</u>. This is very important, because the system MUST BE OPEN. If you ground the FEP generator circuit, you build a common closed system and free electrons can't be tapped.

I have used an analog voltmeter and an analog ammeter, this is strongly recommended for avoiding some parasitic effects due to the electromagnetic waves induction (EMI) in some digital equipments which can generate some "false/true" measurements....

So, when the power is switched on <u>WITHOUT the neon tube</u> (with the FEP output left opened), the power input required for the functionning of the FEP circuit is **5.17 Watt** (11.5 Volt and 450 mA DC input)(see below).

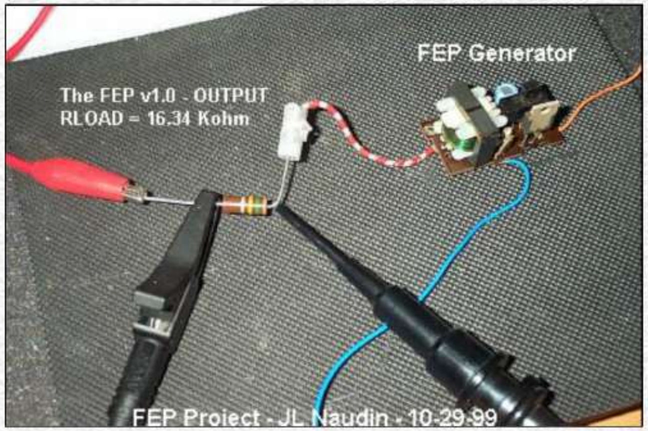
When the 9W neon tube is connected with its spherical capacitor, the power input DROPS to **4.66 Watt** **(11.5 Volt and 405 mA DC input) while the neon tube throws out about 30% of its max light...(see below)**



Note : If you don't have an aluminum spherical capacitor, you may also use a big aluminum sheet as a free electrons collector.

Now that you have a very simple electronic circuit that you can build and test by yourself, you will notice that this circuit works very well and shows that some free electrons can be tapped easily, from the atmosphere or from the ground with the FEP v1.0 device...

The 9 Watt neon tube has been replaced by a 15 Kohm-5 Watt (the exact value was 16340 ohm) carbon resistor (see below) :



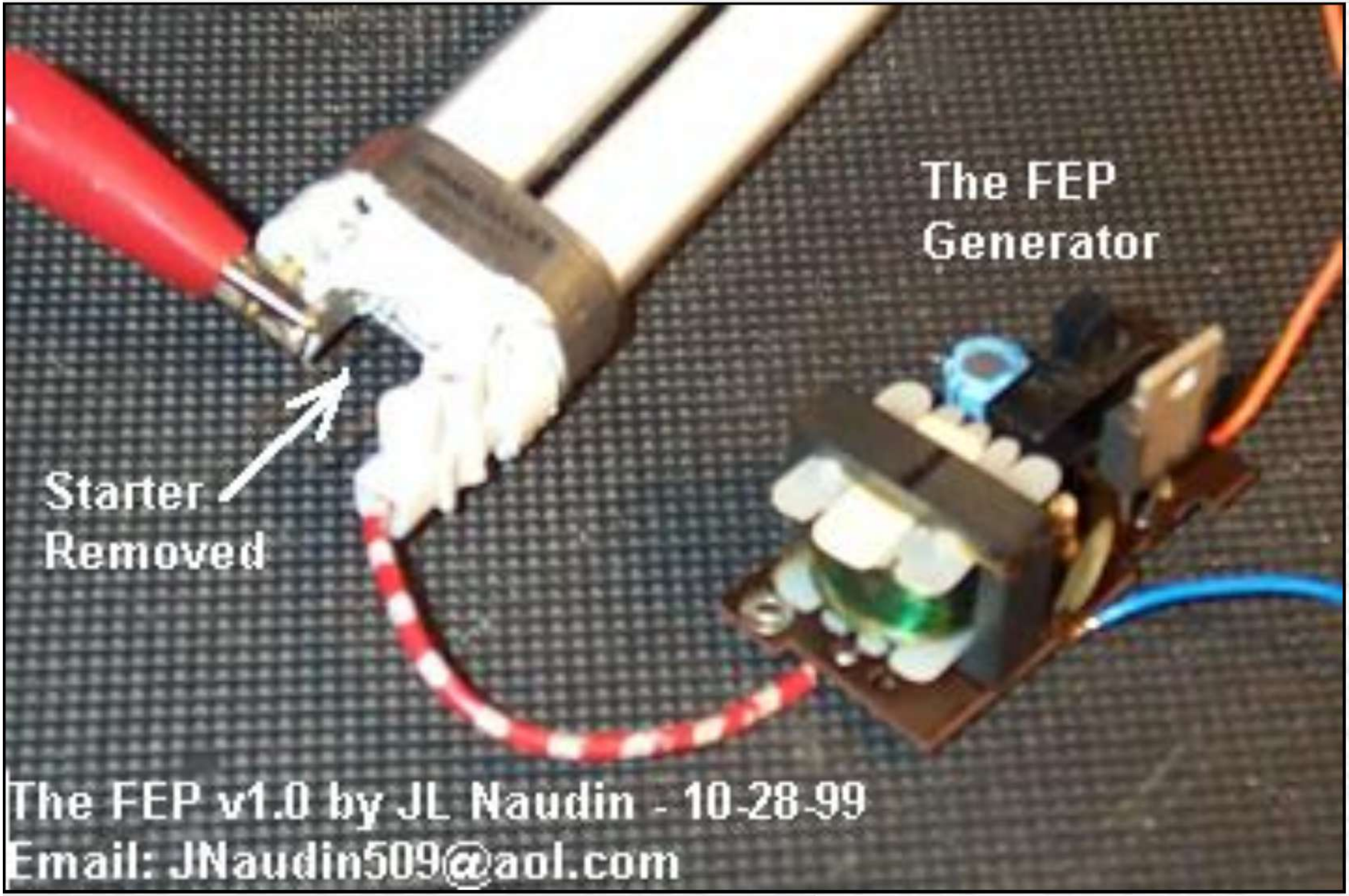
I have used a Textronix THS720P isolated and ungrounded channels oscilloscope for measuring the voltage accross the output resistor. The RMS and PEAK output voltages has been computerized automaticaly by the scope.

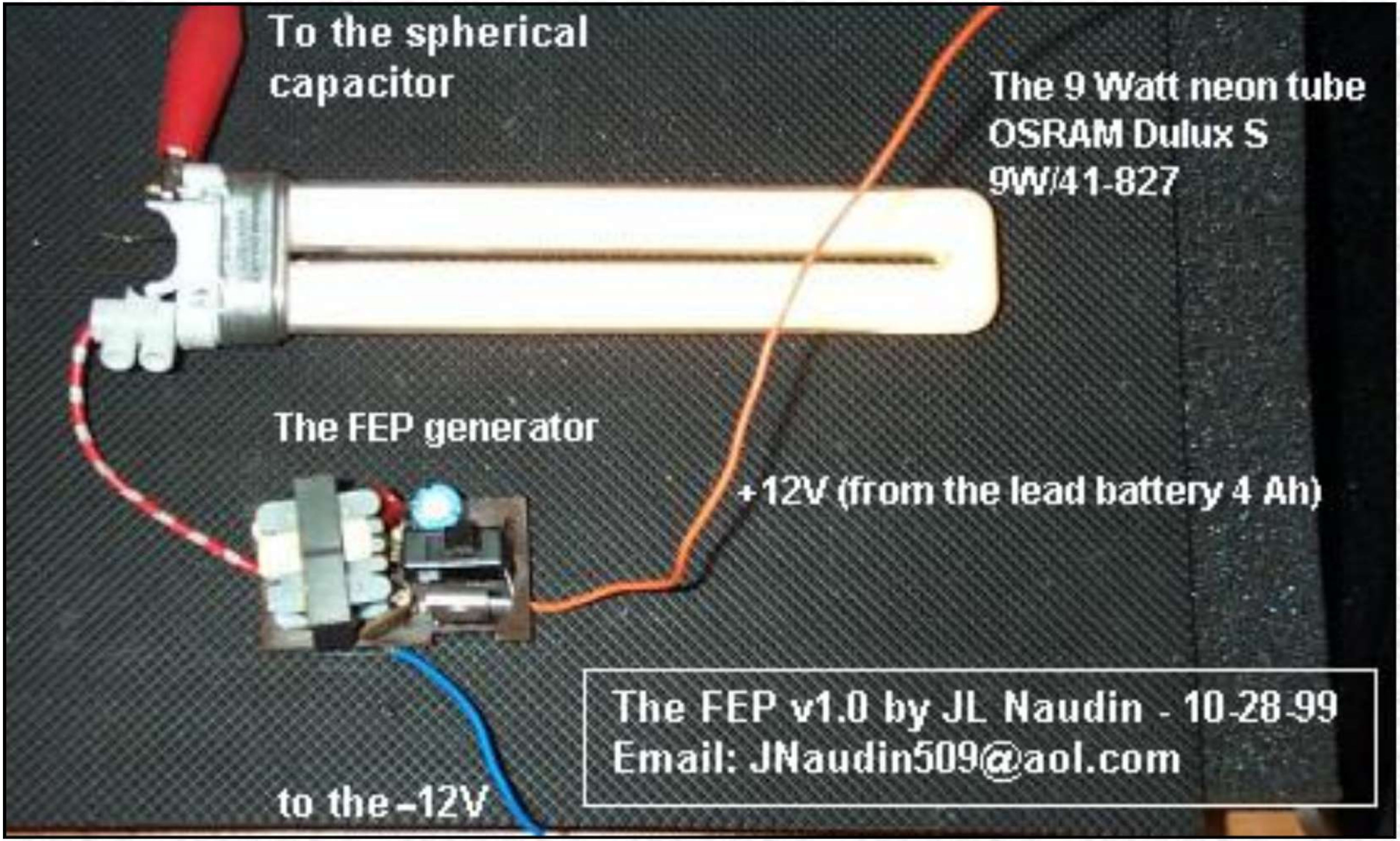
The FEP v1.0 (Input/Ouput)				by JL Naudin	10-29-99	Email: JNaudin509@aol.com			
DC INPUT					OUTPUT				
Vinp (V)	CurOut (A)	Pwr (W)	Del Pwr	Freq (kHz)	Rload (ohm)	Vout RMS (V)	Pwr RMS (W)	Vout Peak (V)	Pwr Peak (W)
11,3	0,34	3,842	-	30,75	Nload	1260,0	-	-	-
11,3	0,32	3,616	-0,226	31,19	16340	114,4	0,801	376	8,652

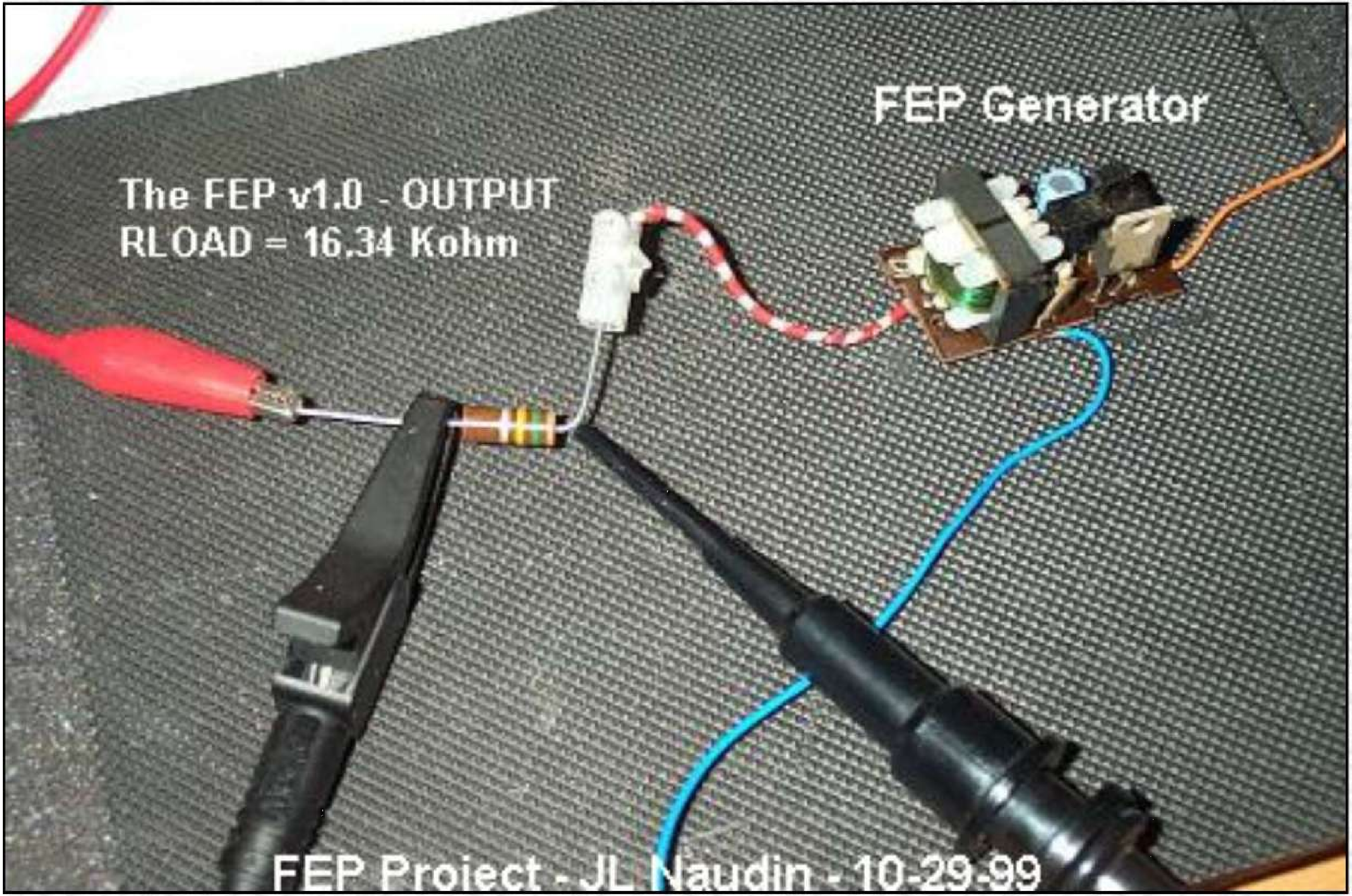
***JLN Comments*:**

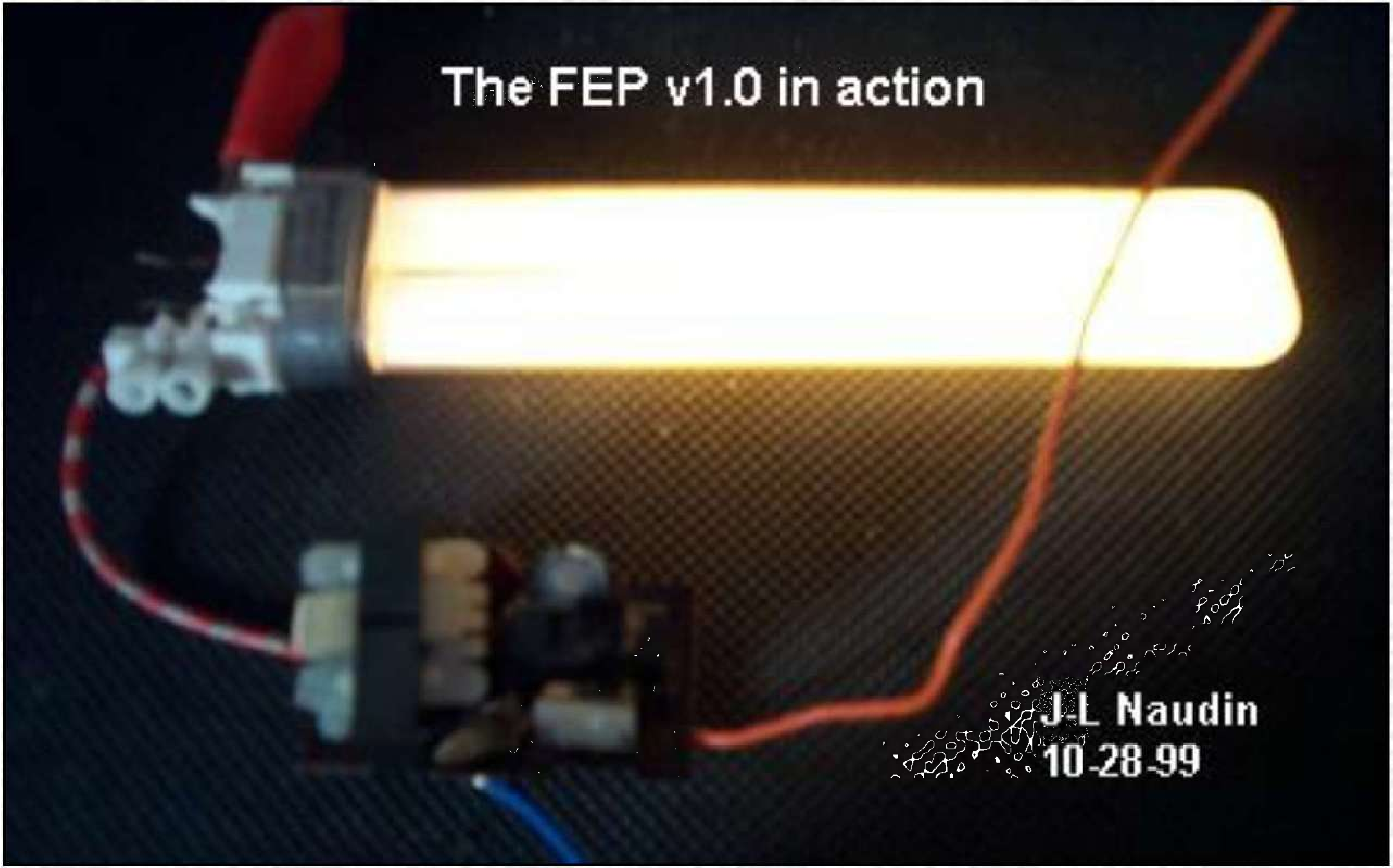
As you may notice in the diagram above, the measured output power accross the resistor was 801 mW RMS for 8.6 Watt Peak, the most interesting thing to observe is that THE INPUT POWER DROPS of 226 mW while 801 mW is generated at the output.

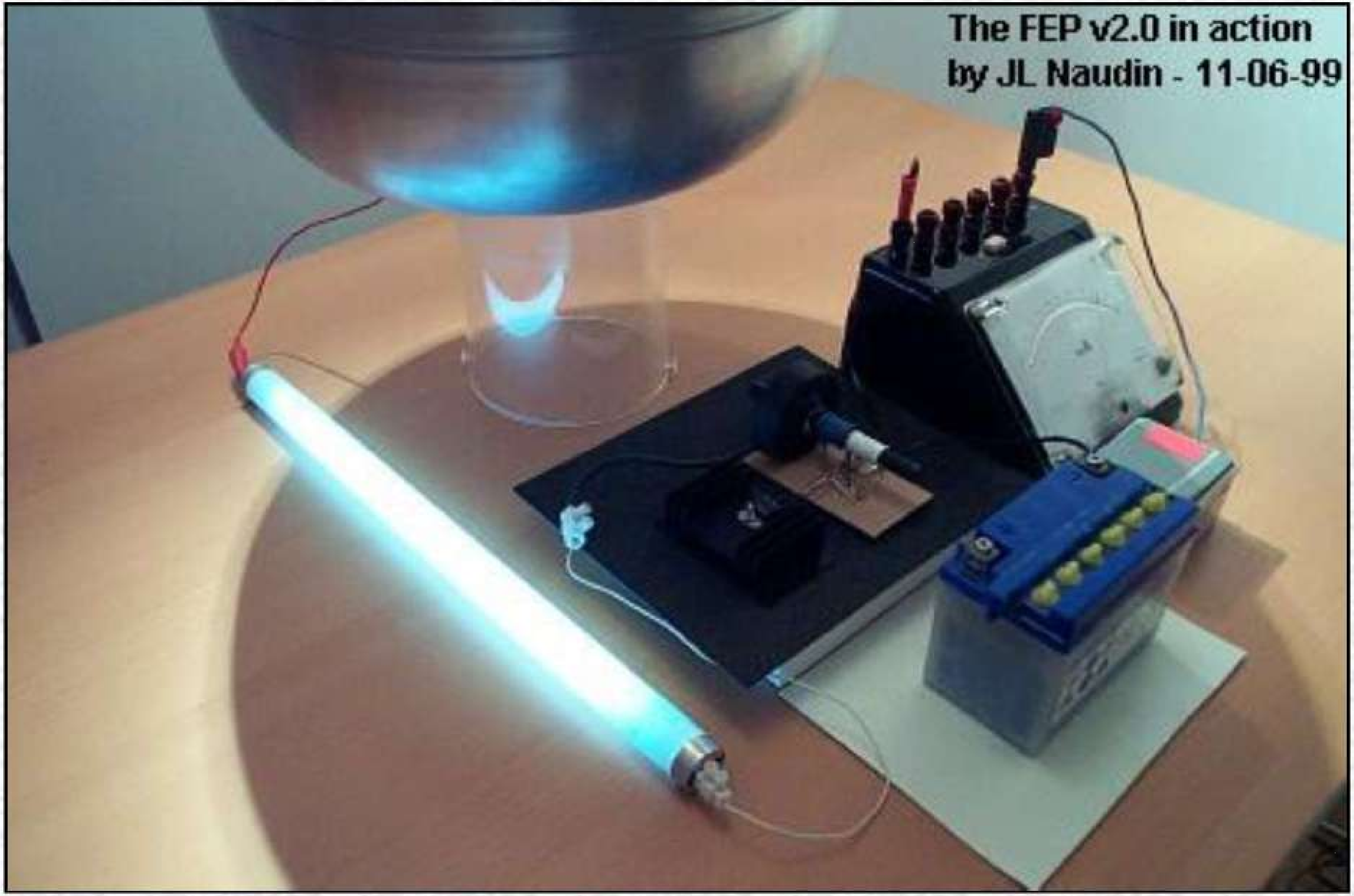
See also :


The FEP
Generator
Starter
Removed
The FEP v1.0 by JL Naudin - 10-28-99
Email: JNaudin509@aol.com


To the spherical capacitor
The 9 Watt neon tube OSRAM Dulux S 9W/41-827
The FEP generator
+12V (from the lead battery 4 Ah)
The FEP v1.0 by JL Naudin - 10-28-99
Email: JNaudin509@aol.com
to the -12V

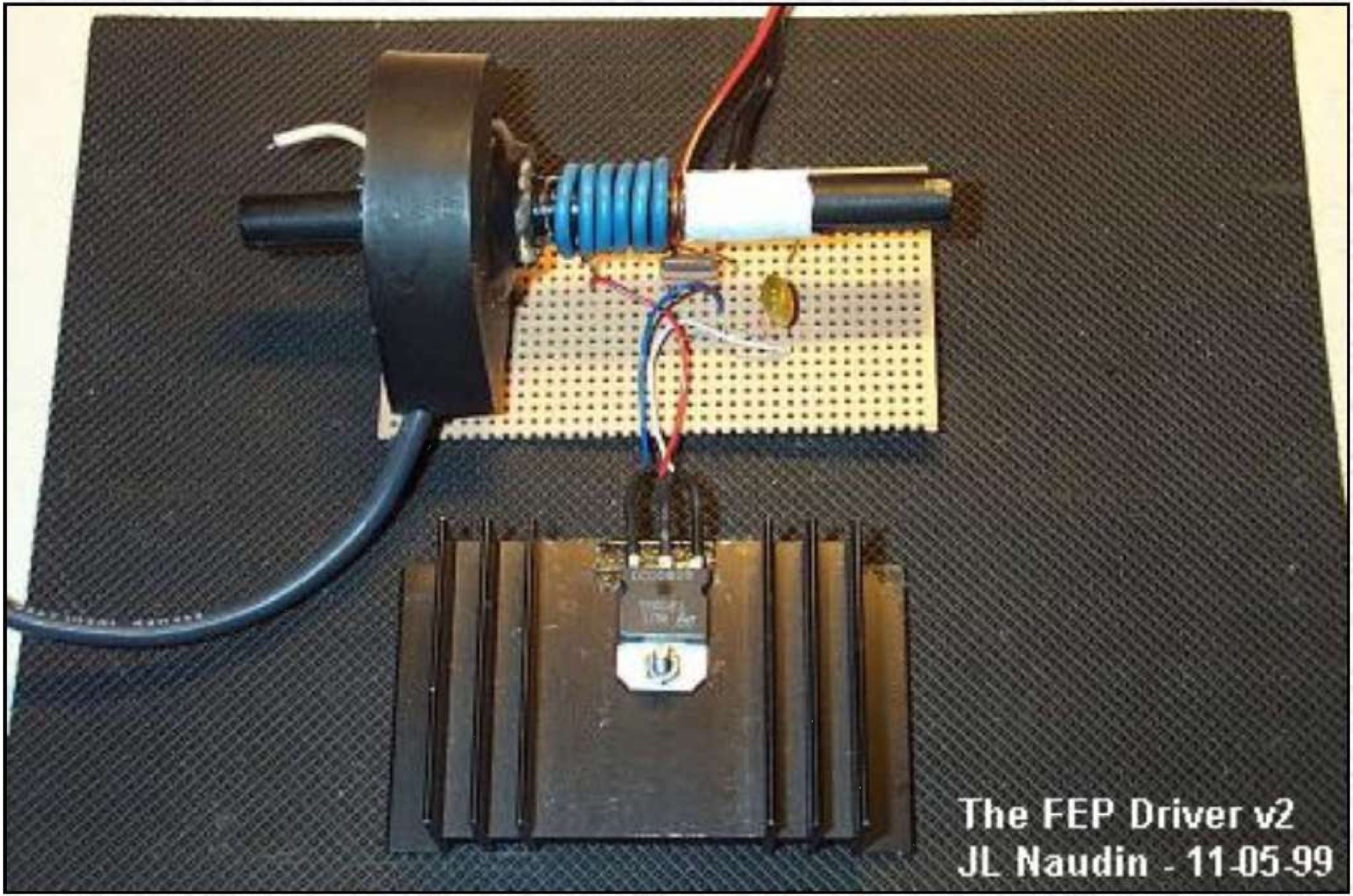

FEP Generator
The FEP v1.0 - OUTPUT
RLOAD = 16.34 Kohm
FEP Project - JL Naudin - 10-29-99


The FEP v1.0 in action
J-L Naudin
10-28-99

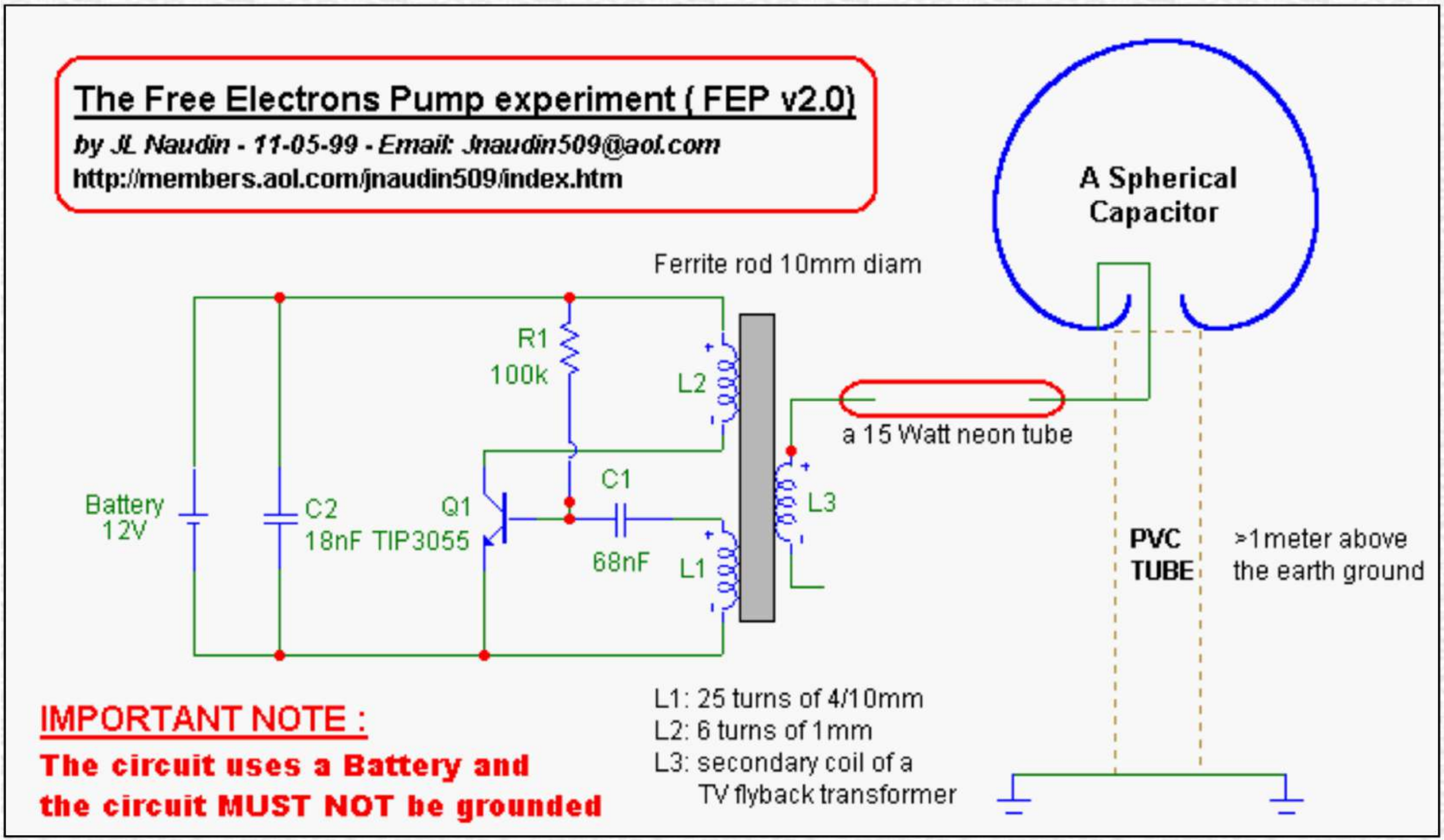


The Free Electrons Pump (FEP v2.0)

By Jean-Louis Naudin

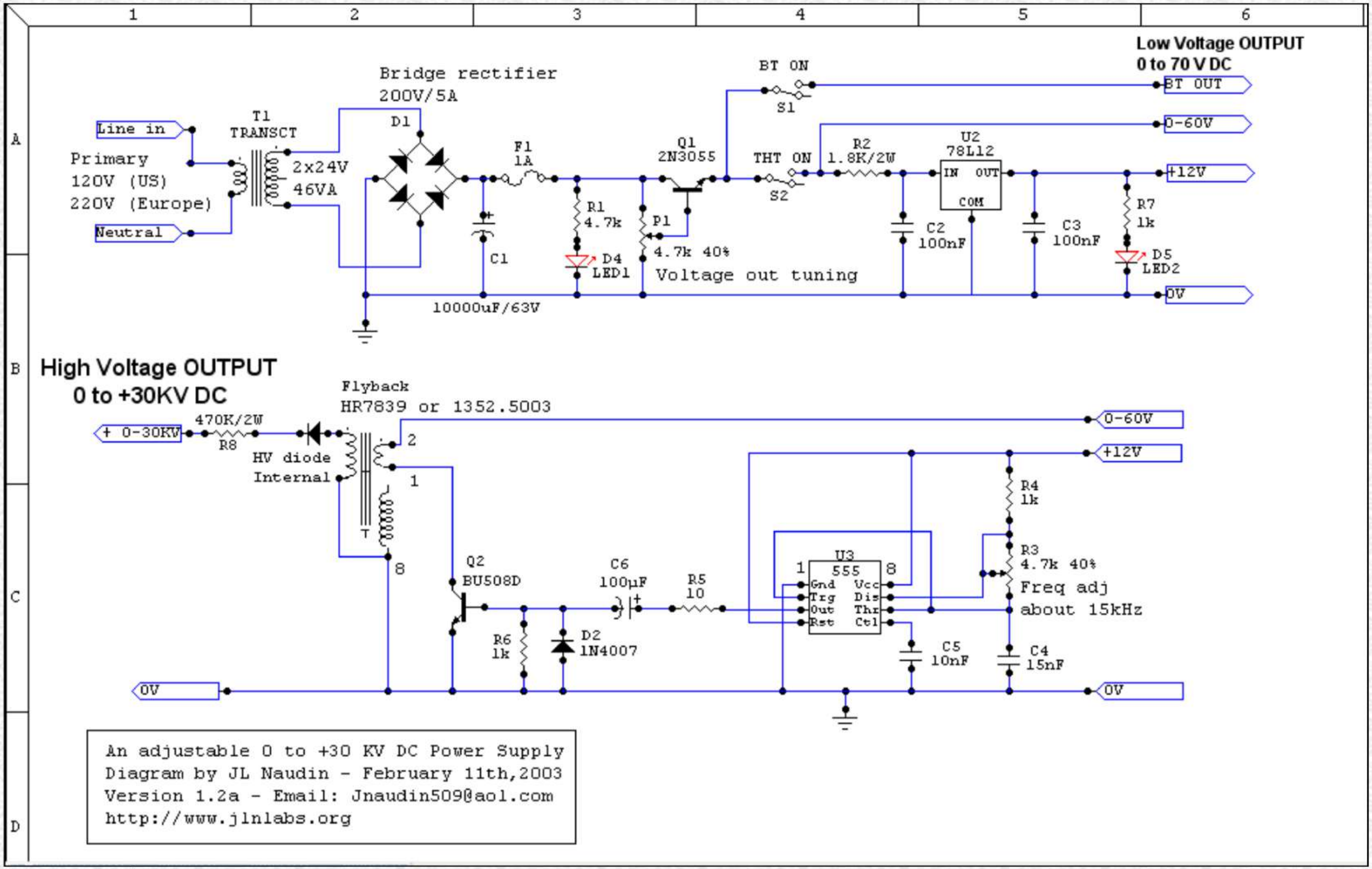


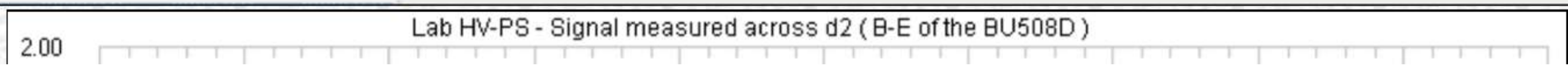
<u>*The New FEP generator v2.0*</u>

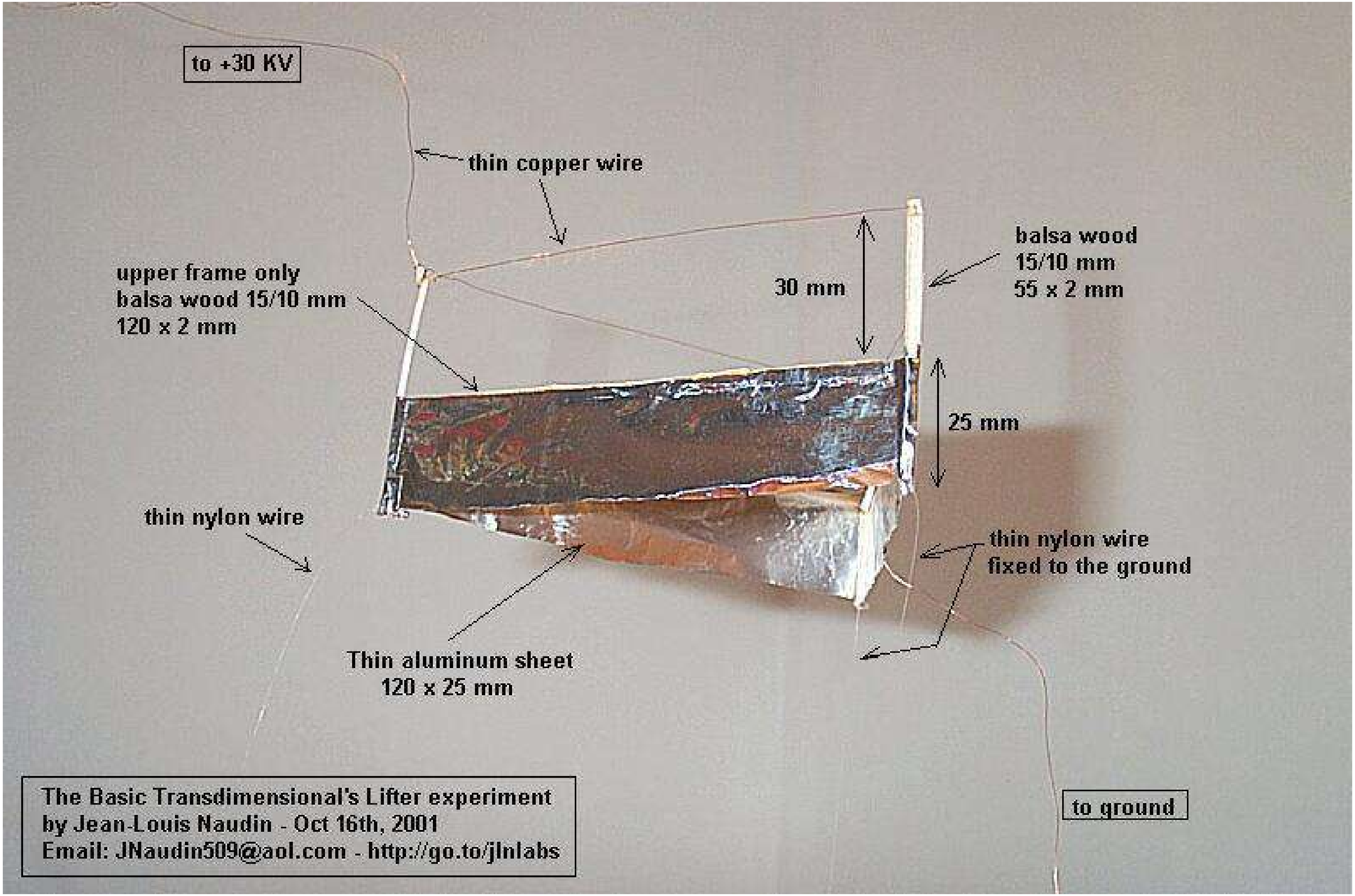

The Free Electrons Pump experiment (FEP v2.0)
by JL Naudin - 11-05-99 - Email: Jnaudin509@aol.com
http://members.aol.com/jnaudin509/index.htm
A Spherical Capacitor
Ferrite rod 10mm diam
R1
100k
L2
a 15 Watt neon tube
C1
Battery 12V
C2
18nF
Q1
TIP3055
68nF
L1
L3
PVC TUBE
>1meter above the earth ground
L1: 25 turns of 4/10mm
L2: 6 turns of 1mm
L3: secondary coil of a TV flyback transformer
IMPORTANT NOTE :
The circuit uses a Battery and the circuit MUST NOT be grounded

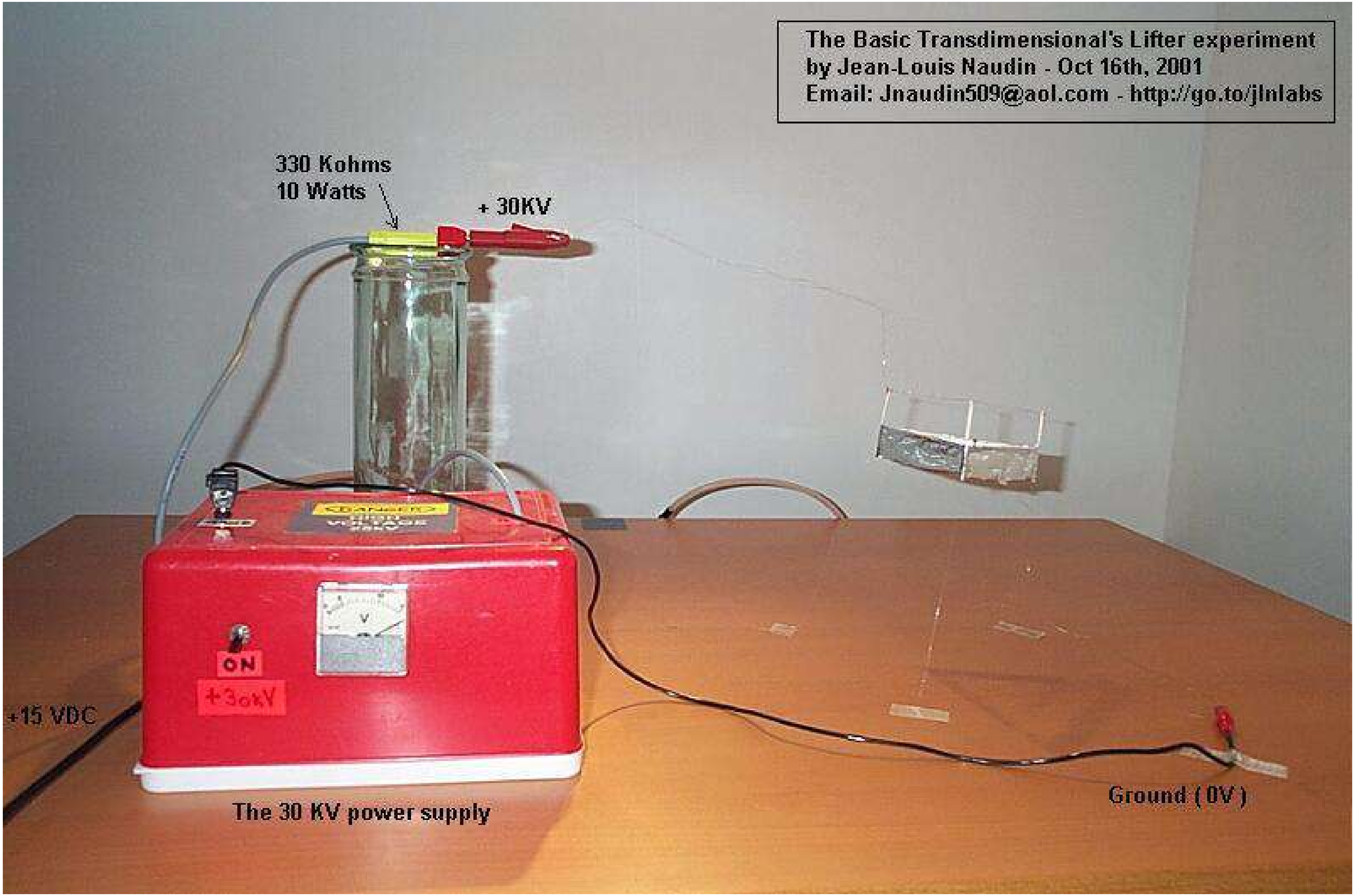
You will find in this document a very useful High Voltage Power supply (Lab HV-PS) diagram for your personal laboratory experiments. This is a dual outpout power supply :
- the first output is a Low Voltage output fully tunable between 0 to 70 V DC,
- the second output is a High Voltage output fully tunable between 0 to 30 KV DC

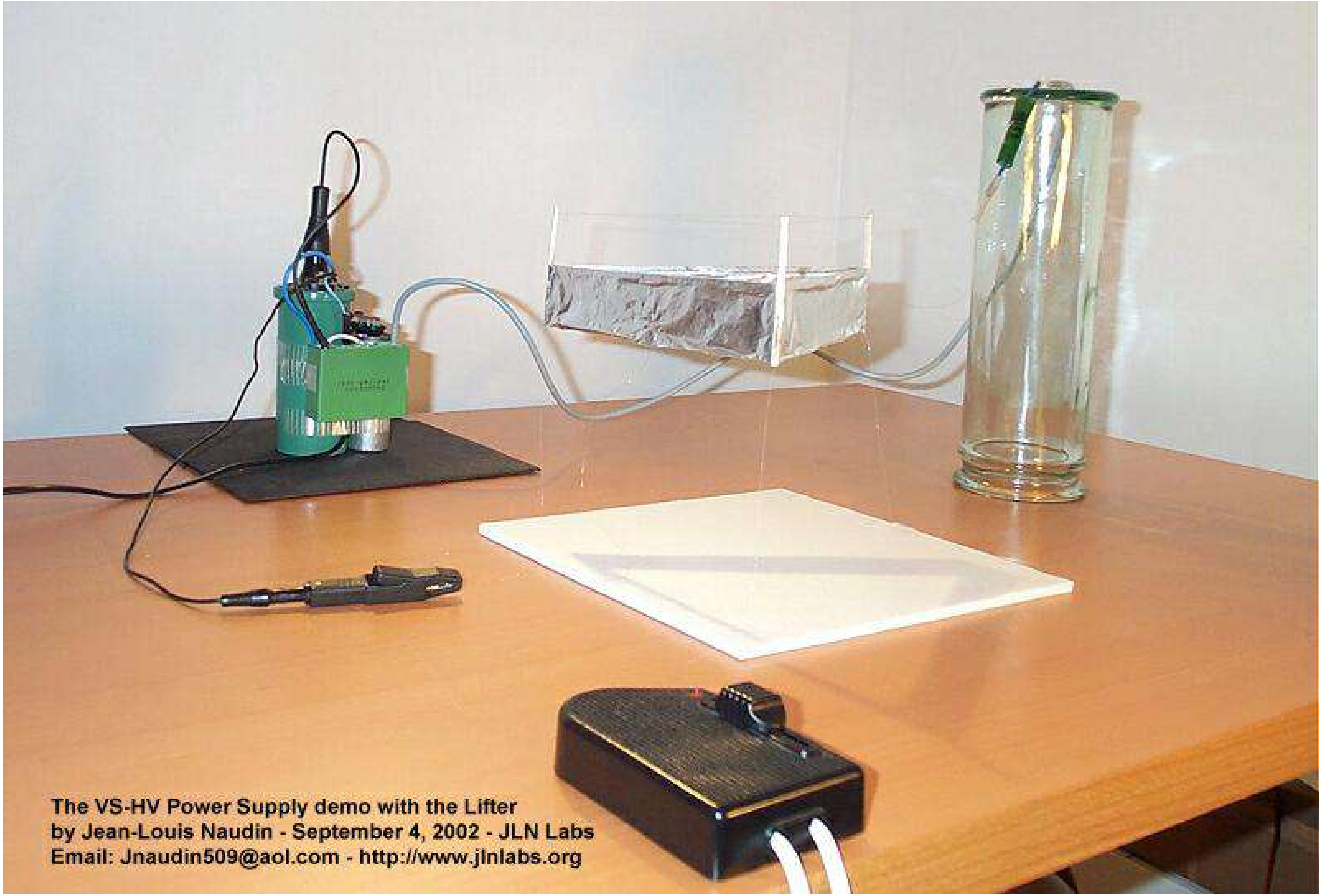
This Lab HV-PS is able to lift off a Lifter v2.0 without problem at a voltage about 21 KV. This allows you to conduct some interesting experiments about the Lifter hovering by tuning the HV output level.


1
2
3
4
5
6
A
B
C
D
Low Voltage OUTPUT
0 to 70 V DC
Bridge rectifier
200V/5A
BT ON
S1
BT OUT
0-60V
+12V
0V
Line in
Neutral
Primary
120V (US)
220V (Europe)
T1
TRANSCT
2x24V
46VA
D1
F1
1A
C1
10000uF/63V
R1
4.7k
D4
LED1
P1
4.7k 40%
Voltage out tuning
Q1
2N3055
THT ON
S2
R2
1.8K/2W
U2
78L12
IN
OUT
COM
C2
100nF
C3
100nF
R7
1k
D5
LED2
High Voltage OUTPUT
0 to +30KV DC
Flyback
HR7839 or 1352.5003
+ 0-30KV
470K/2W
R8
HV diode
Internal
2
1
8
0-60V
+12V
0V
Q2
BU508D
R6
1k
D2
1N4007
C6
100µF
R5
10
U3
555
Gnd
Trg
Out
Rst
Vcc
Dis
Thr
Ctl
C5
10nF
R4
1k
R3
4.7k 40%
Freq adj
about 15kHz
C4
15nF
0V
An adjustable 0 to +30 KV DC Power Supply
Diagram by JL Naudin - February 11th,2003
Version 1.2a - Email: Jnaudin509@aol.com
http://www.jlnlabs.org

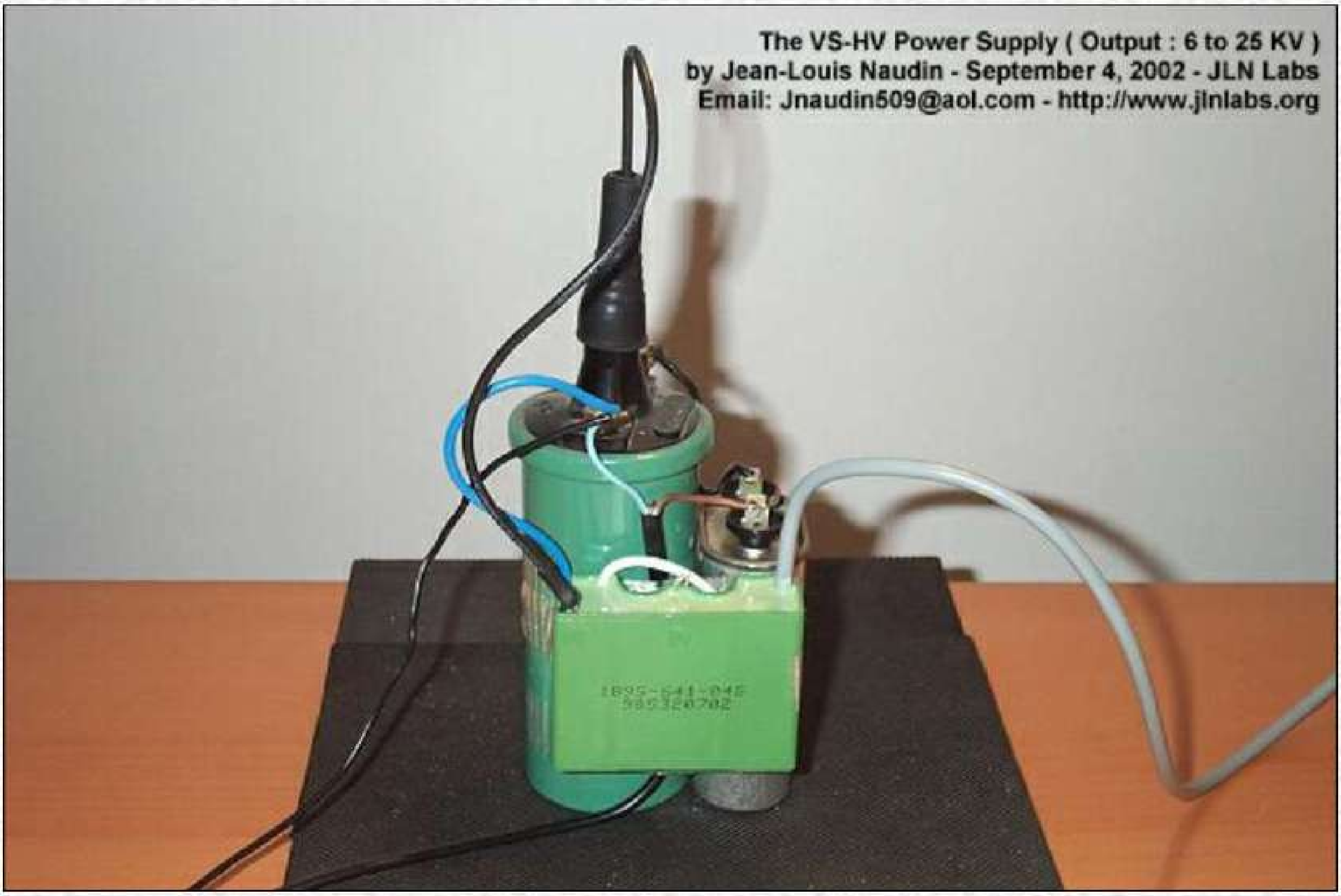

Lab HV-PS - Signal measured across d2 (B-E of the BU508D)
2.00

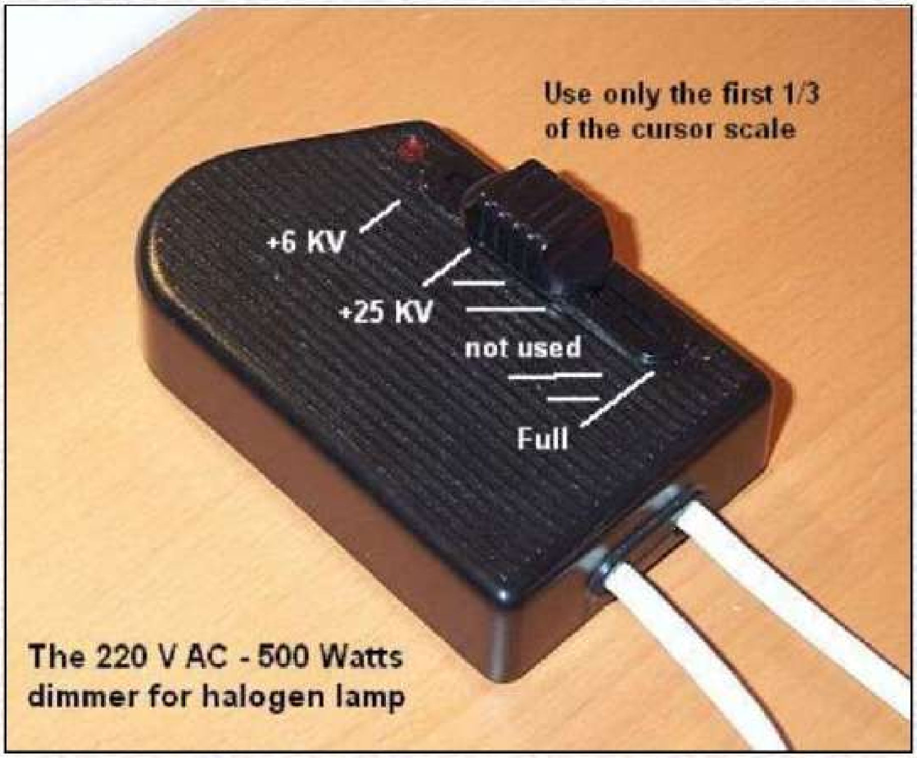

to +30 KV
thin copper wire
balsa wood
15/10 mm
55 x 2 mm
upper frame only
balsa wood 15/10 mm
120 x 2 mm
30 mm
25 mm
thin nylon wire
thin nylon wire
fixed to the ground
Thin aluminum sheet
120 x 25 mm
to ground
The Basic Transdimensional's Lifter experiment
by Jean-Louis Naudin - Oct 16th, 2001
Email: JNaudin509@aol.com - http://go.to/jlnlabs


The Basic Transdimensional's Lifter experiment
by Jean-Louis Naudin - Oct 16th, 2001
Email: Jnaudin509@aol.com - http://go.to/jlnlabs
330 Kohms
10 Watts
+ 30KV
ON
+30kV
+15 VDC
The 30 KV power supply
Ground (0V)



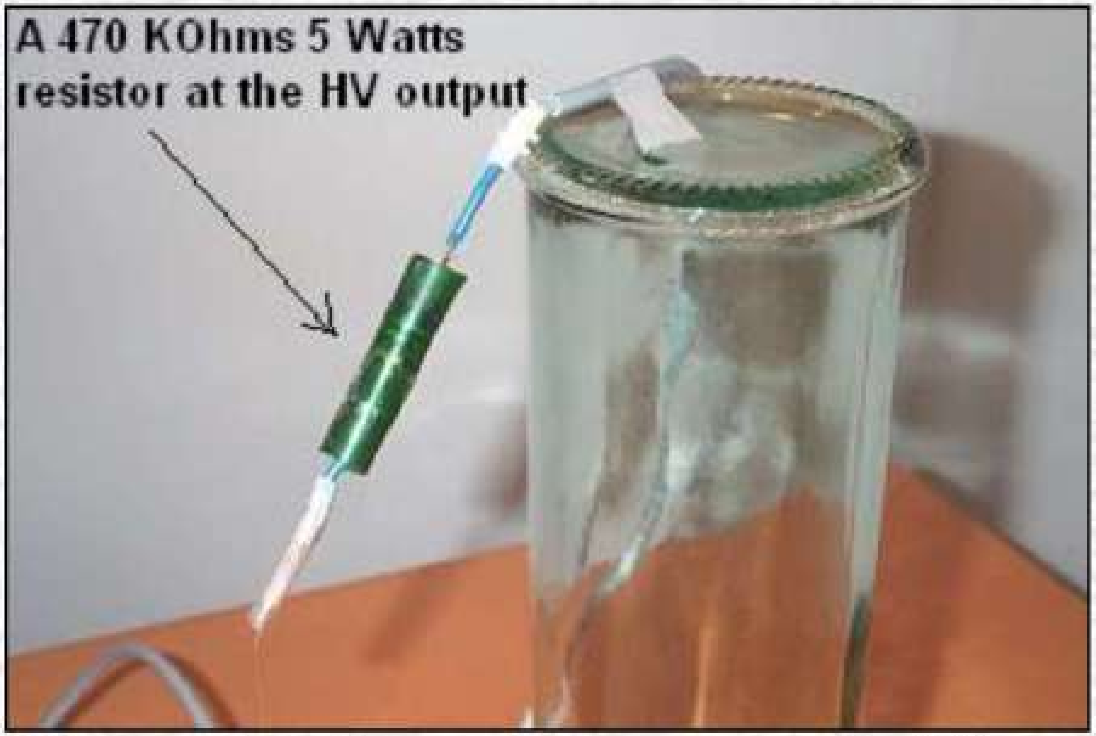
The VS-HV Power Supply demo with the Lifter
by Jean-Louis Naudin - September 4, 2002 - JLN Labs
Email: Jnaudin509@aol.com - http://www.jlnlabs.org





The HV output can be easily adjusted bewteen 6 to 25 KV with the halogen lamp dimmer.

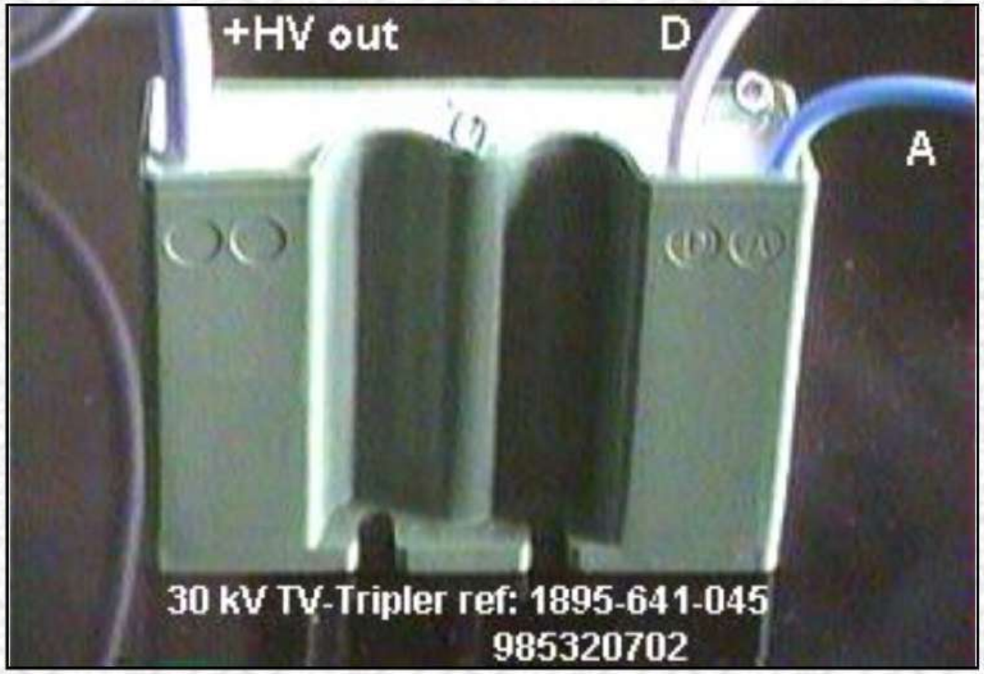
The HV output can be easily adjusted bewteen 6 to 25 KV with the halogen lamp dimmer.
Use only the first 1/3 of the cursor scale.

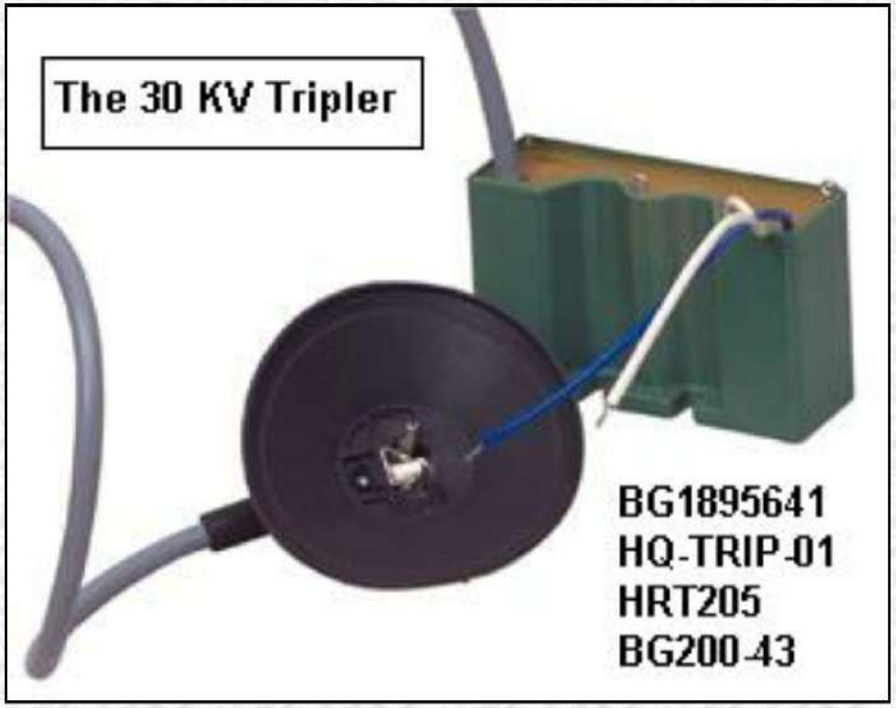


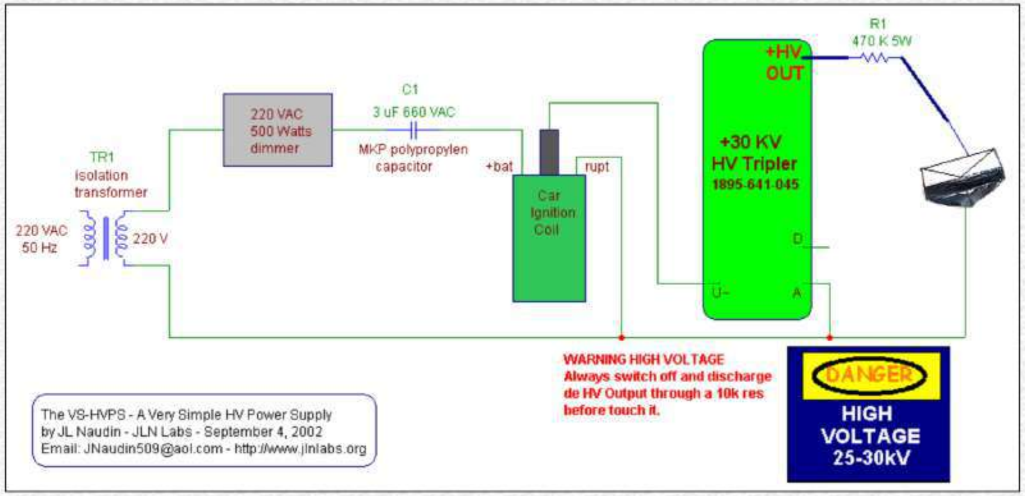
A 470 KOhms 5 Watts resistor is required to preset the HV output of the tripler

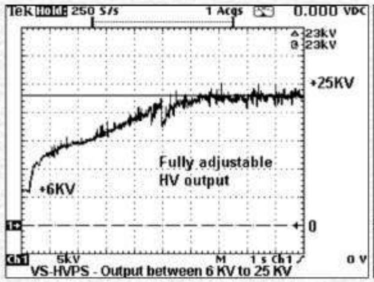
A 470 KOhms 5 Watts resistor is required to proect the HV output of the tripler

The car ignition coil used is a Ducellier (ref : 2790A) for a 12 V battery.

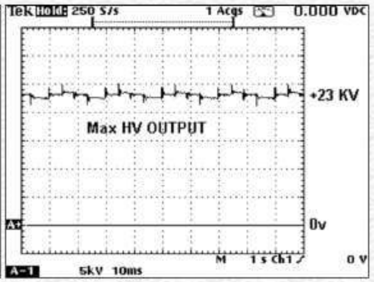






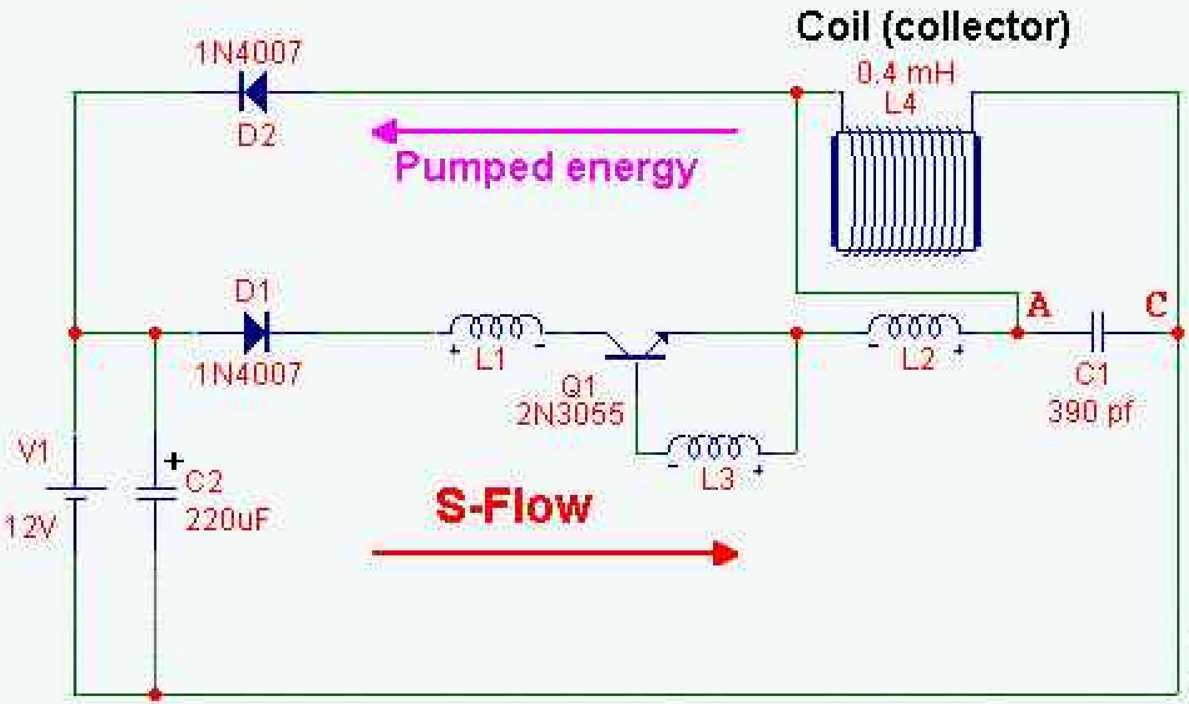


VS-HVPS - Output between 6 KV to 25 KV

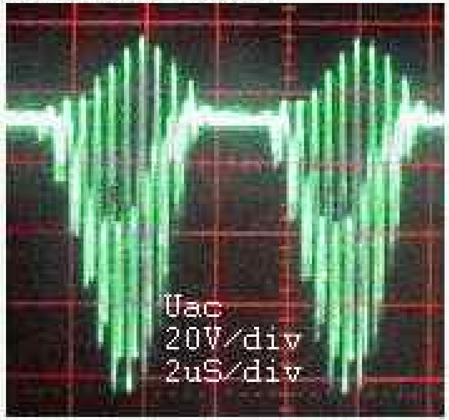


BE CAREFUL, USE EXTREME CAUTION !!!, this device use **High Voltage**, **ALWAYS switch off the input** and **discharge** the output to the ground through 10k/2W resistor **before** touch it. **These plans are not intended for the inexperienced**. User of this document should be very carefull and experienced in High-Voltage electronics to try anything out ! If you do it the risk of any results is just yours. I take no responsibility of anything that might happen.

ATTENTION !!!, Faites preuve d'une extrême prudence. Vous manipulez ici de la **Haute-Tension**, **TOUJOURS arrêter** puis **déconnecter** votre alimentation ou le moniteur et **décharger la sortie Haute Tension à travers une résistance de 10Kohms/2W avant toute manipulation.**. **Les plans et les conseils présentés ici, ne sont pas destinés à des débutants**. Vous devrez procéder avec soin et prudence et avoir l'habitude de manipuler de la Haute-Tension avant d'envisager une telle expérience ! Si vous décider de réaliser cette expérience, ceci est à votre propre risque et je décline toute responsabilité en ce qui concerne les éventuels dommages matériels ou physiques causés.



L4 : diam 49 mm,
length 60 mm,
100 turns
#22 magnet wire
Air core
R(L4)=3.2 ohms



The set of the bifilar coil L1,L2 is put into the 'collector' coil L4.

2N5301 : Vcb/Vce 40V, Veb 5V,ICmax 30A, Tj 200C,Ptot 200WC, ftmin 2M, hfe 15/60 (Ic 15A)
2N3055 : Vcb/Vce 100V/60V, Veb 7V,ICmax 15A, Tj 200C,Ptot 115WC, ftmin 200K, hfe 20/70 (Ic 4A)
Q1 : mounted with radiator

The T.E.P. (Time Energy Pump) - V3.0

By Jean-louis Naudin - Email : JNaudin509@aol.com

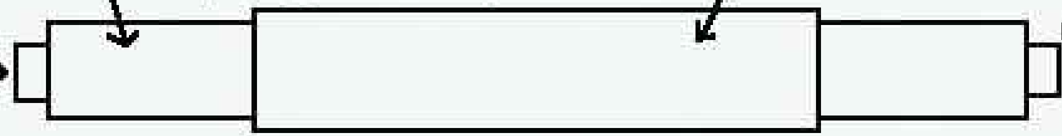
08/19/97

Notes : The polarity of the L1,L2 L3 is VERY IMPORTANT
Flux of L1 cancels the flux of L2

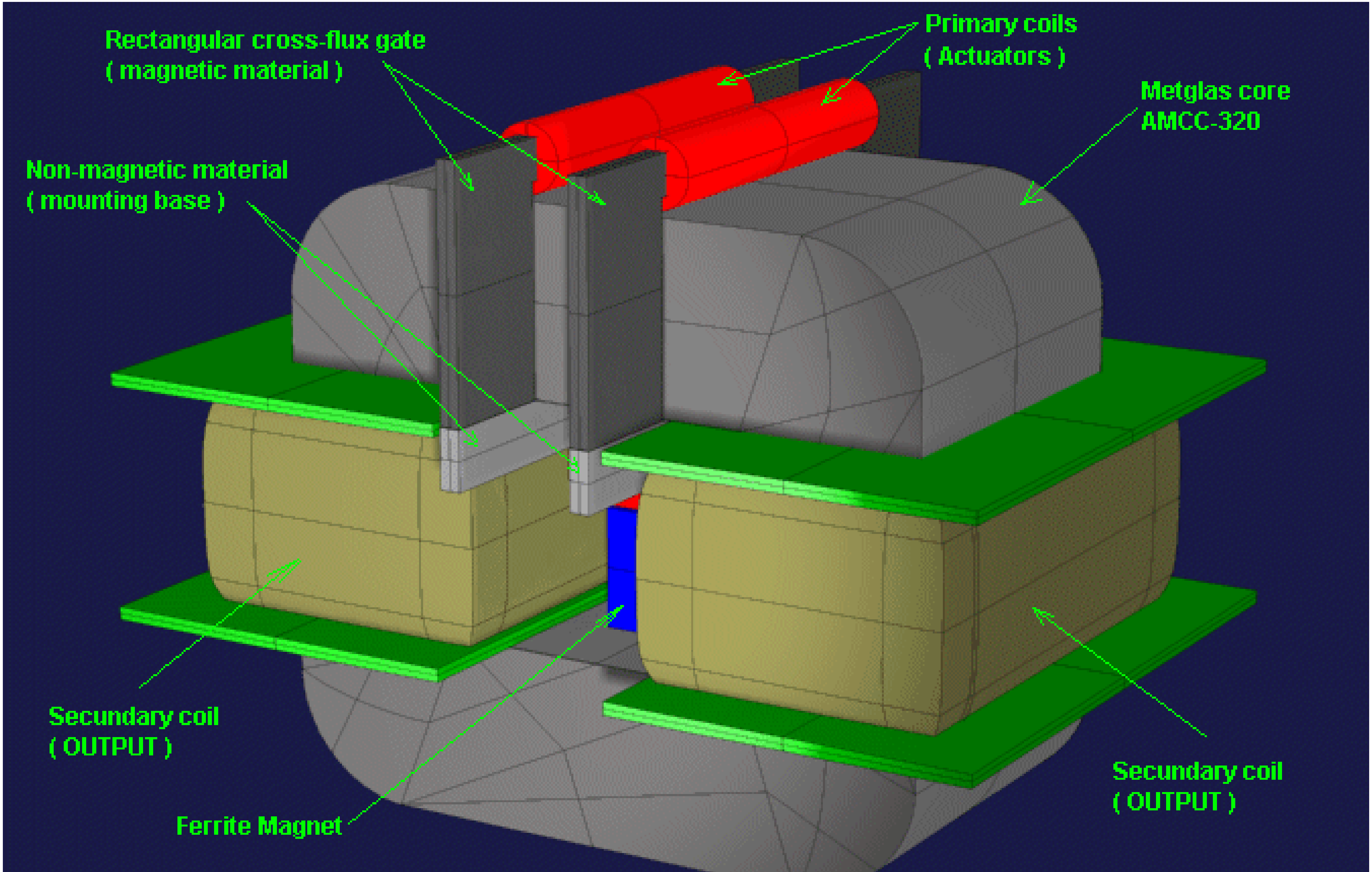
L1,L2 BIFILAR COILS (interweaved)
made with 11.5 m of 5/10 magnet wire #24
on a 20 mm cardboard tube (length 190 mm)

L3 : feedback coil
250 turns of 5/10 mm magnet wire #24

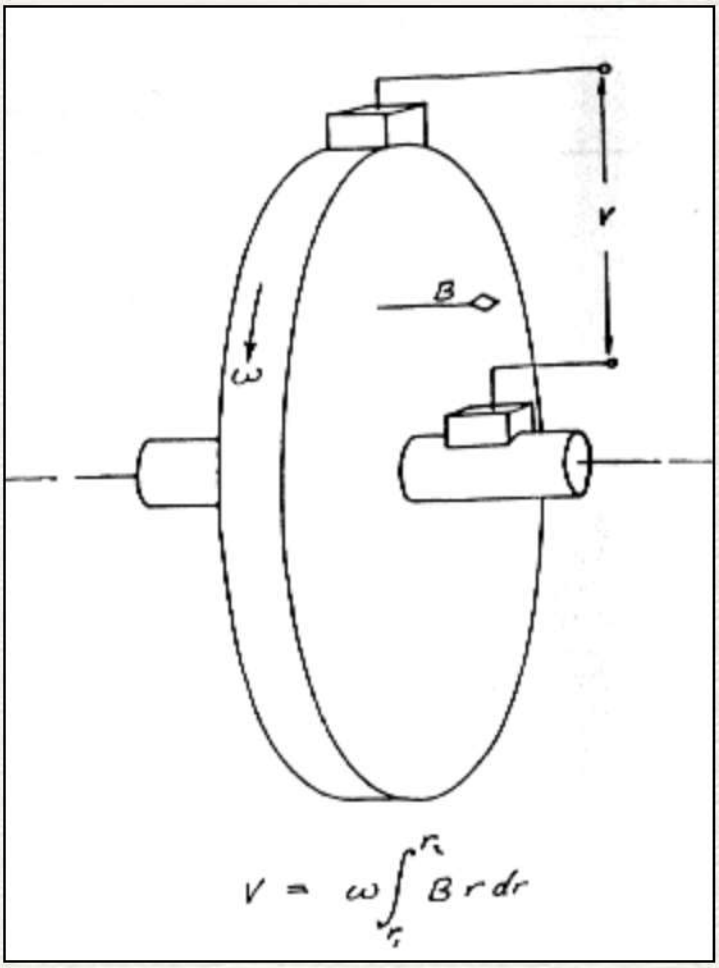
Ferrite rod
Left



Ferrite rod
Right

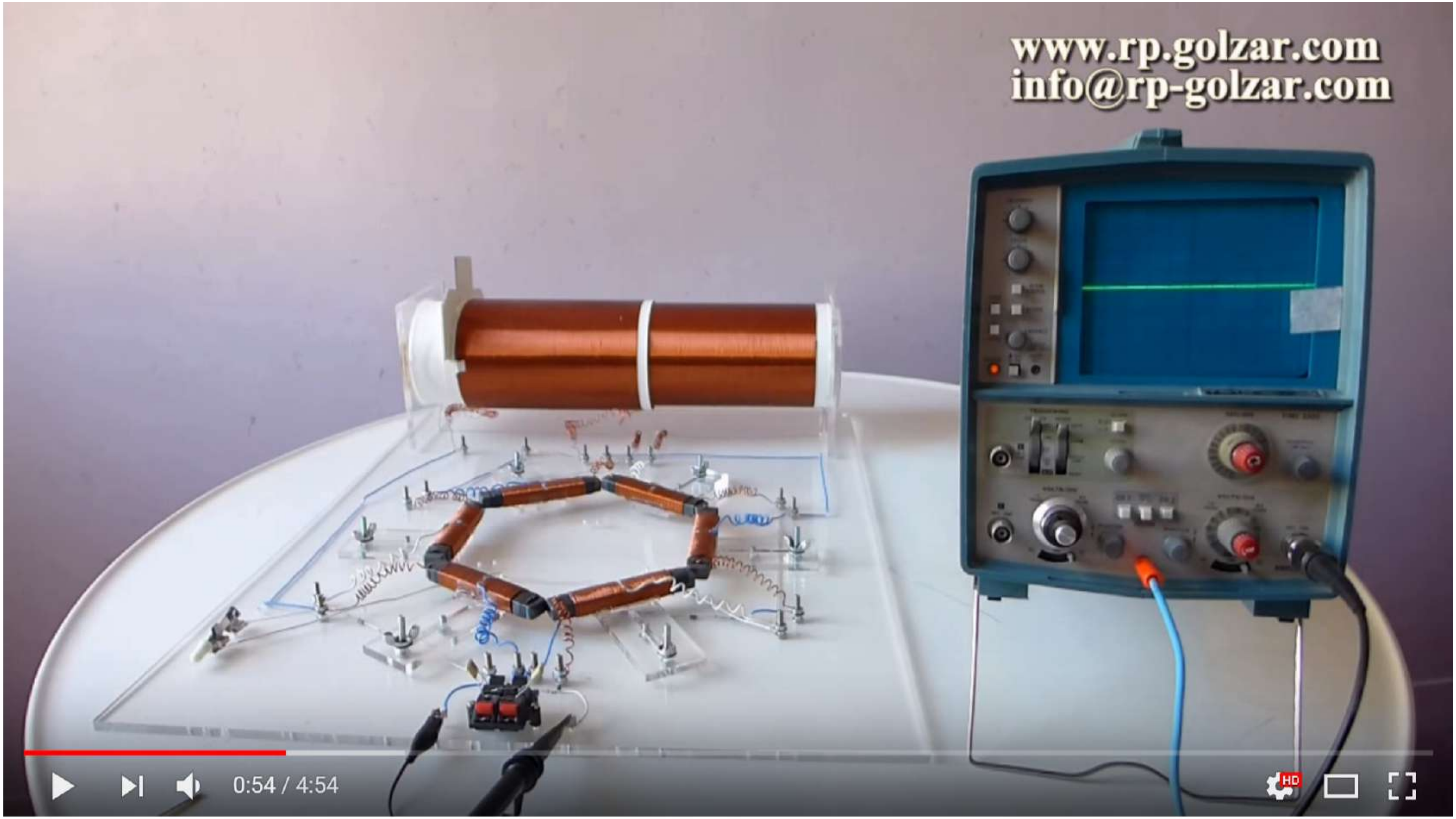


The MEG v4.0 with the Cross-Flux setup for the primary coils
by Jean-Louis Naudin - Dec 6th, 2000 - Email: JNaudin509@aol.com - http://go.to/jlnlabs/

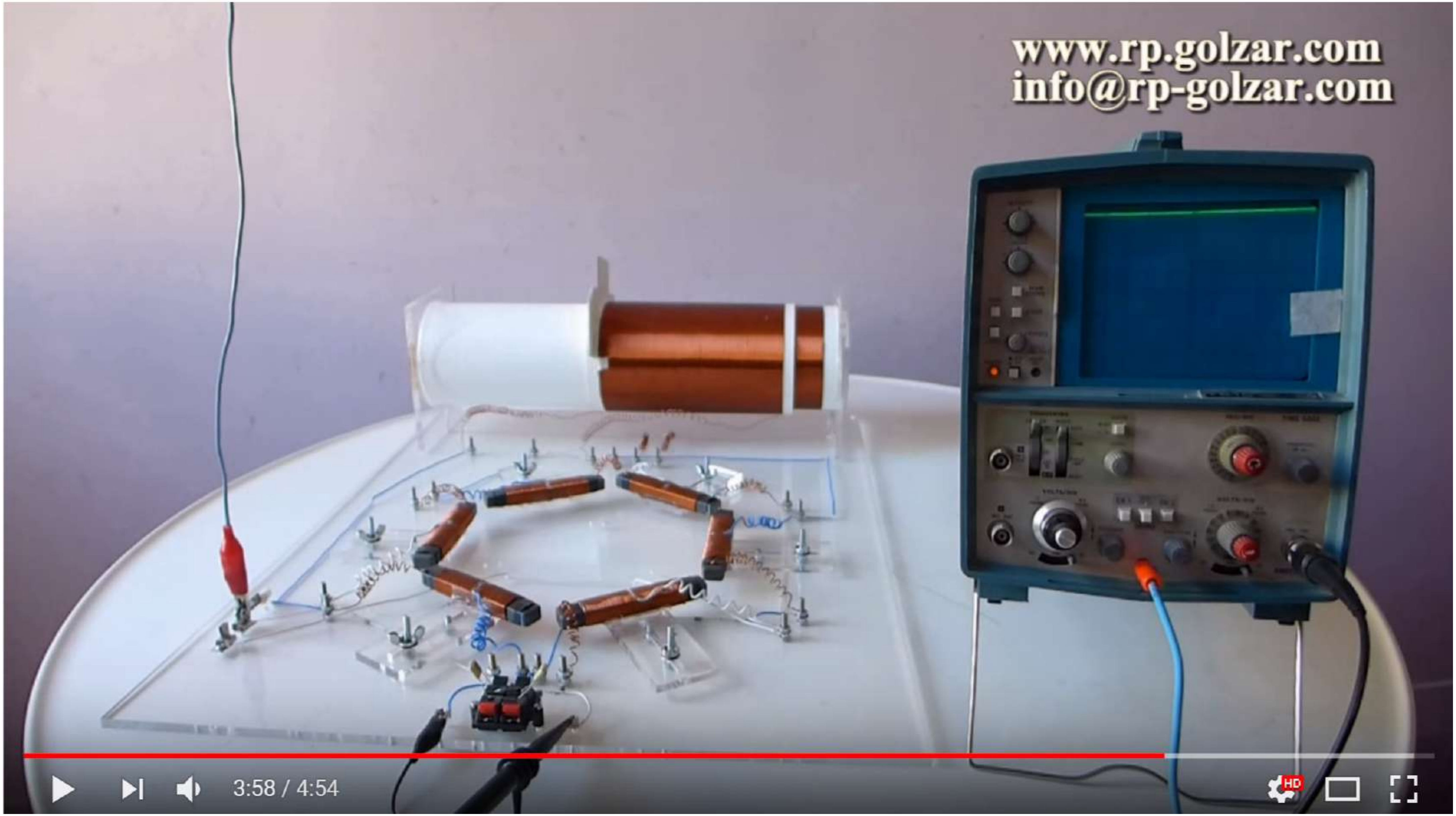

V
B
ω
$V = \omega \int_{r_1}^{r_2} B\,r\,dr$

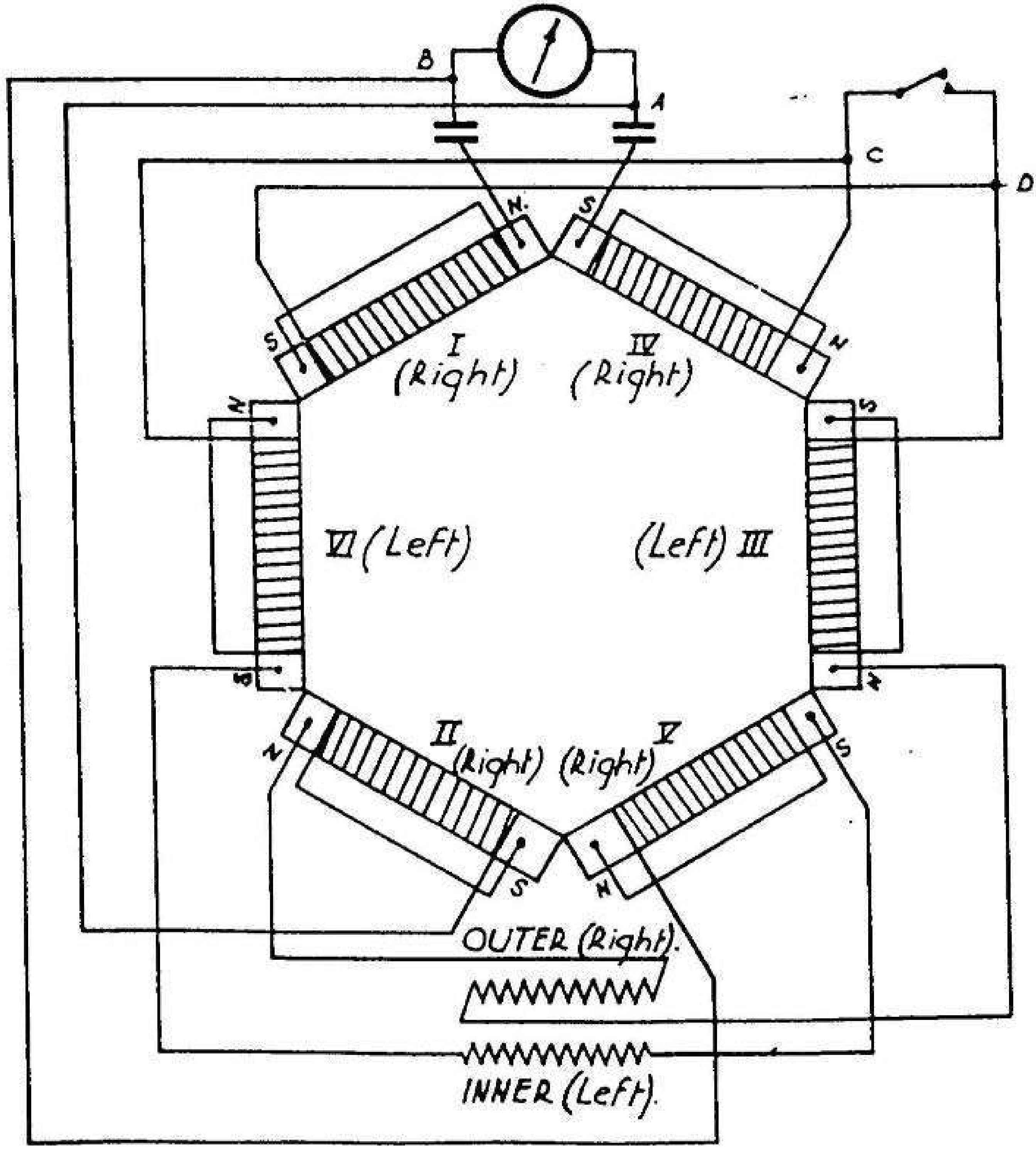

Soft Iron shell
N
Ferrite Magnet
outer diam : 70 mm
inner diam : 33 mm
8 mm thick
8 mm bolt
mA
meter
A simple Homopolar Generator - V1.0 - 13 April 97
By Jean-Louis Naudin - Email : JNaudin509@aol.com
At 2600 RPM - I = 1.5 mA, E = 0.5 V


HARDWARE

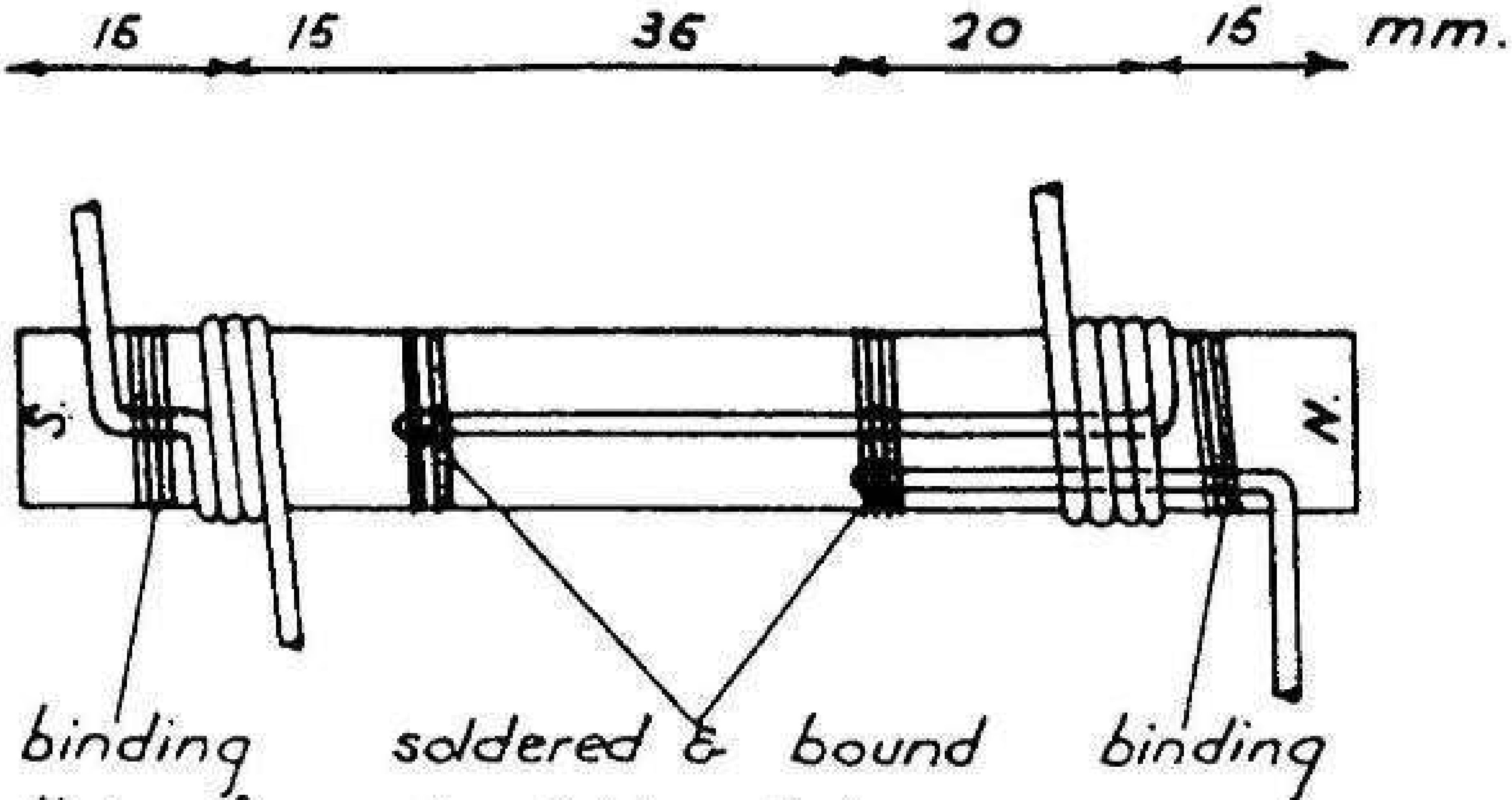
Free Energy Device 2015


www.rp.golzar.com
info@rp-golzar.com
3:58 / 4:54
HD



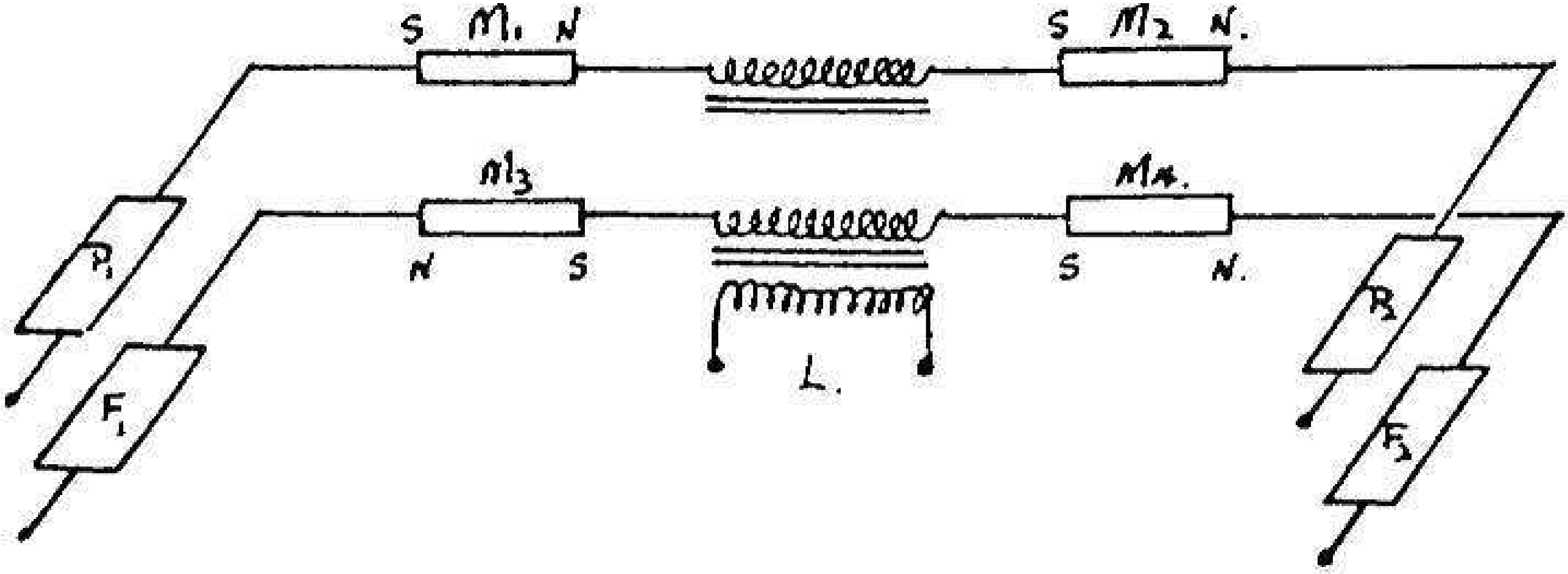
B
A
C
D
N.
S
S
N
I
(Right)
IV
(Right)
N
S
VI (Left)
(Left) III
S
N
N
S
II
(Right)
(Right)
V
S
N
OUTER (Right).
INNER (Left).

Fig: 2.



Note: Paper insulation between magnet and coil.

Fig: 1.


S
M_1
N
S
M_2
N.
M_3
M_4.
N
S
S
N.
P_1
F_1
L.
P_2
F_2

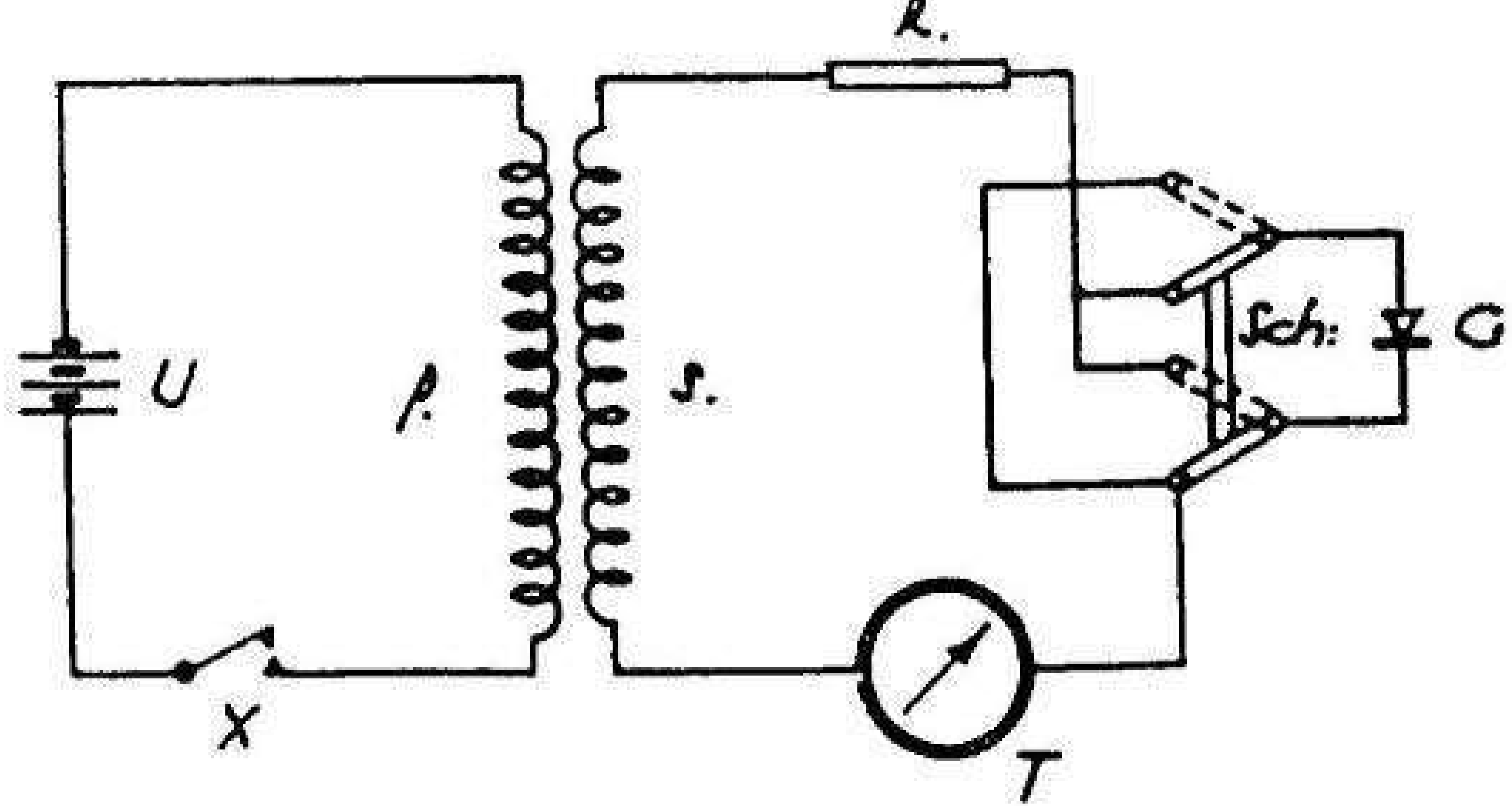


Fig. 4.

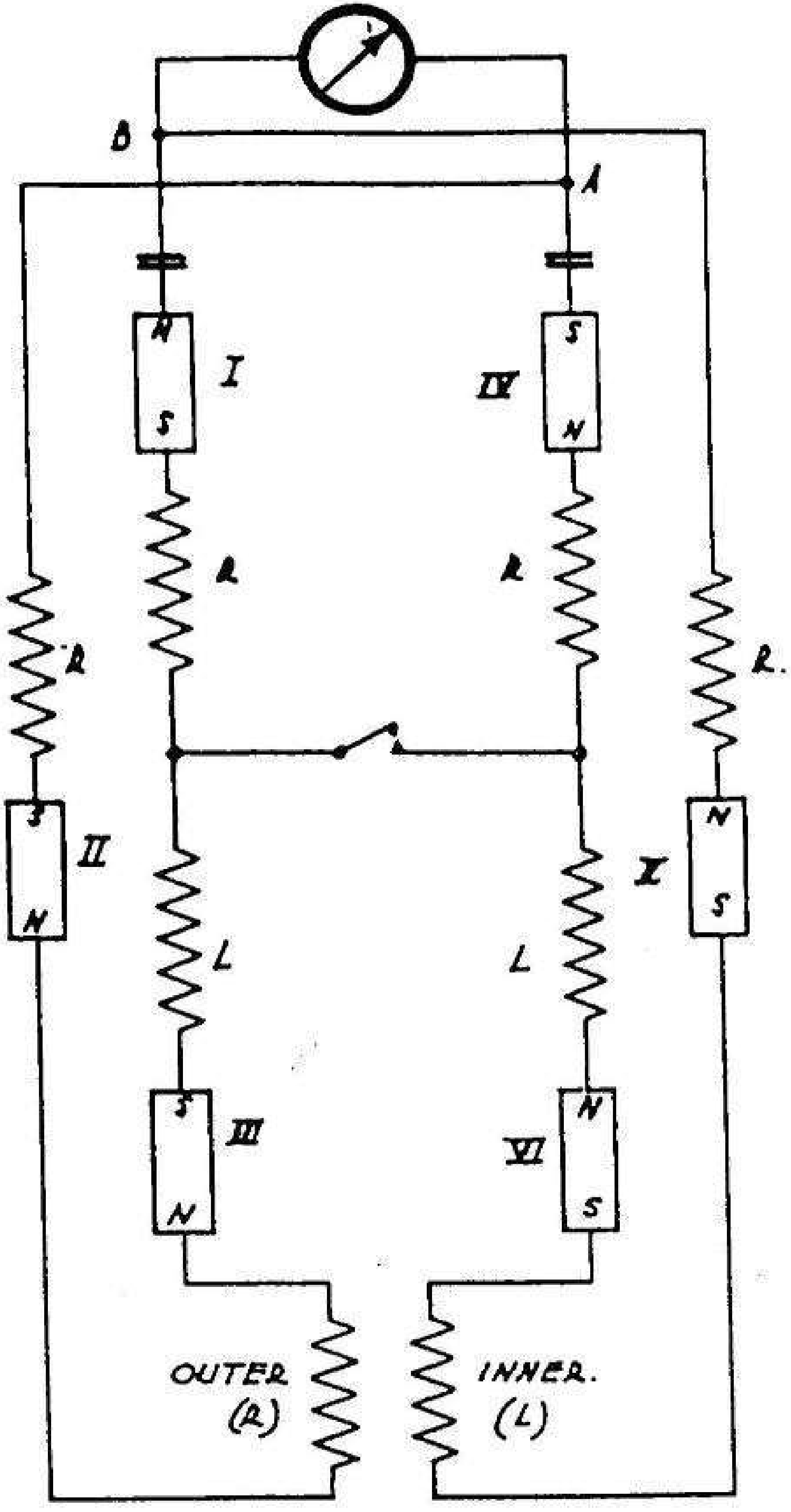
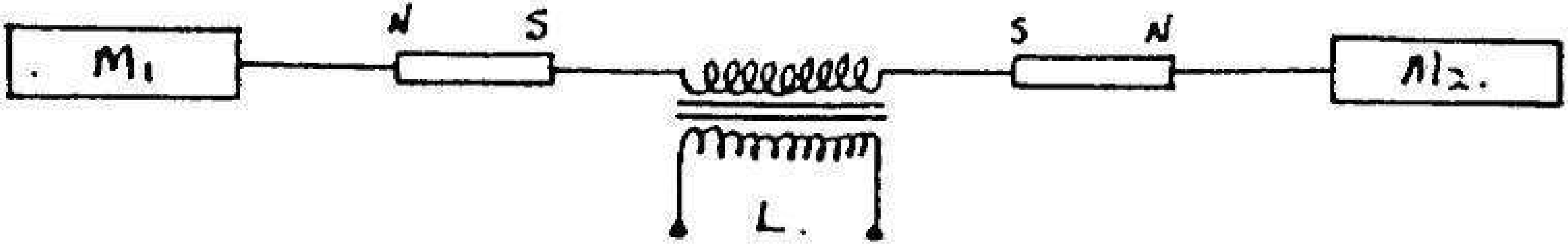
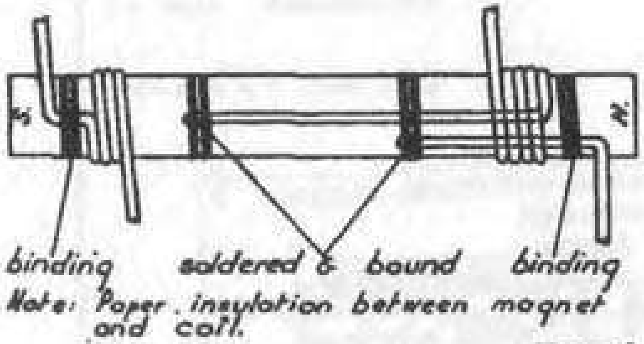
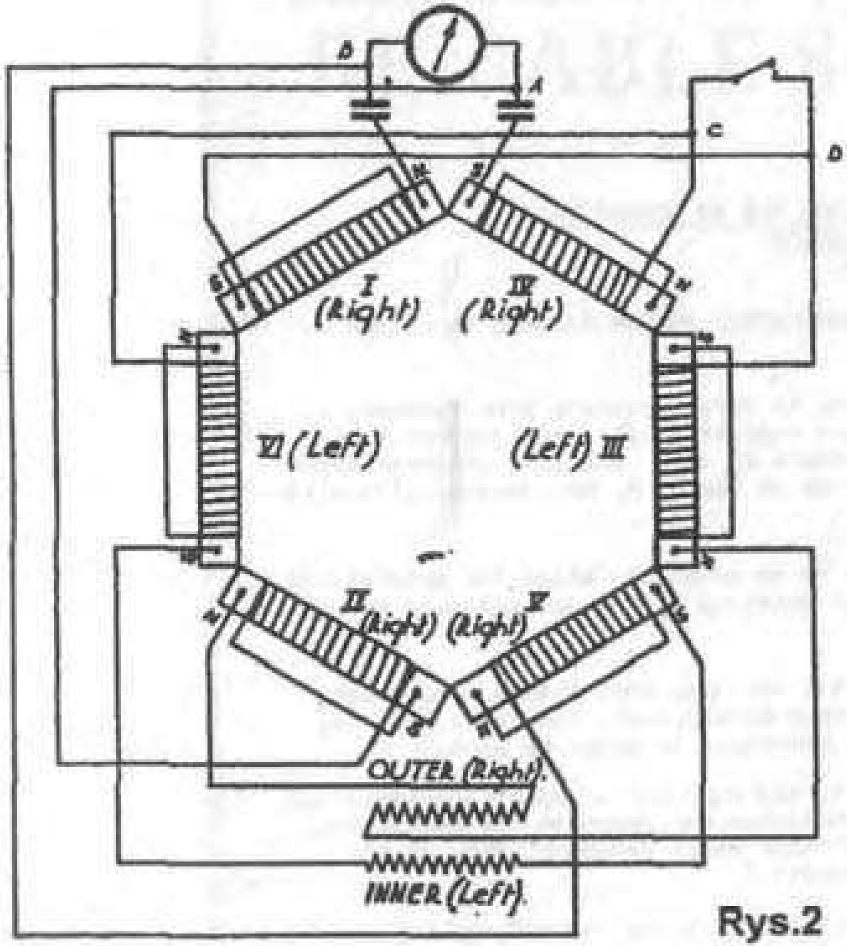


Fig. 3.

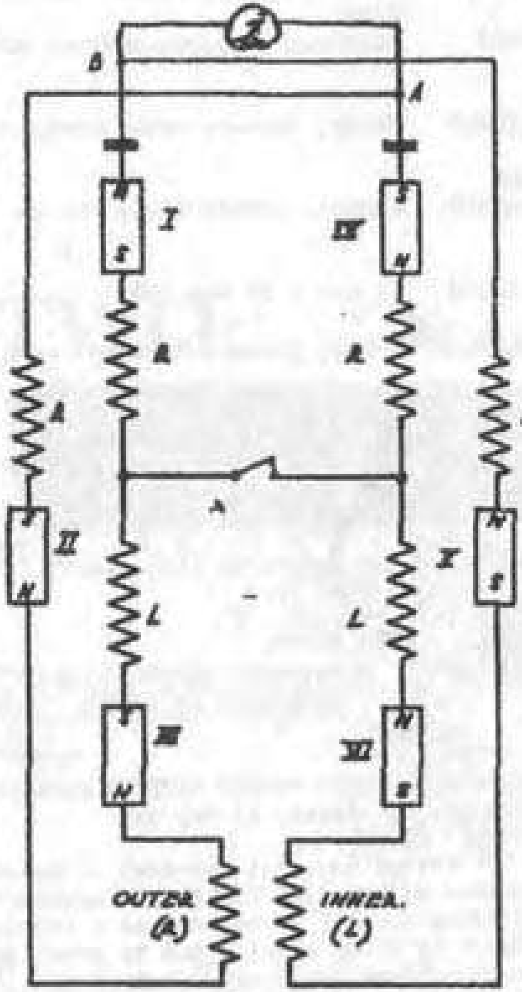

M1
N
S
S
N
M2
L



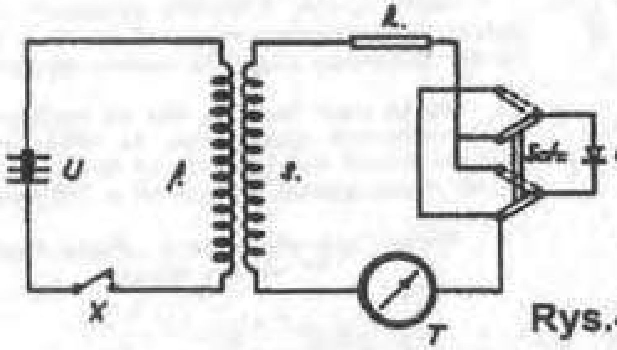
Rys.1



Rys.2



Rys.3



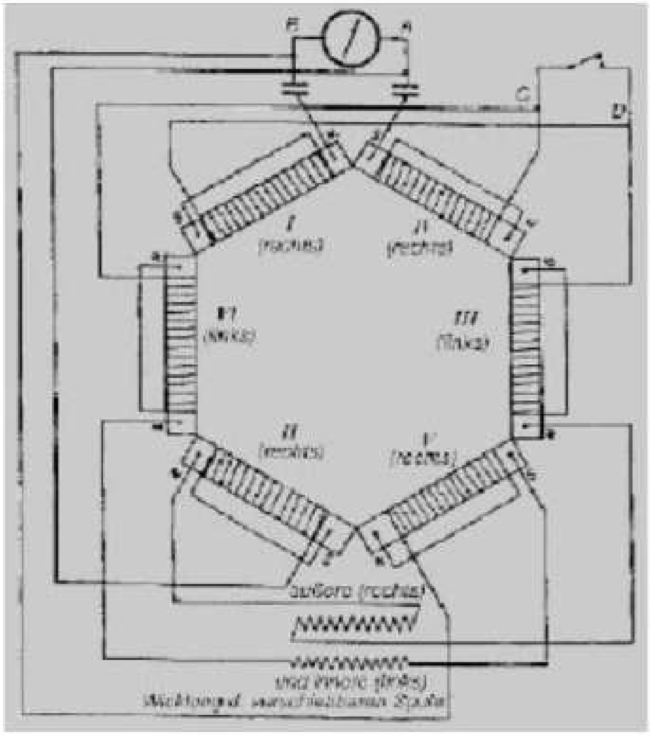
Rys.4

Magnetromapparata

A solid-state magnetic generator was invented by Captain Hans Coler of Germany and a 10 watt example first shown in 1925. It involved magnets to generate electricity and employed a small battery but no other source of input power other than what he called space energy of Nature's quantum invisible world.

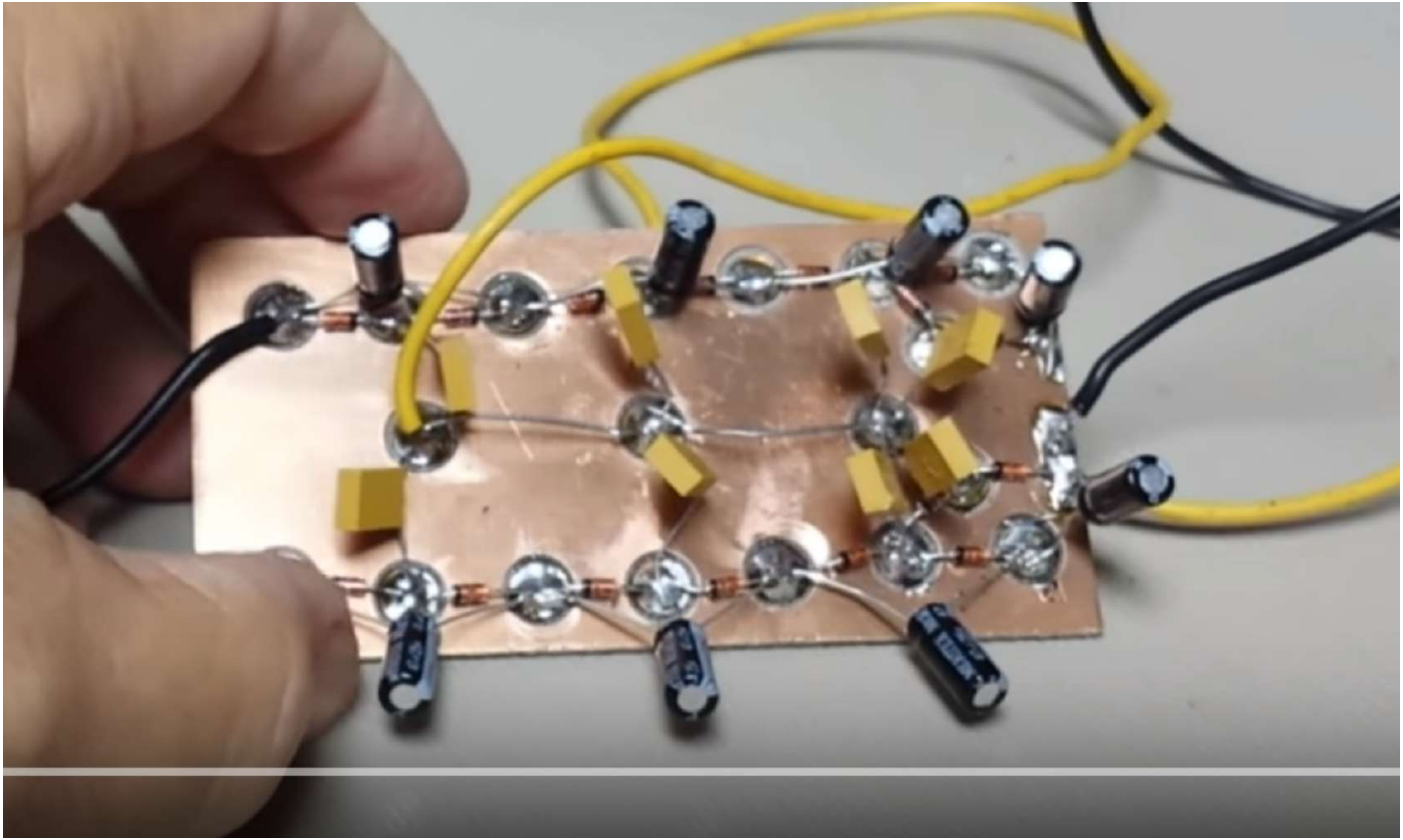
It was denied patent protection by the German Patent Office as being a perpetual motion device. For a time it was ignored, and the records relating to it were buried in hidden archives, possibly because the scientists who had to pass judgement could not understand the physical reason why the invention actually worked.

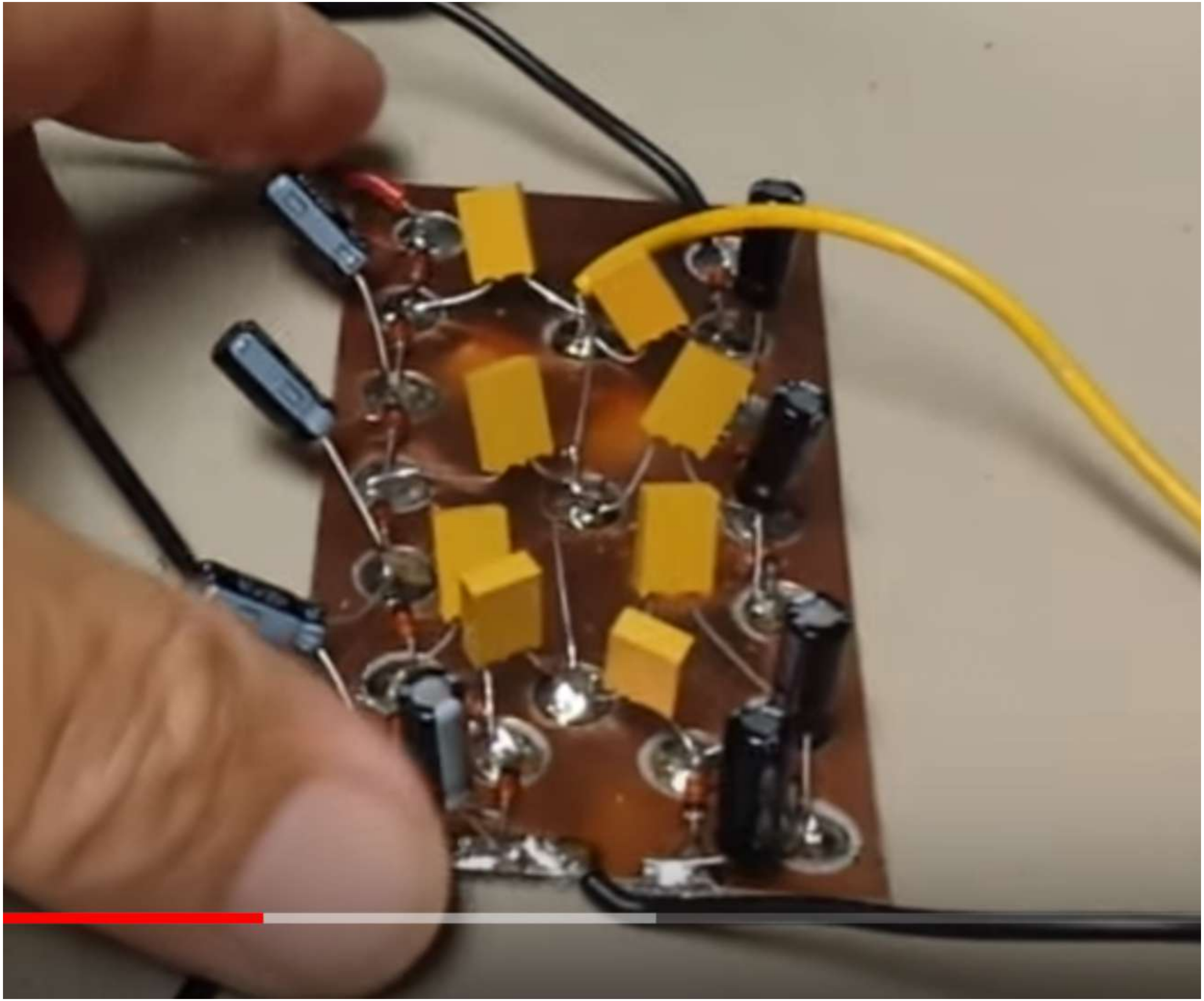
Later, a 70 Watt prototype was built, and a company formed: Coler Gmbh. Later a 5 kilowatt devices was built which allegedly powered Coler's house and laboratory for three years.

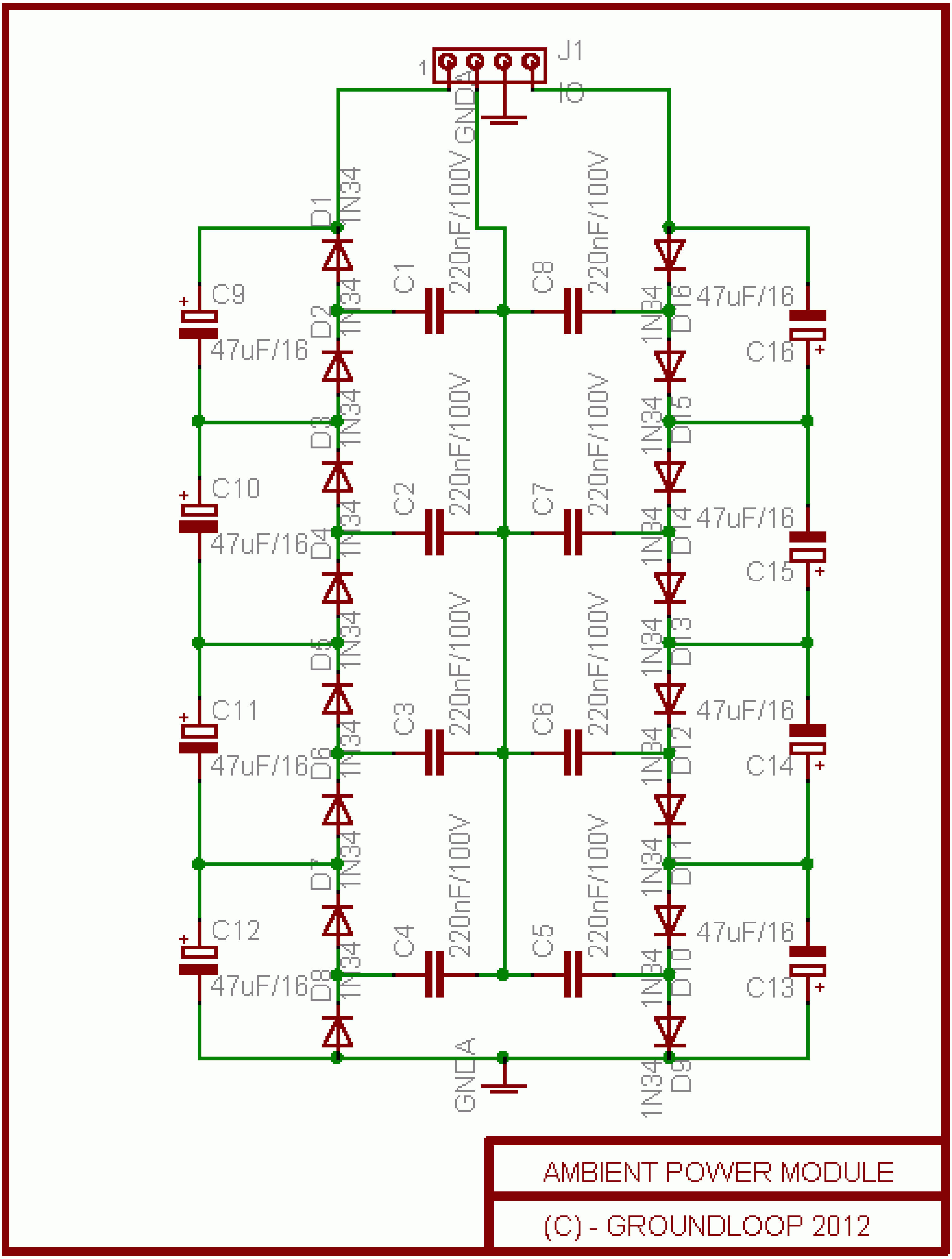


Official interest was shown by heads of the German navy who felt an investigation was necessary, and an official report was produced. A highly secret Nazi effort apparently had the goal of using his invention to recharge submarine batteries, without the need for the sub to surface. Experts examined the device and could find no fraud. It was judged Coler was an honest experimenter, but no expert opinion was forth coming as to how the unit operated. It was put under Official Secrecy after its operation had been verified by Government scientists. (Reference: articles entitled Perpetual Commotion and Hans Coler on http://magneticpowerinc.com)

We don't know of anyone who has been able to successfully replicate this technology into a practical device.






J1
1
GNDA
IO
D1 1N34
D2 1N34
D3 1N34
D4 1N34
D5 1N34
D6 1N34
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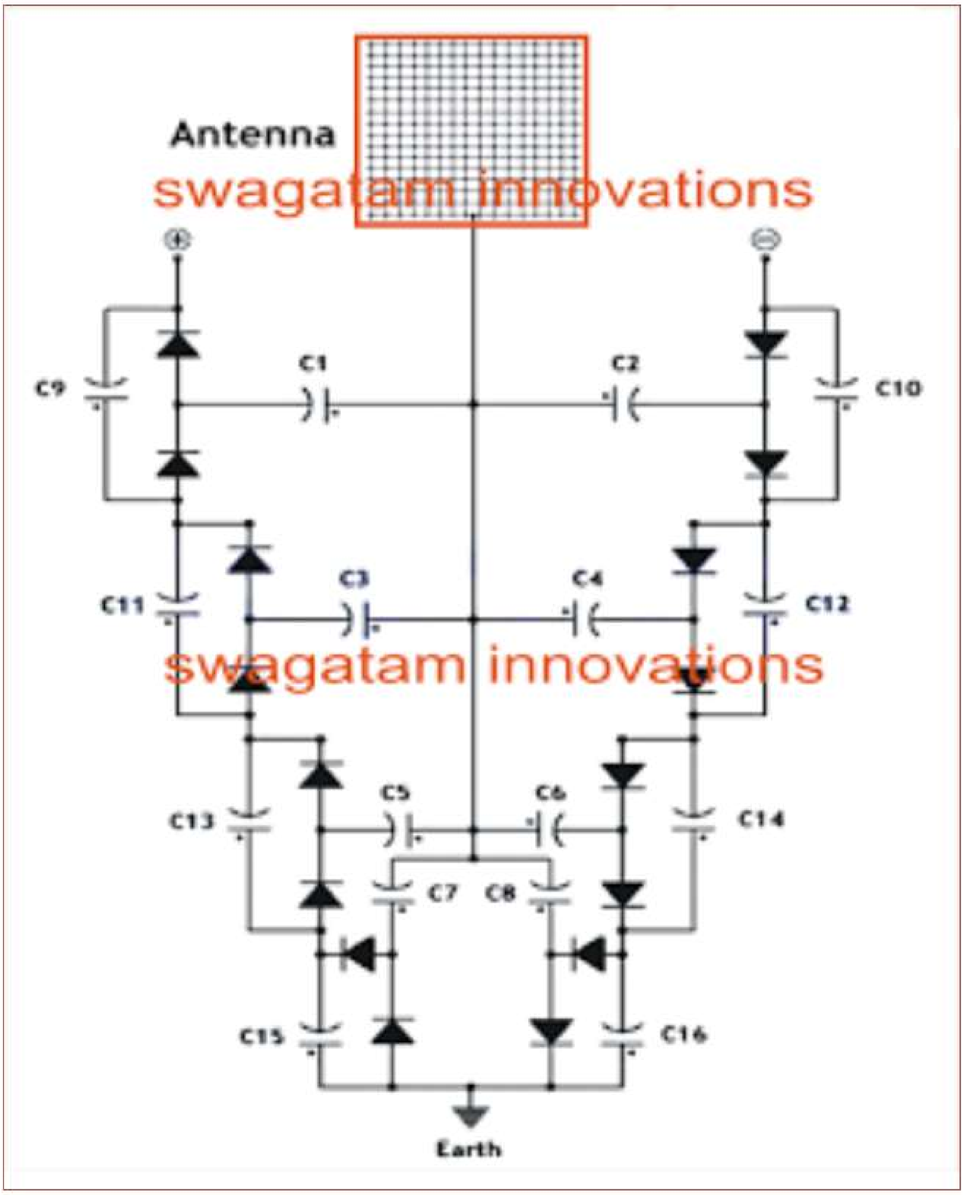
D8 1N34
D9 1N34
D10 1N34
D11 1N34
D12 1N34
D13 1N34
D14 1N34
D15 1N34
D16 1N34
C1 220nF/100V
C2 220nF/100V
C3 220nF/100V
C4 220nF/100V
C5 220nF/100V
C6 220nF/100V
C7 220nF/100V
C8 220nF/100V
C9 47uF/16
C10 47uF/16
C11 47uF/16
C12 47uF/16
C13 47uF/16
C14 47uF/16
C15 47uF/16
C16 47uF/16
GNDA
AMBIENT POWER MODULE
(C) - GROUNDLOOP 2012

Circuit Diagram

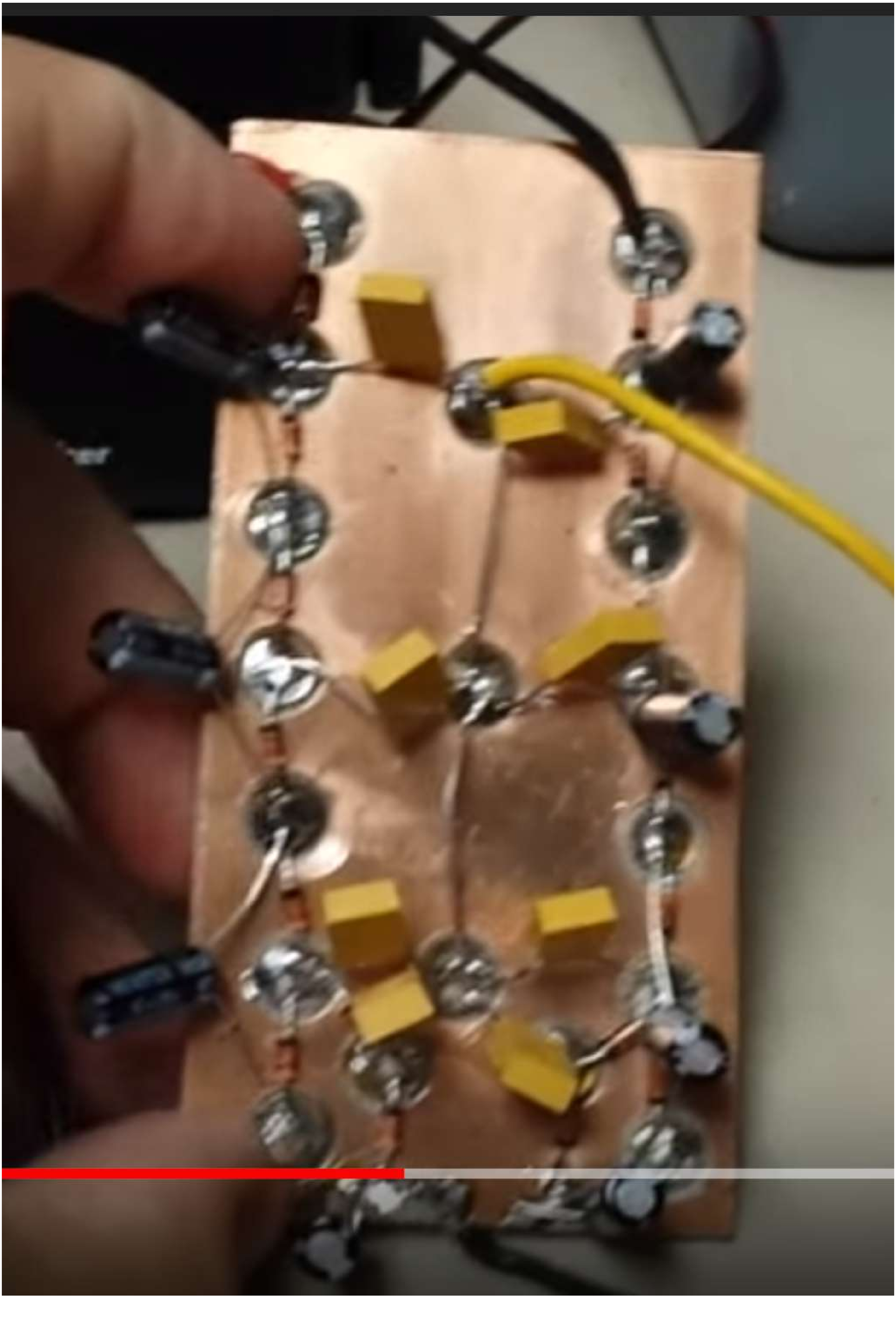


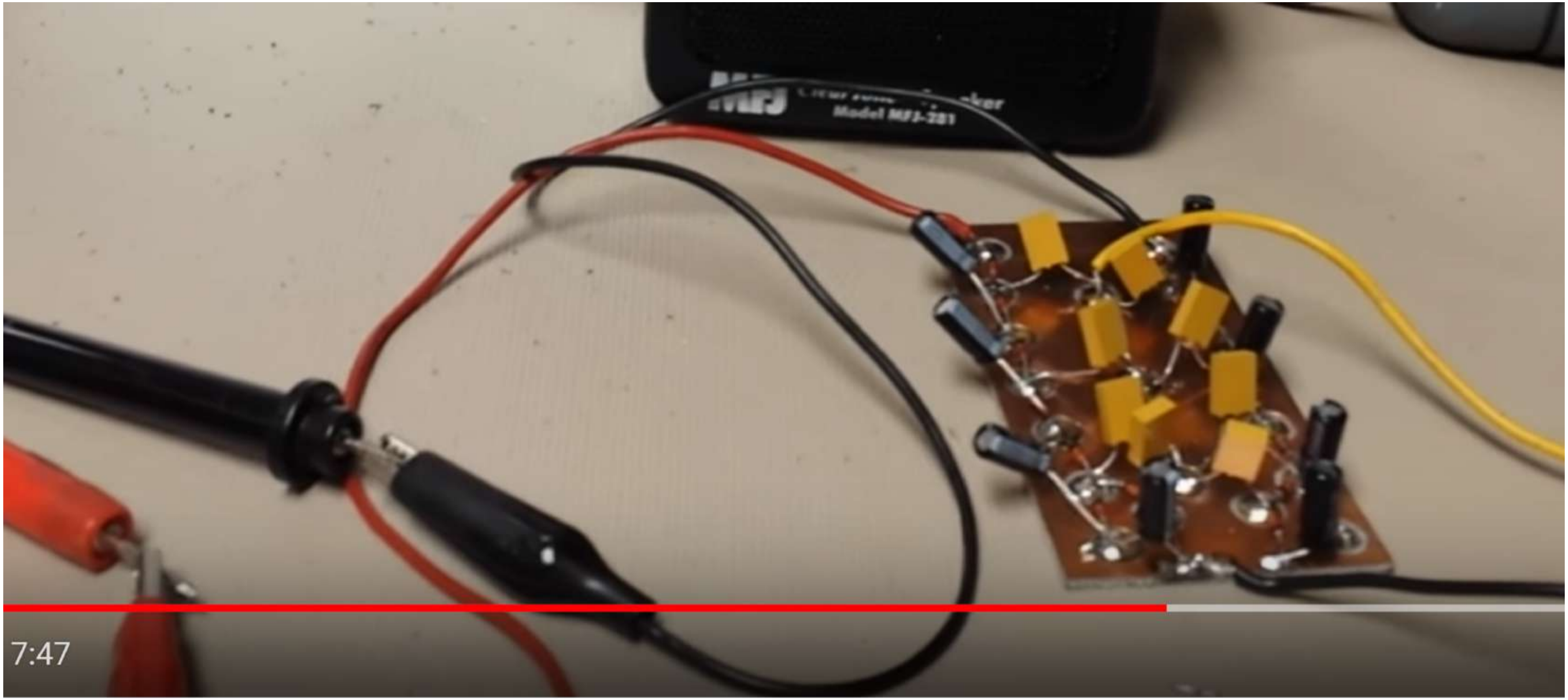
Parts List

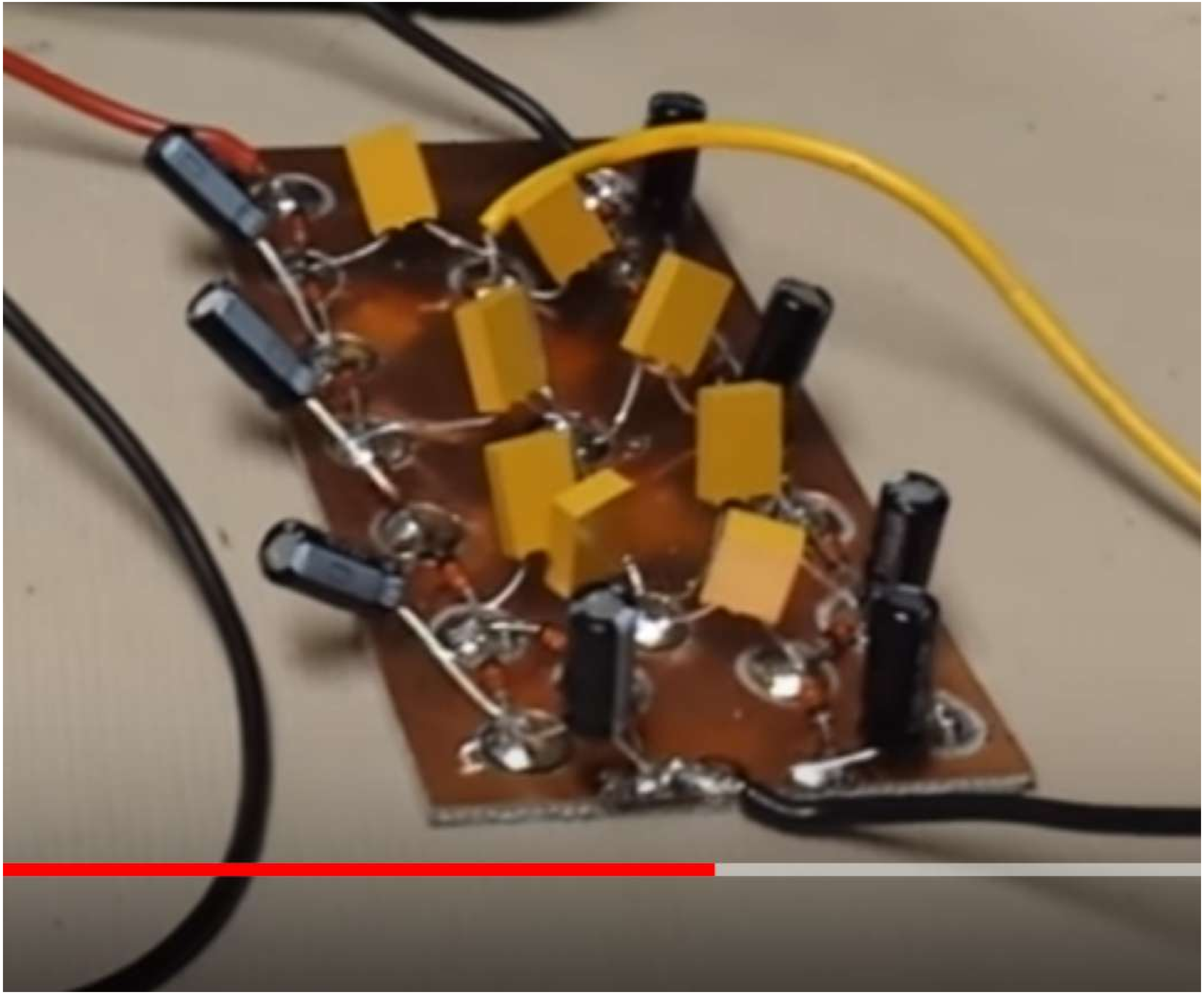
All Diodes are 1N4148

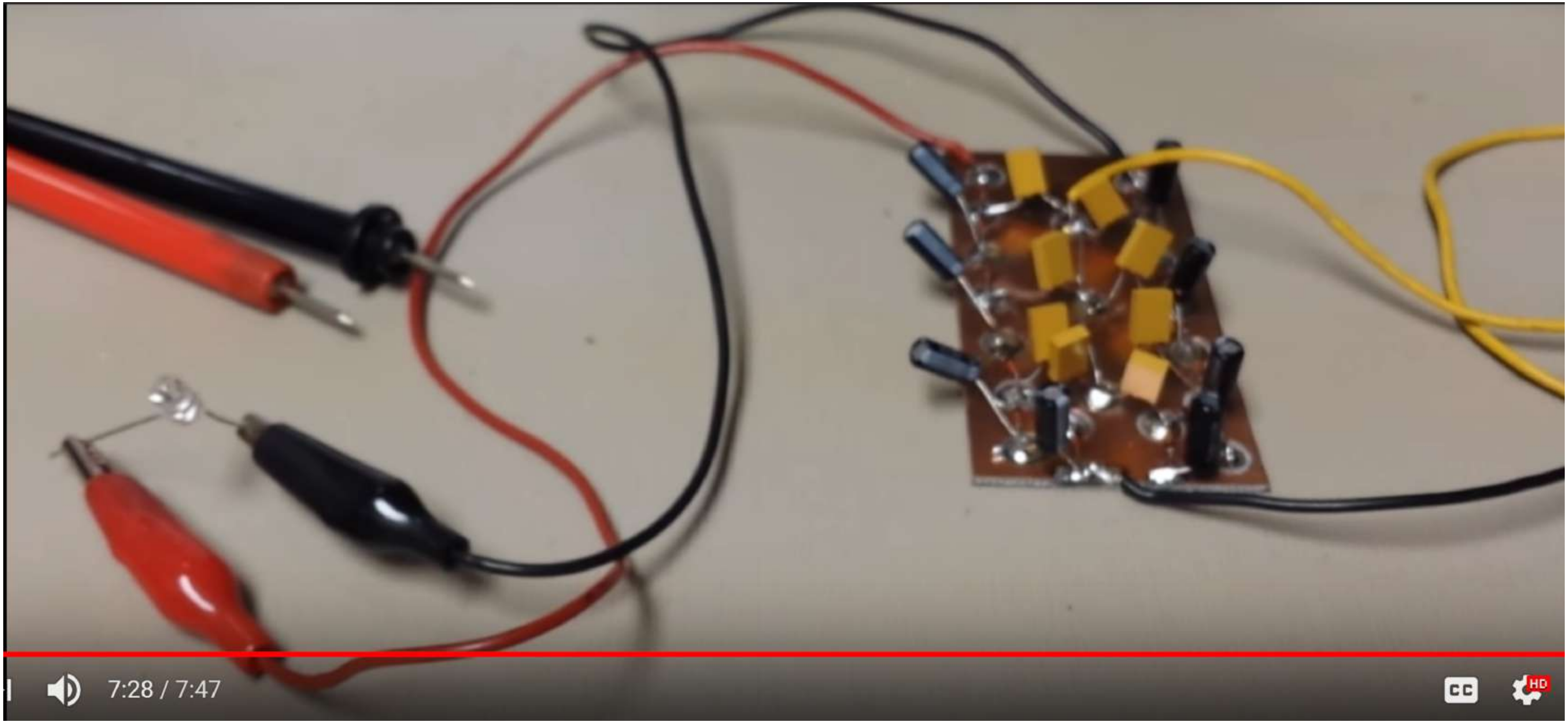
C1---C8 = 0.22uF/100V mylar

C9----C16 = 33uF/25V electrolytic




MFJ
Model MFJ-281
7:47

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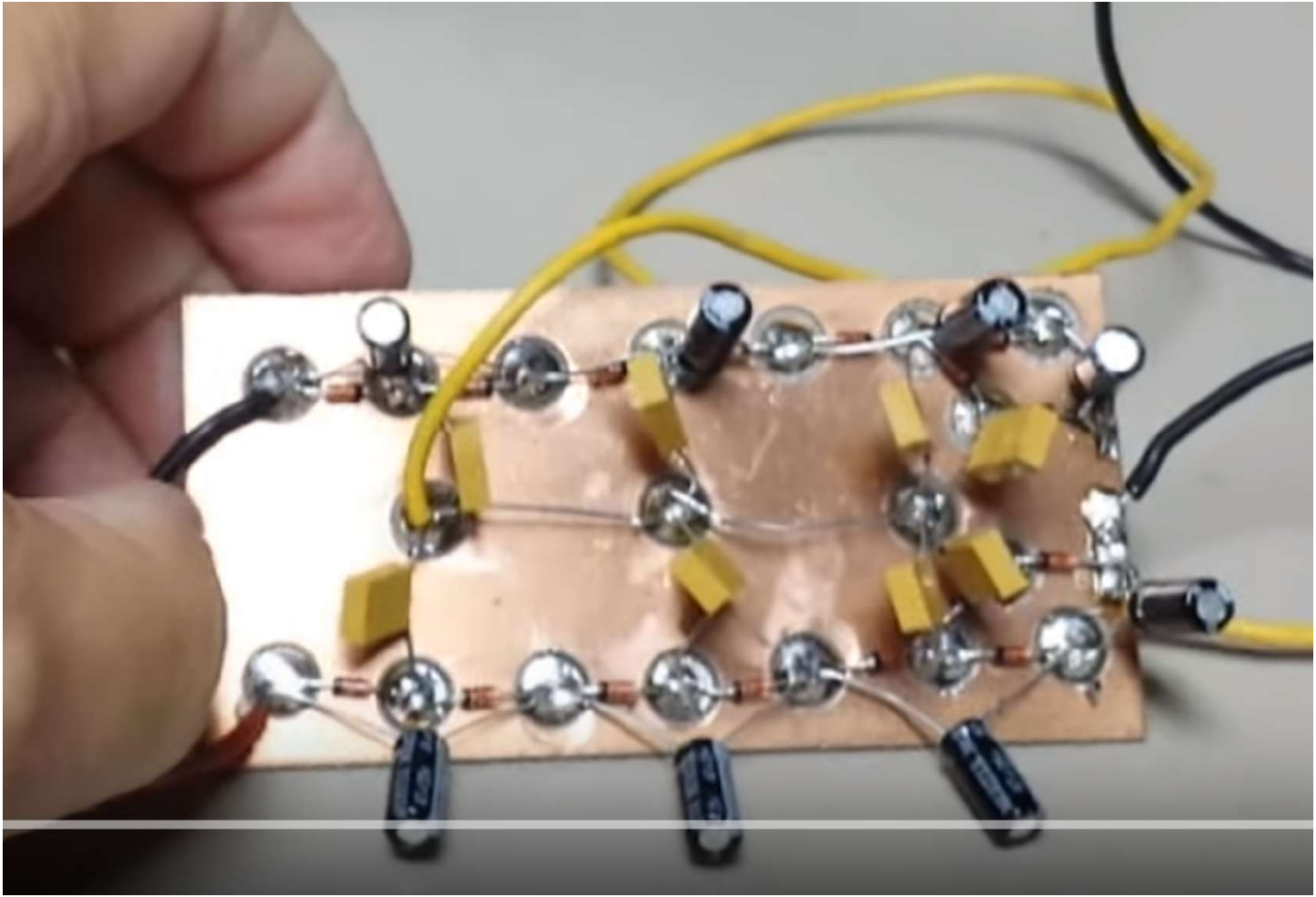
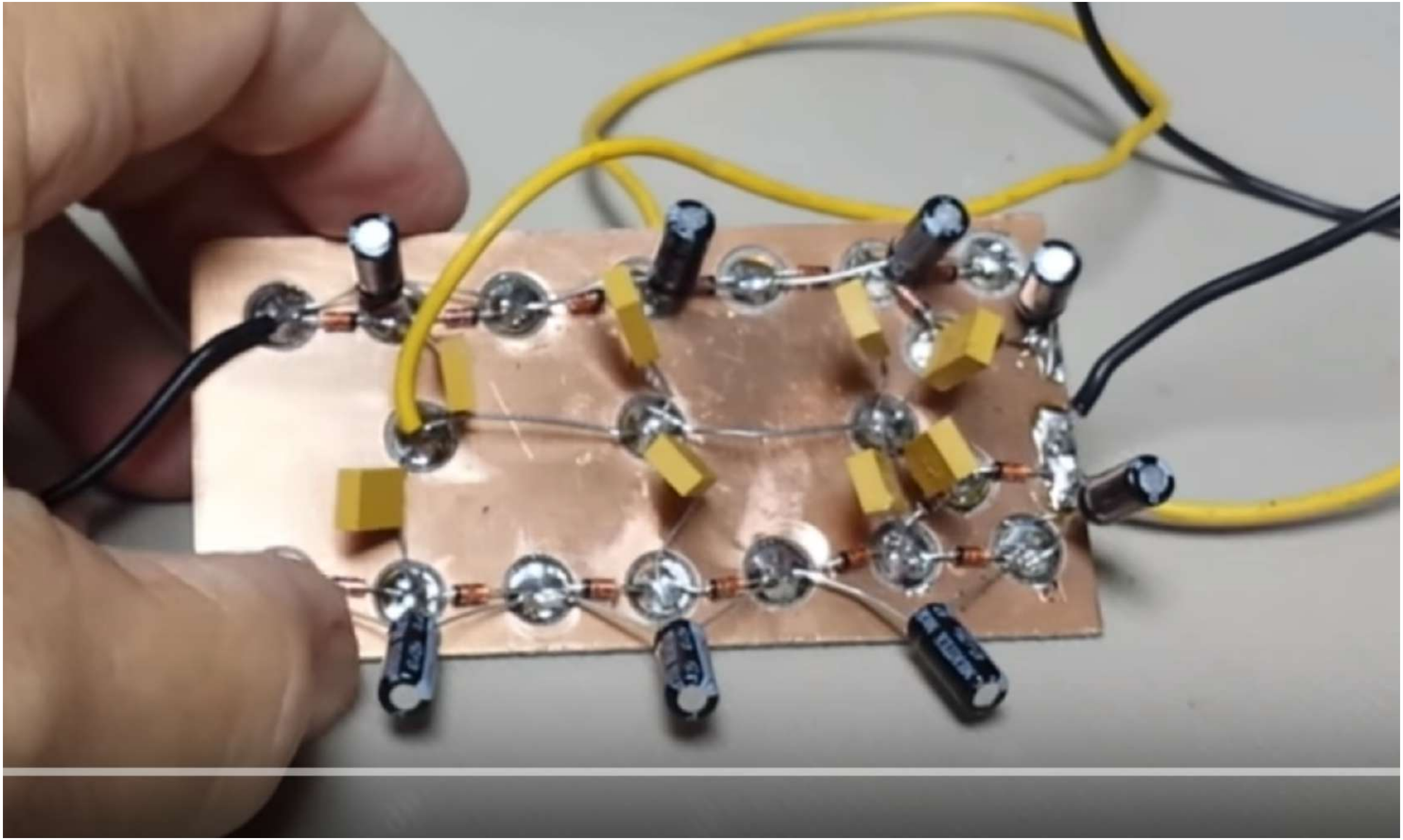
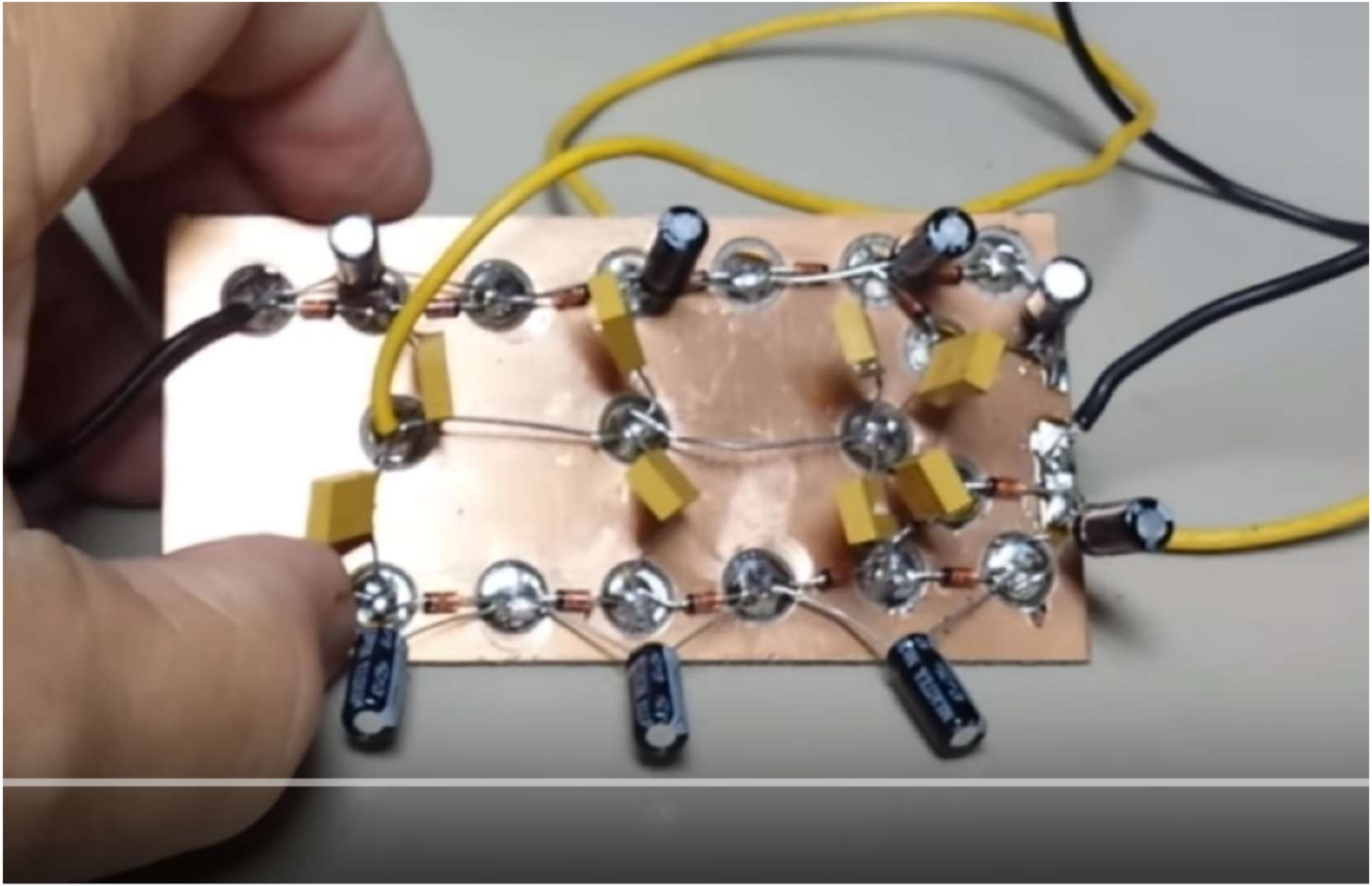
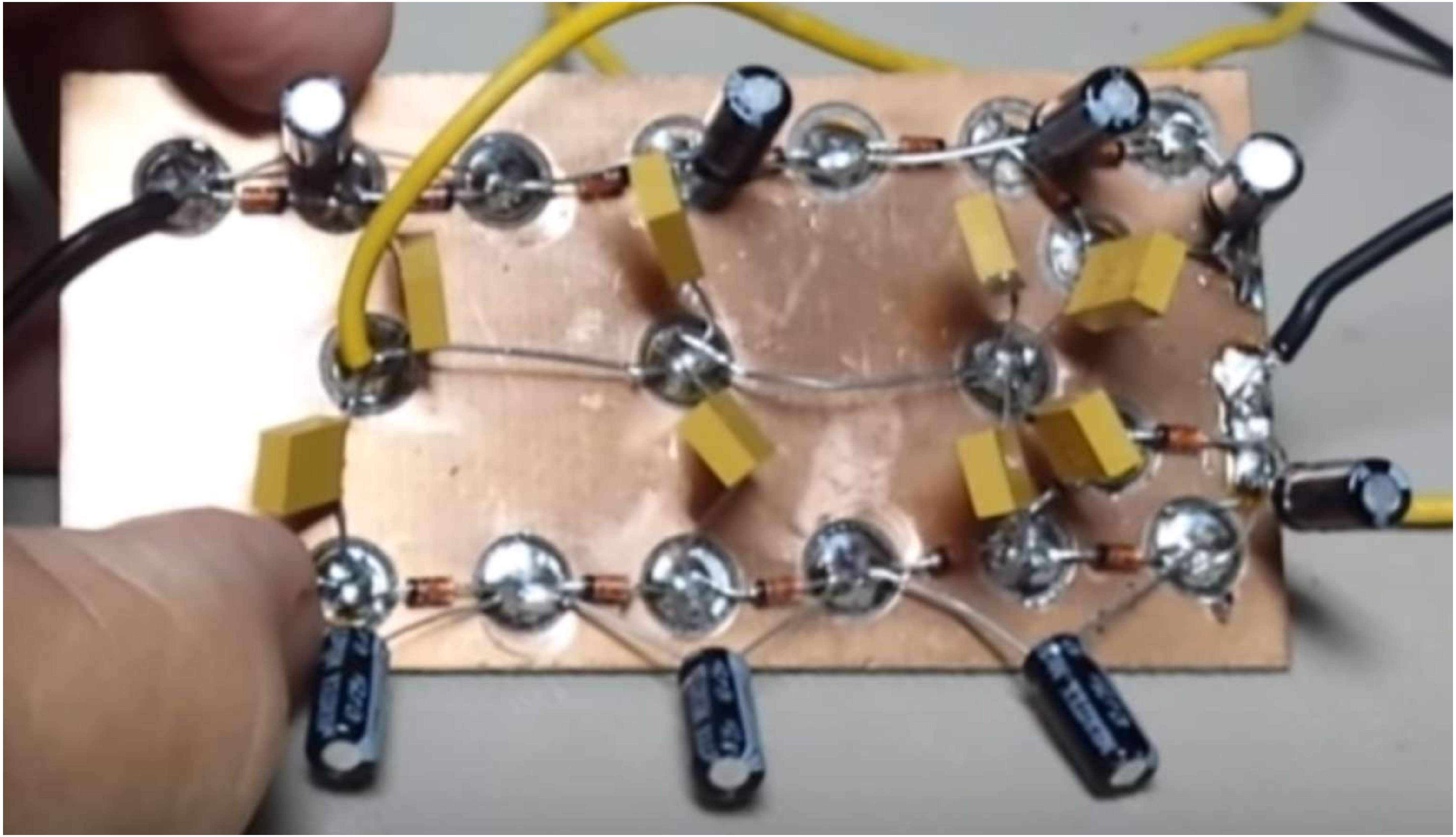
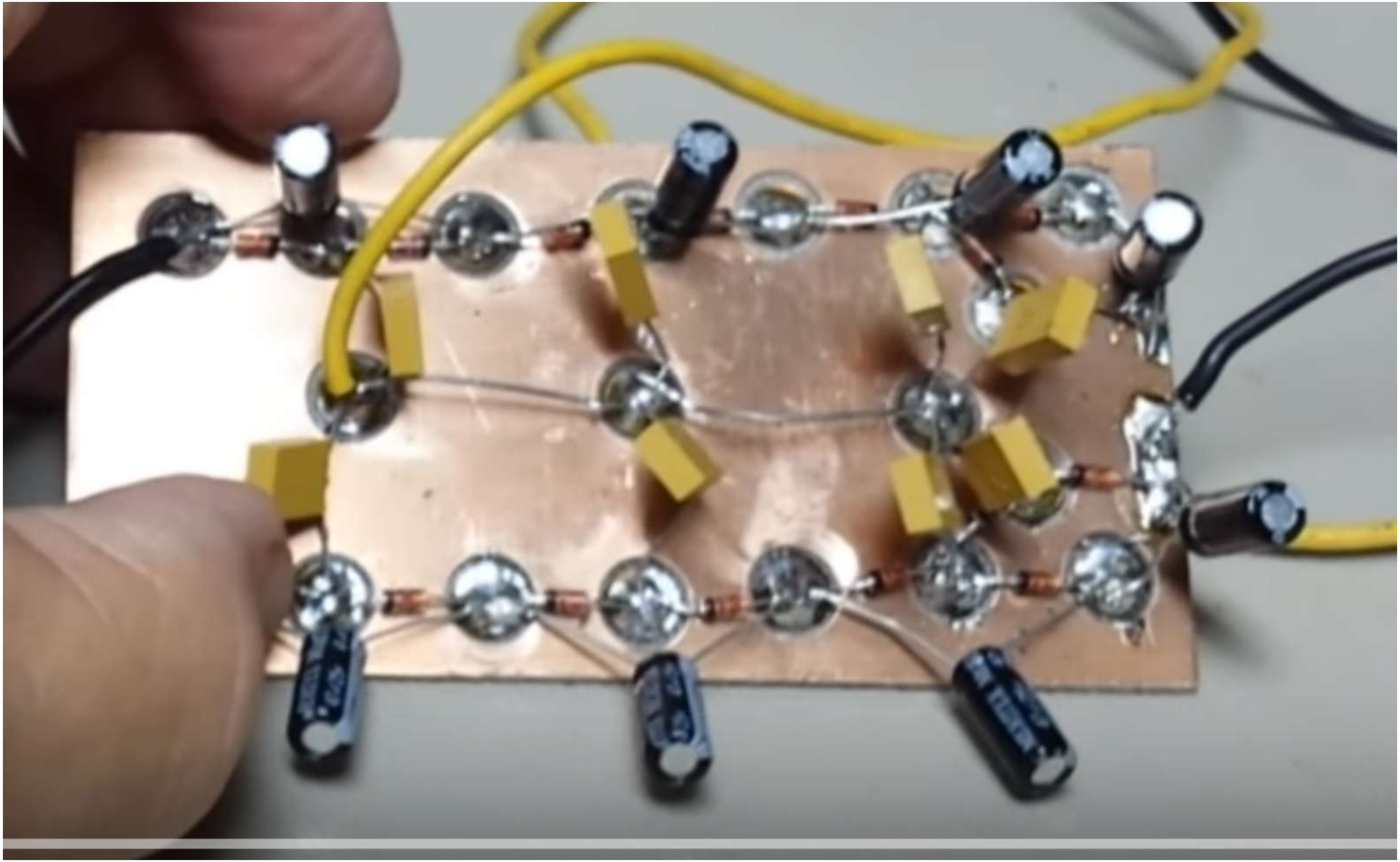
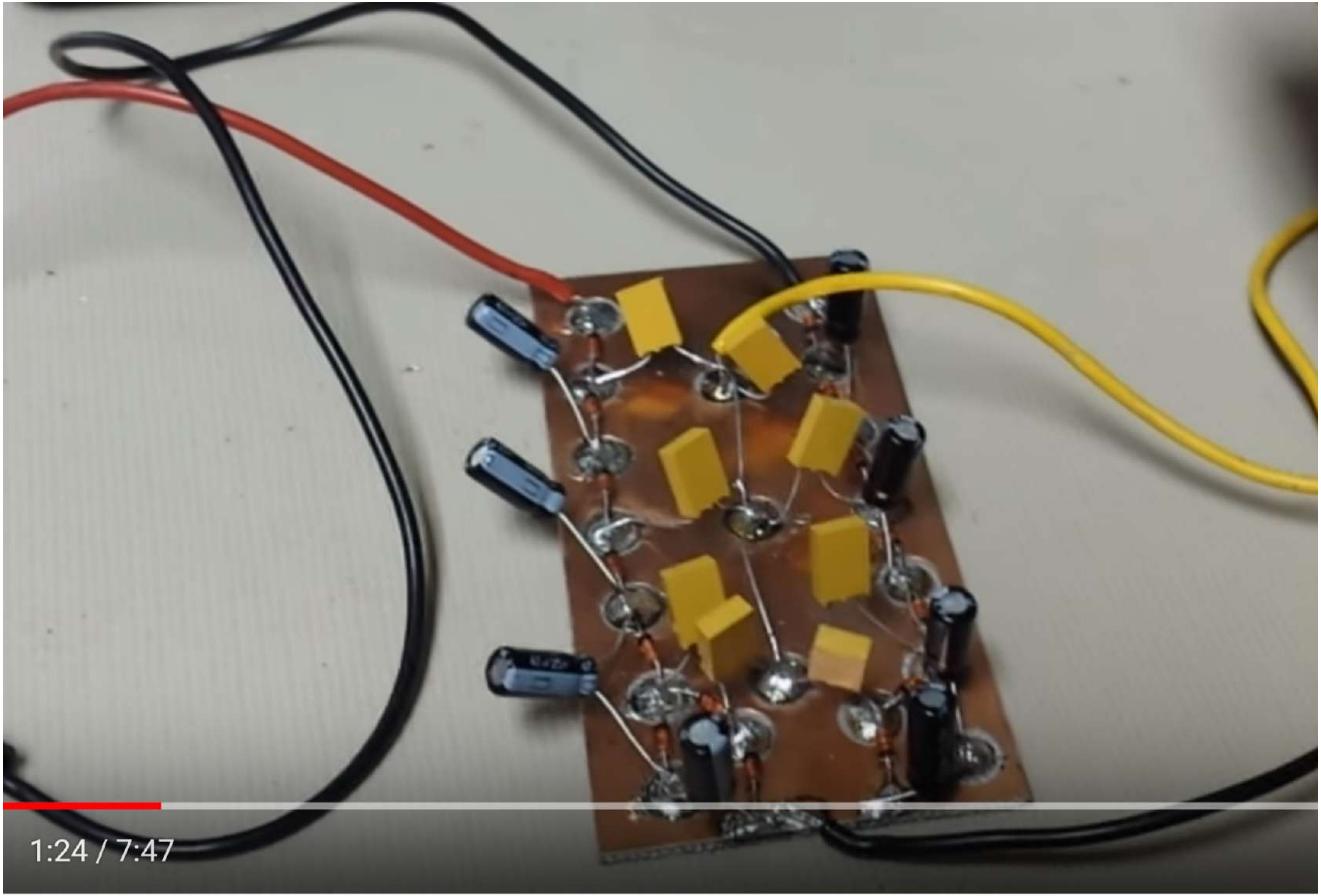


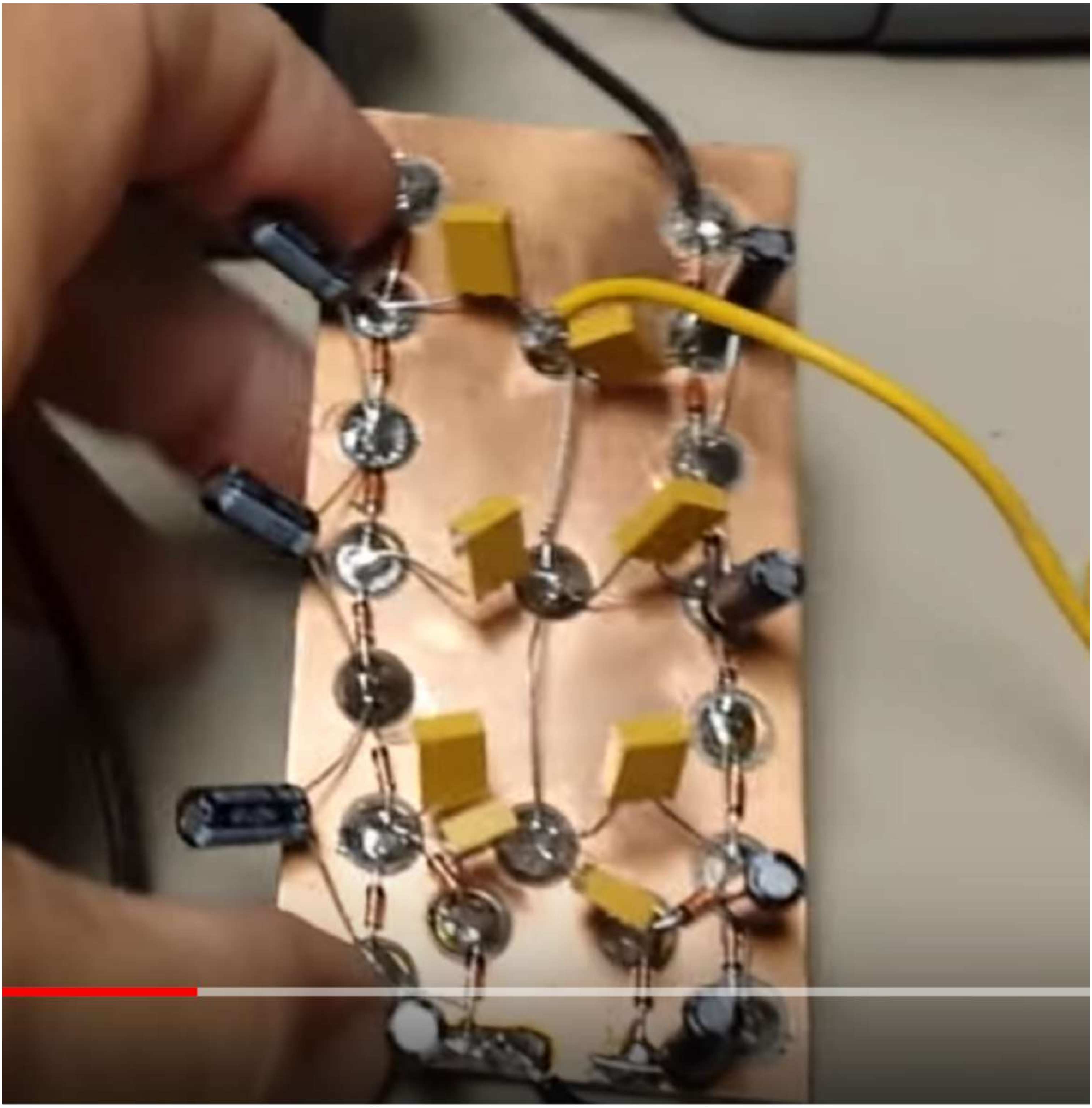


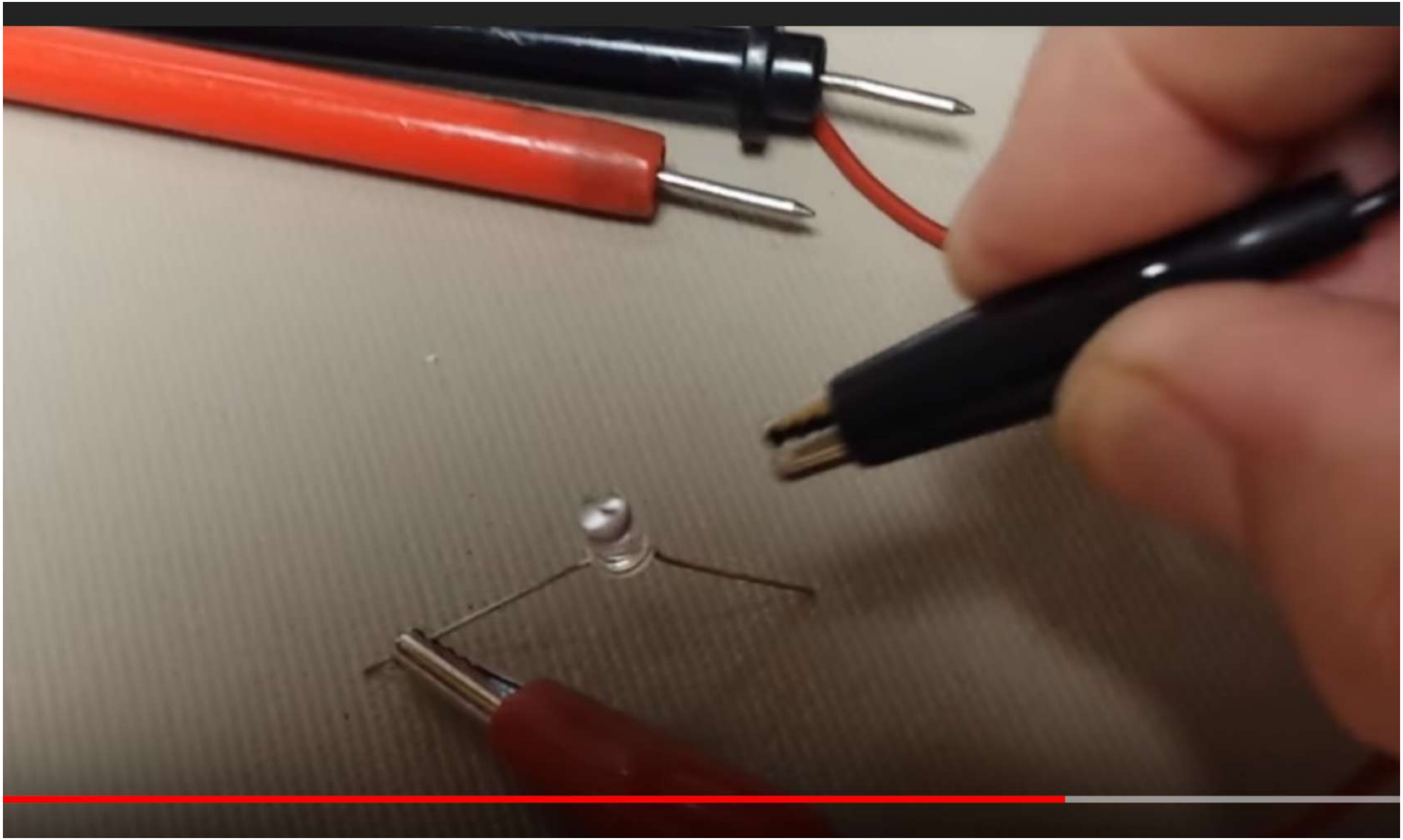


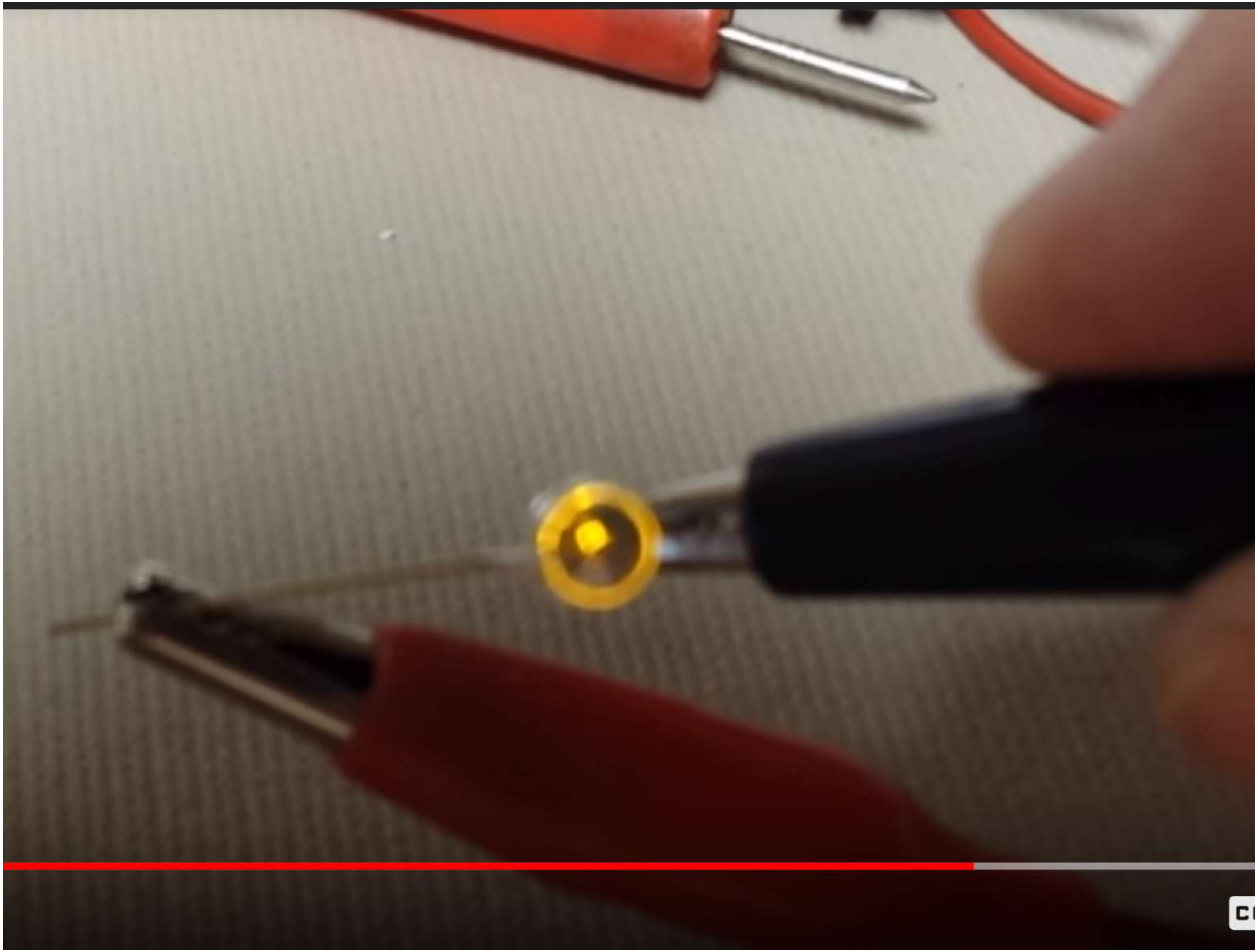


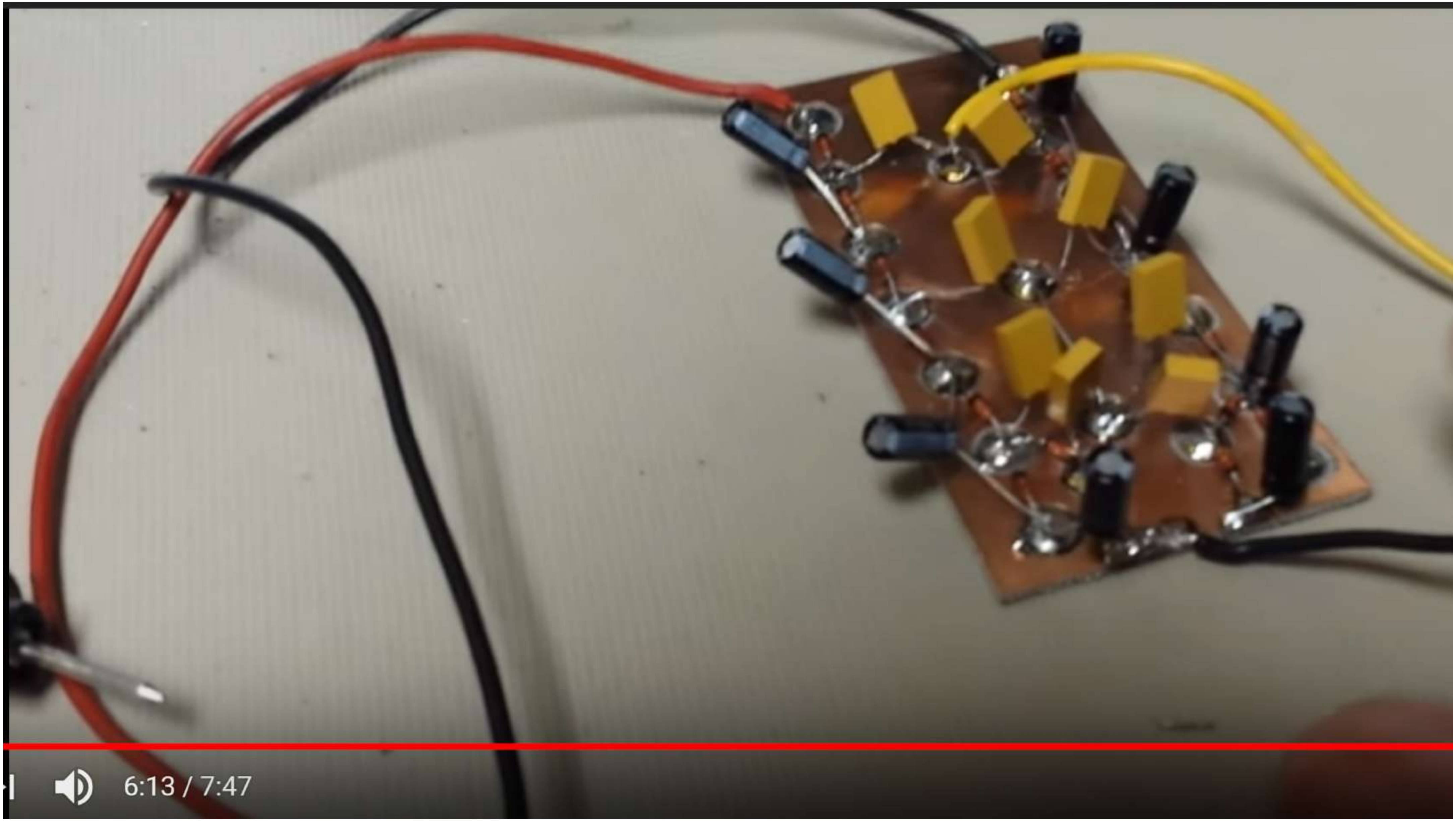



1:24 / 7:47





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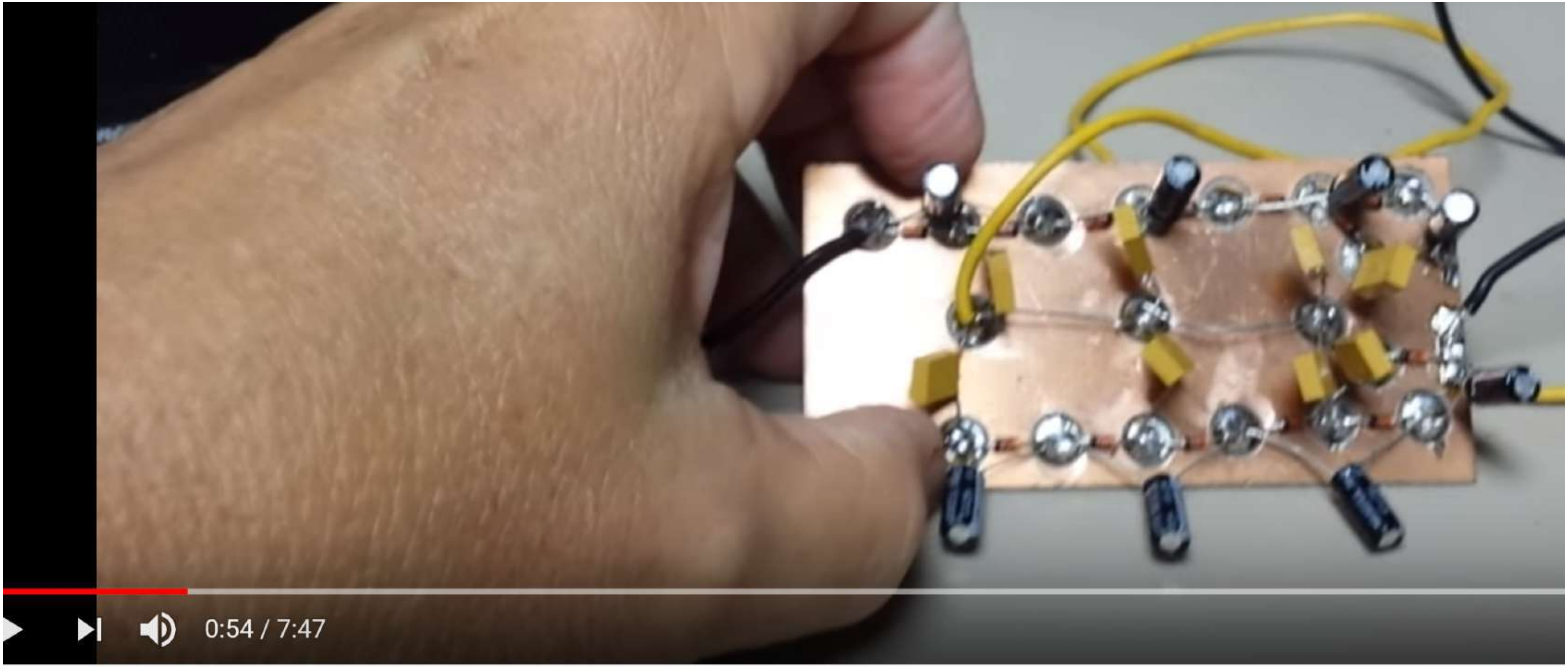
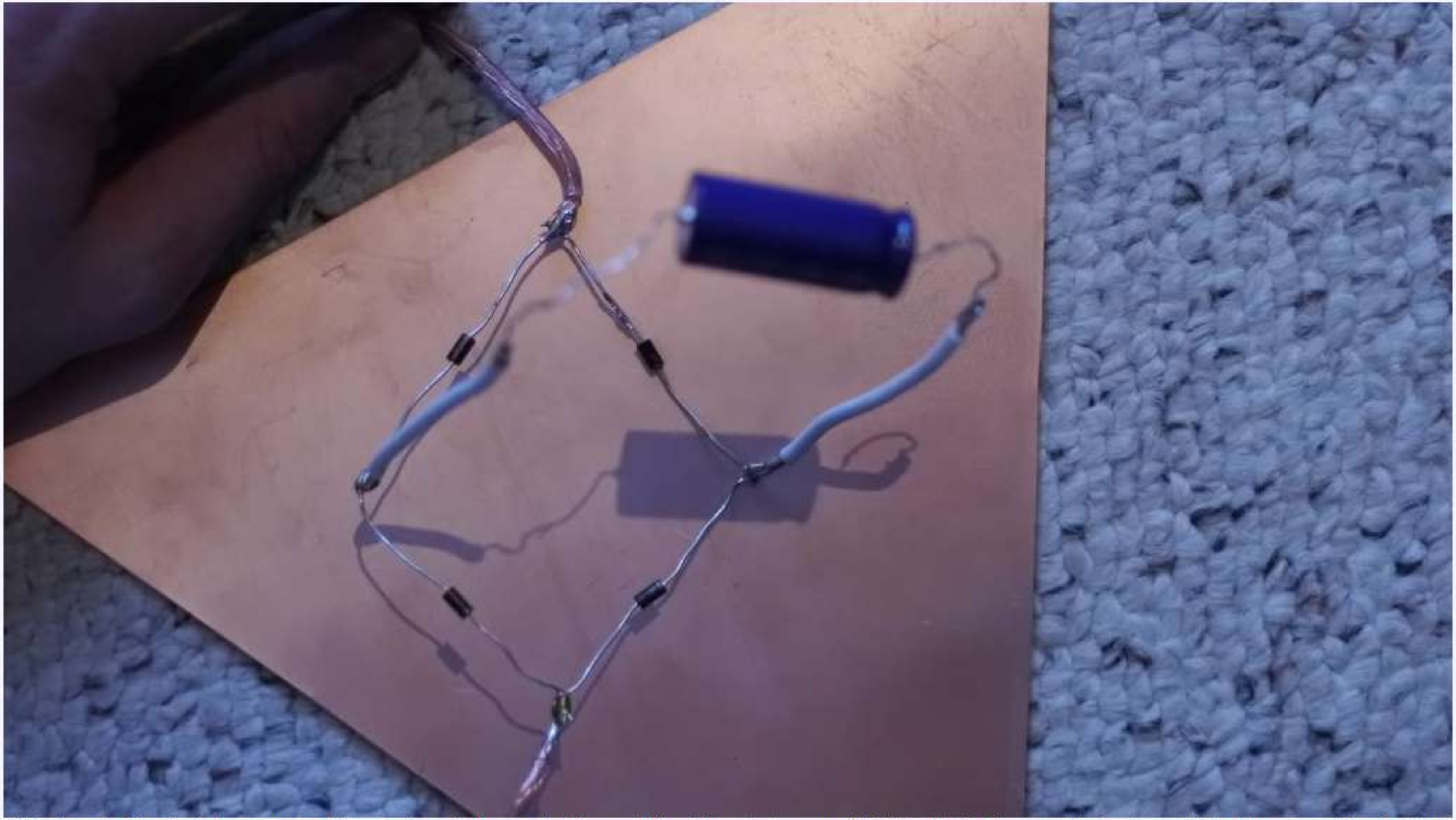


Free Electricial Energy From Invisible Radiation

Up next

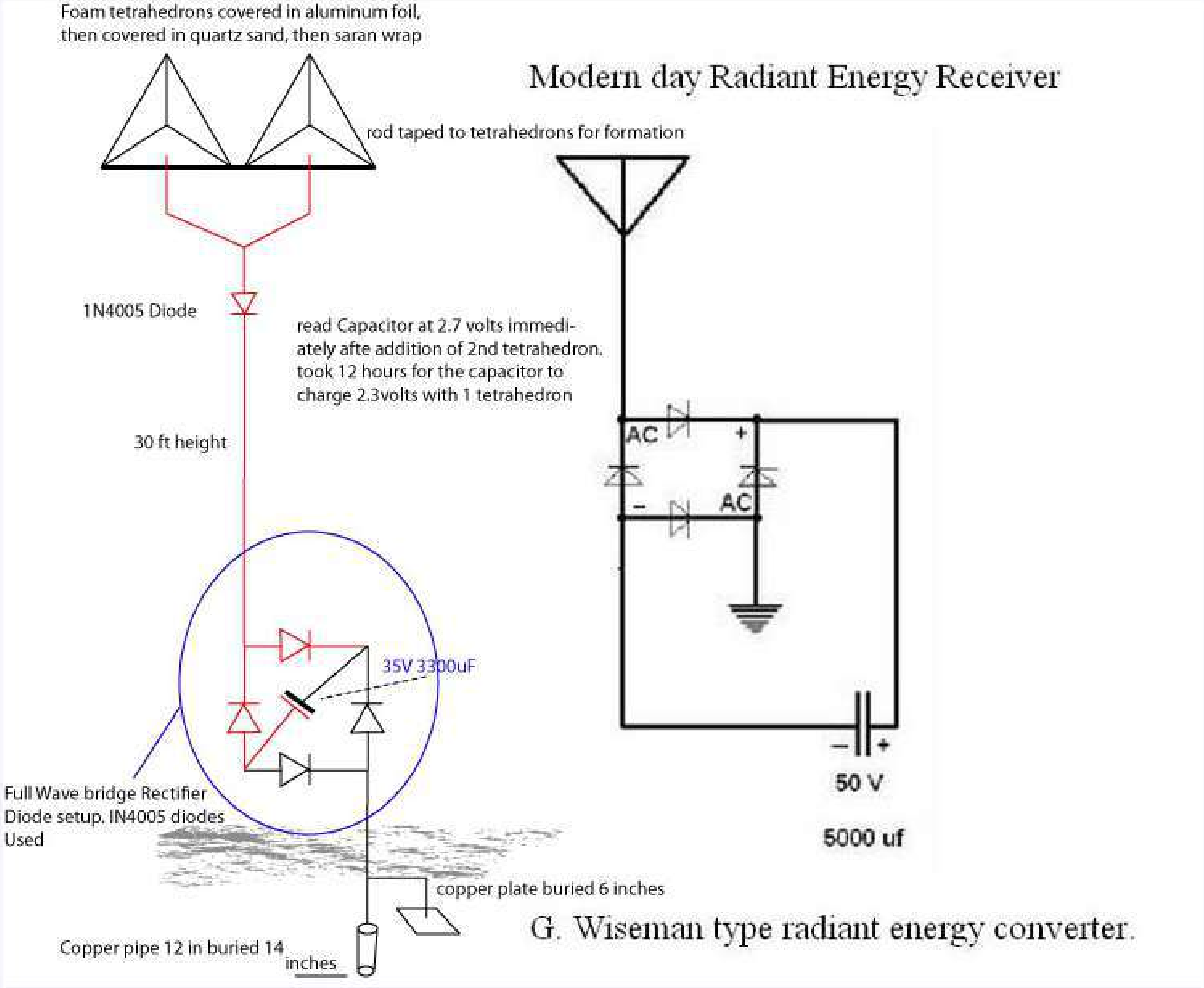
Free Energy Vs



^^^ here is the 4 diodes arranged to create a full wave bridge rectifier. The diodes are 1N4005 diodes from radioshack, and the blue capacitor (radioshack) is 35Volt 3300uF,


^^^ view of the circuit

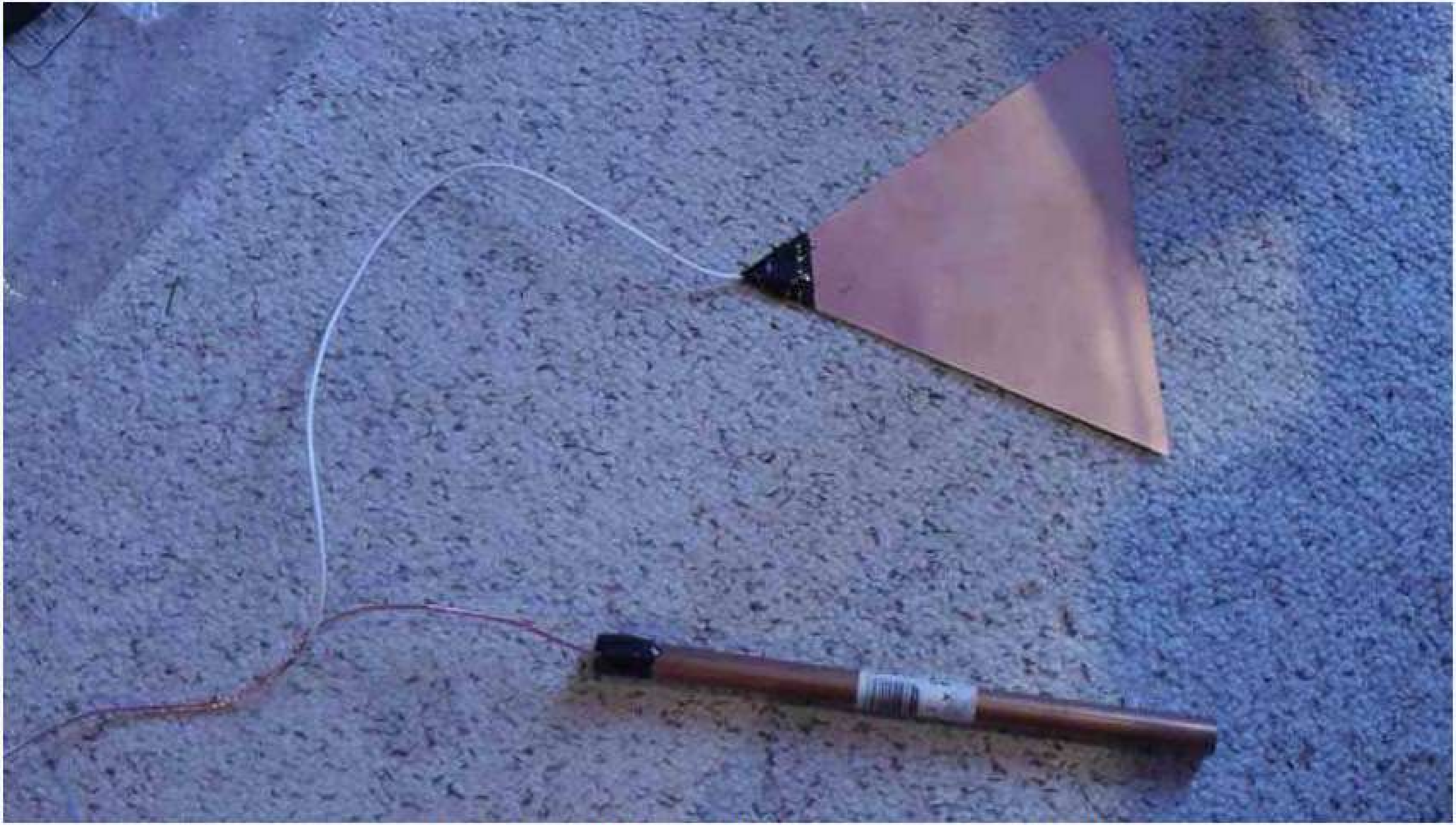
I made a radiant energy antenna for my 1st Free Energy project, and with LOTS of help and knowledge sharing fro
have 3 antennas and 2 grounds and have 2.81 volts in my cap. Somethings better than nothing😊 heres some pics

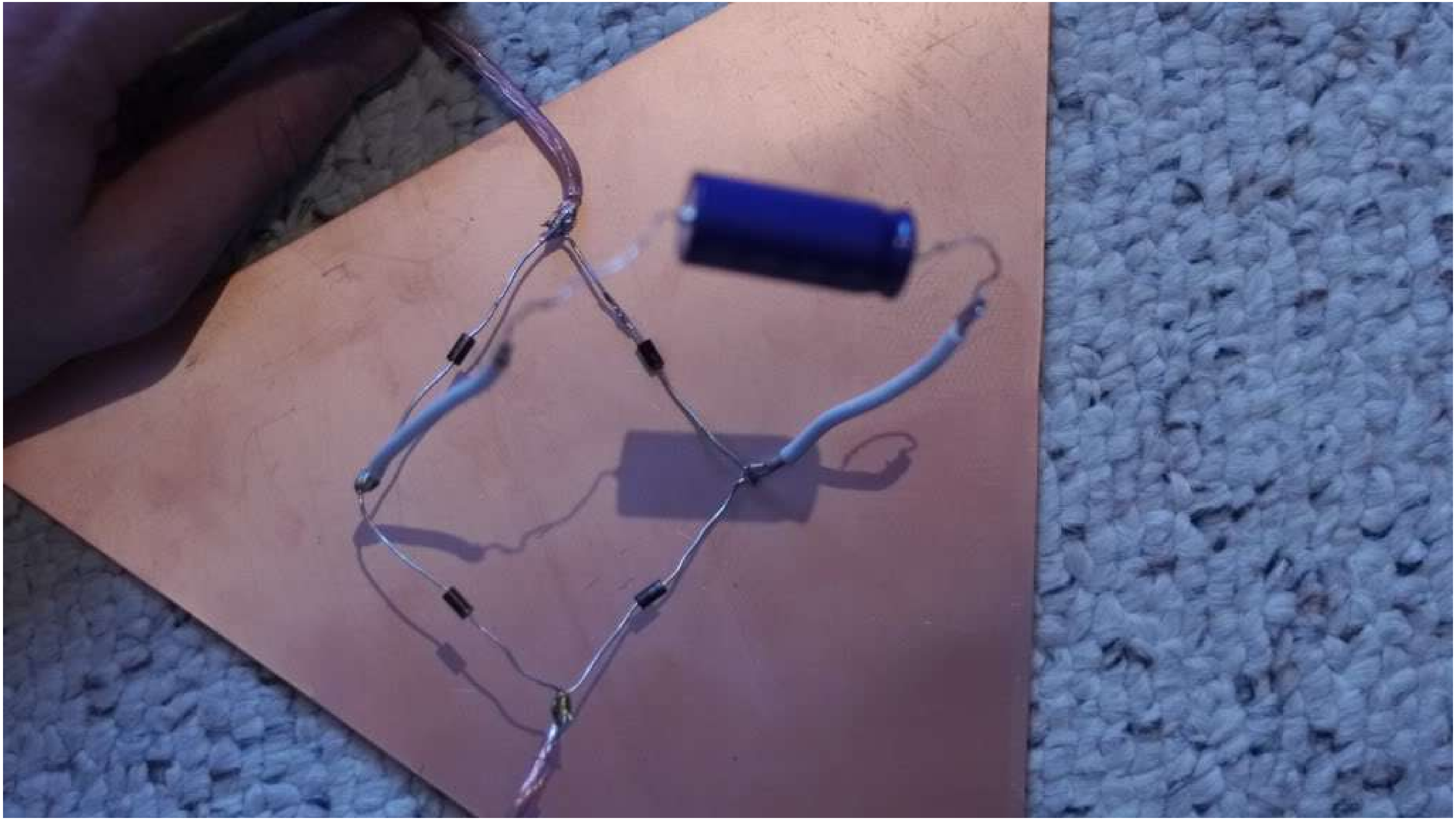


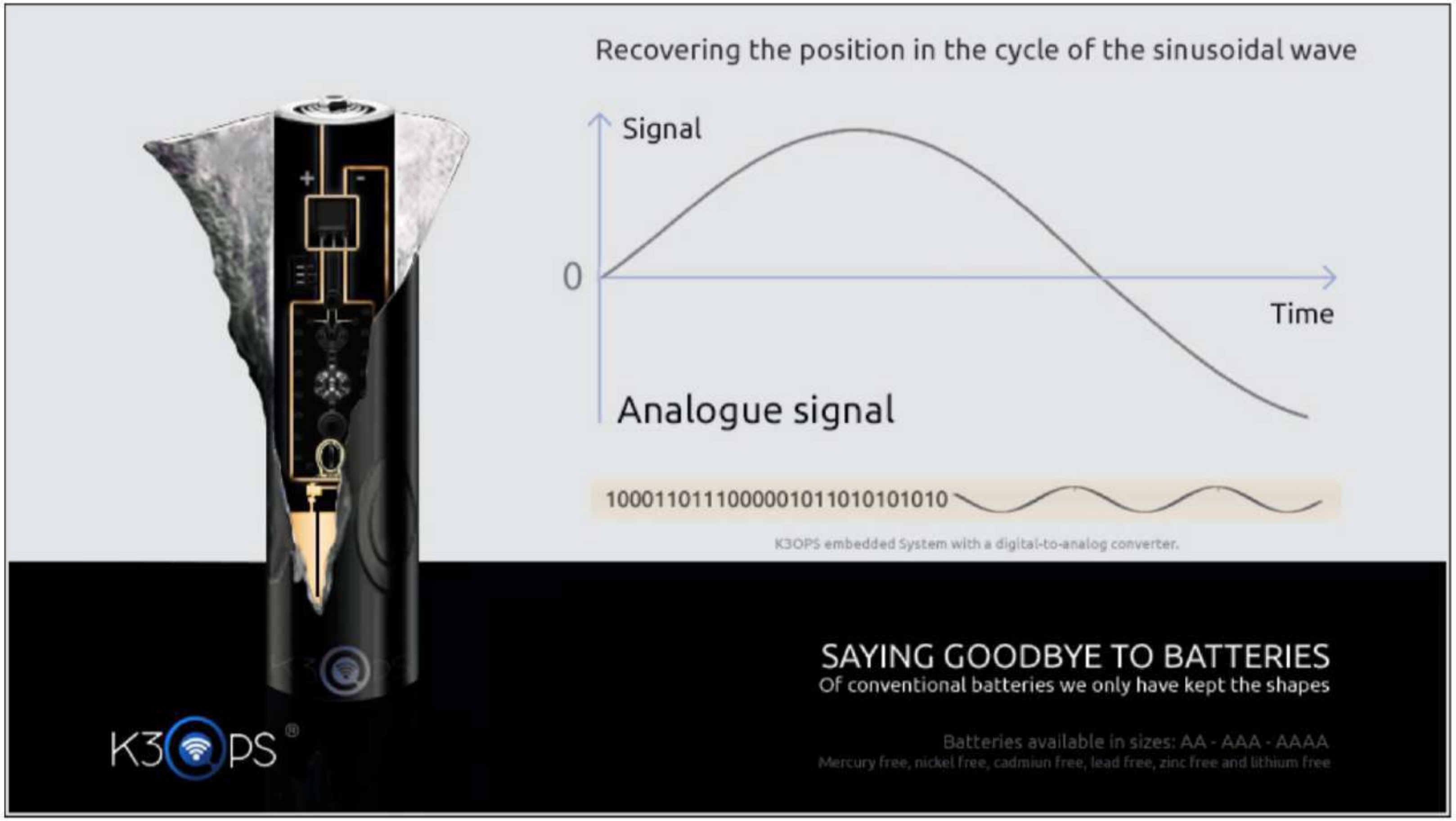
^^^liquid nails to plug the hole, to keep rain out

^^^view of the circuit , lid off

^^^ testing the cap 2.25volts (now at 2.81volts) with 3 antennas


^^^these are the pieces of copper that gets buried in the ground they syupply the (-) of electricity





An electromagnetic field uses the photon as an elementary particle to transmit force. It combines:

- **A magnetic field** *force resulting from the movement of loads μT.*
- **An electric field** *force created by the attraction of repulsion loads, measured in volts per meter - V/m.*

With an energy determined according to the speed of light, the RF are by far the best medium to transmit any kind of information.

The multiplication of wireless communications systems in our environment ensures sufficient microwave leakages to harvest from the ambiant and enough energy to convert into DC electricity. Electromagnetic fields are everywhere and since they carry energy, they became the best candidate to deliver an endless source of renewable energy.

$\vec{B}$ is the magnetic induction expressed in T refered to **Nikola Tesla**, "Father of Free Energy", which is at the origin of the electromagnetism.

Using meta-materials combined with nanotechnology has deeply increased the performance and miniaturization of rectennas embedded in K3OPS system. Our products operate autonomously, offering an endless supply of green energy in a respectful and environment-friendly approach.

1 - UNIQUE ID

Each K3OPS' product has a personal identification, which allows as well information exchange, management of the storage unit, the encryption protocols and remote control by means of applications dedicated to the different modes of system functions. This leads to a multitude of choices from direct power, power supply on demand or to power on a scheduled basis for Home Automation.

2 - THE ANTENNAS

Multilayer antennas network* - both wide-band and multi-band operation - working in cooperative relay scavenging ranges between 0.2 to 5.8 GHz (covering radiation from all of domestic appliances) and the use of other standard & specific protocol allowing signal isolation optimized for direct digital-to-analog conversion**.

3 - DIELECTRIC RESONATORS

Breaking the electric field symmetric in dielectric materials *** by acceleration of electrons under the action of specific frequencies, that warps the materials generating an electromagnetic field as a powerful resonator. Since a resonator is also a transmitter they make very efficient and also extremely tiny antennas.

4 - DYNAMIC FREQUENCIES SELECTION

Constant analysis of the environment based on any ambient changes, ensure self-correction of the frequencies to harvest in the appropriate source without interfering with any other wireless communication systems nearby.

5 - DOWNTIME POWER STAGES OPTIMIZED

Intelligent power management controlled by a microcontroller to optimize system-level power, an adaptive dead-time control between the phases with LP standby mode that shuts down most of the digital and analog circuitry and logarithmic step sizes between outputs with complex ultra-speed pulsed MrC digital modulation for low noise, increasing beam forming gain recovery.

6 - ASYMMETRY CORRECTION

The use of metamaterial for their electromagnetic properties, offer a signal isolation optimized for the asymmetry correction at the last stage of the harmonic in the ripples ensure a stable, efficient and a proper output DC.

** Rectenna invented in 1964 by William C. Brown*

*** Based from Alexander Graham Bell researches.*

**** Pierre Curie Dissymmetry Principle.*

EMF

K3OPS endlessly detects all ambient RF

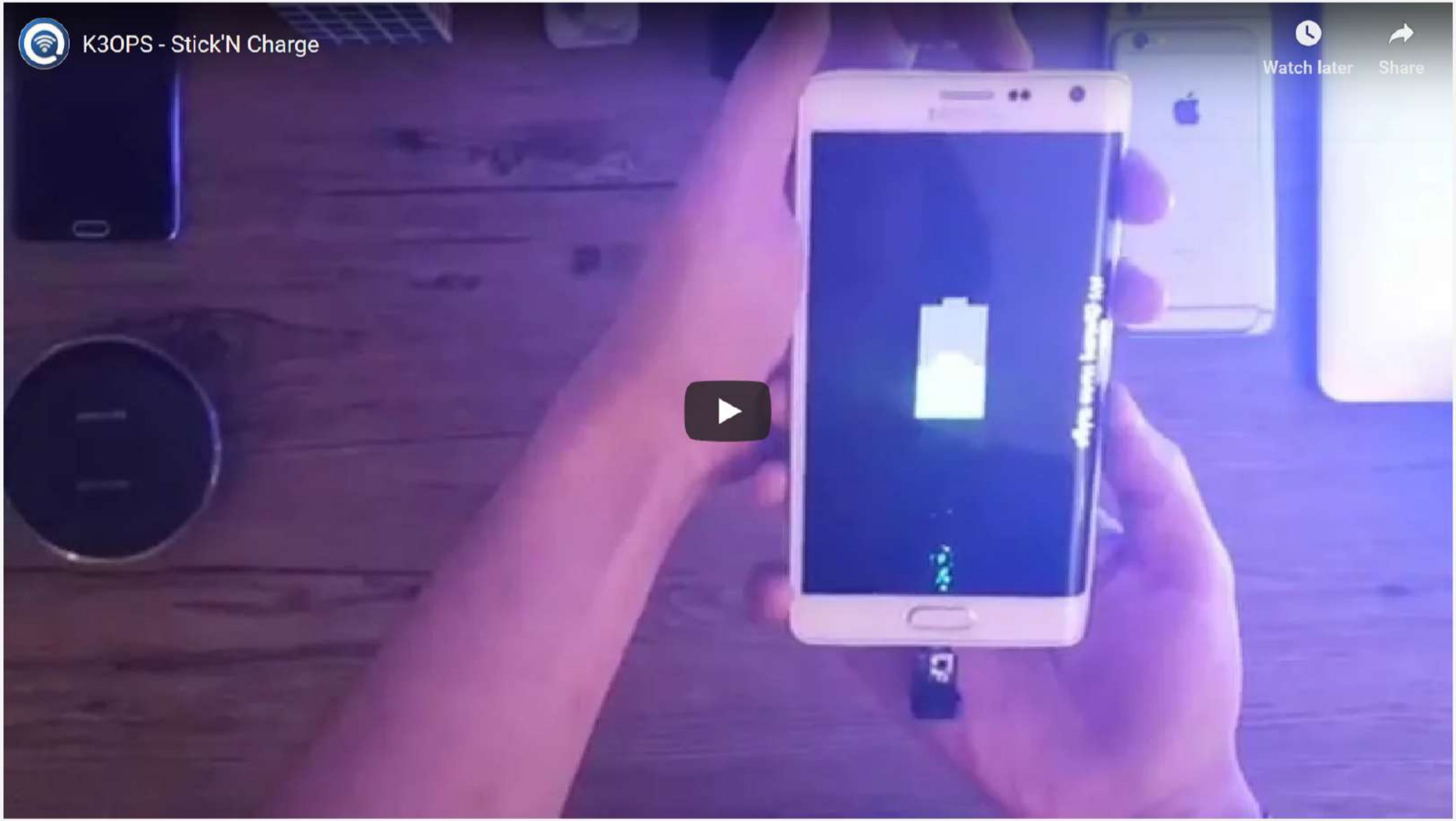
TO CONVERT

K3OPS converts RF to DC

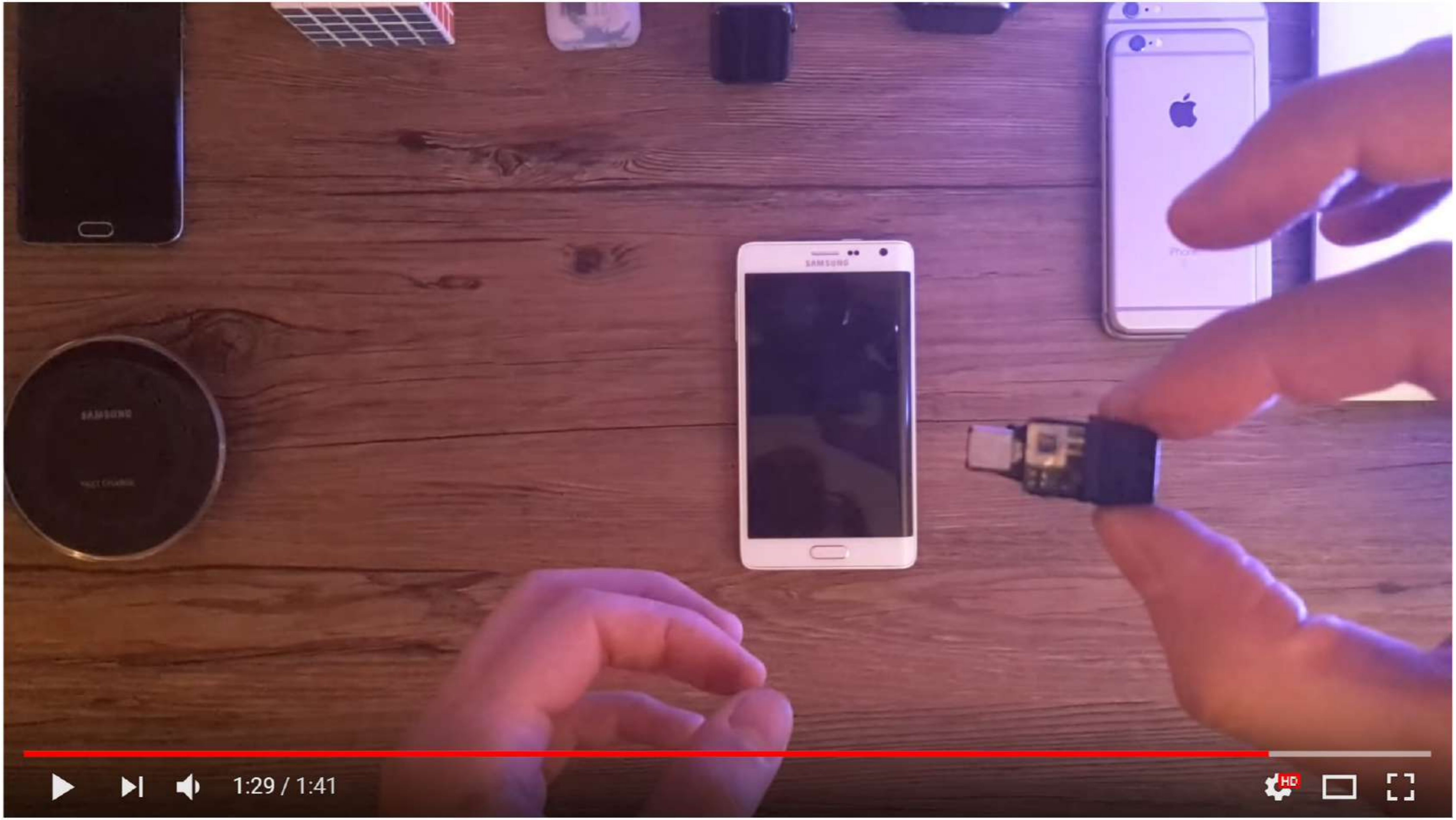
POWER

K3OPS runs or charges all electronic devices

Stick'N Charge™ provides a constant charge to any smartphones



Stick'N Charge™ to power source lights or cellphone with ambient RF



K3OPS - Stick'N Charge

OUR PRODUCTS

K3OPS BATTERY

AN ENDLESS SUPPLY OF ENERGY

That replaces all batteries. Any shapes of batteries including button cell

SQUID

THE WELLNESS WRISTBAND

A key element of education to cope with E-smog issues to develop healthy habits

K3-CASE

CHARGE YOUR PHONE WITH RF

You won't have to worry about the battery capacity or to seek for an outlet

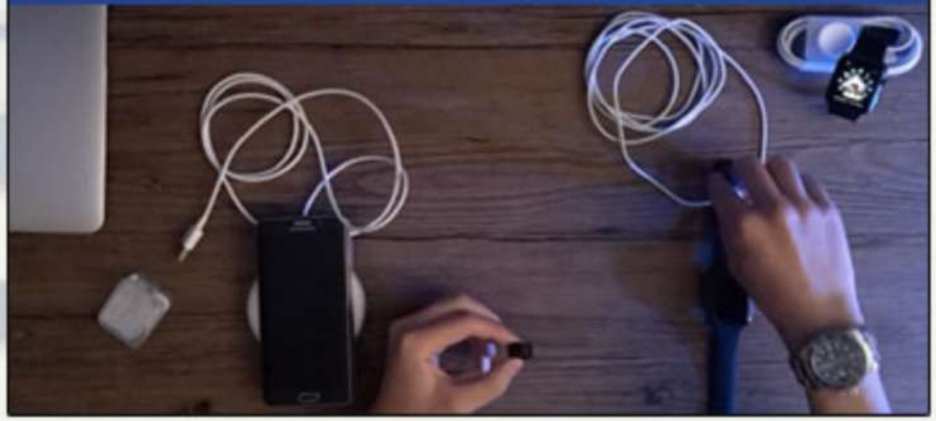
K3OPS ® is a registered mark under the number: 4096517 | SQUID WELLNESS WRISTBAND ® is a registered trade mark - Number: 4085469

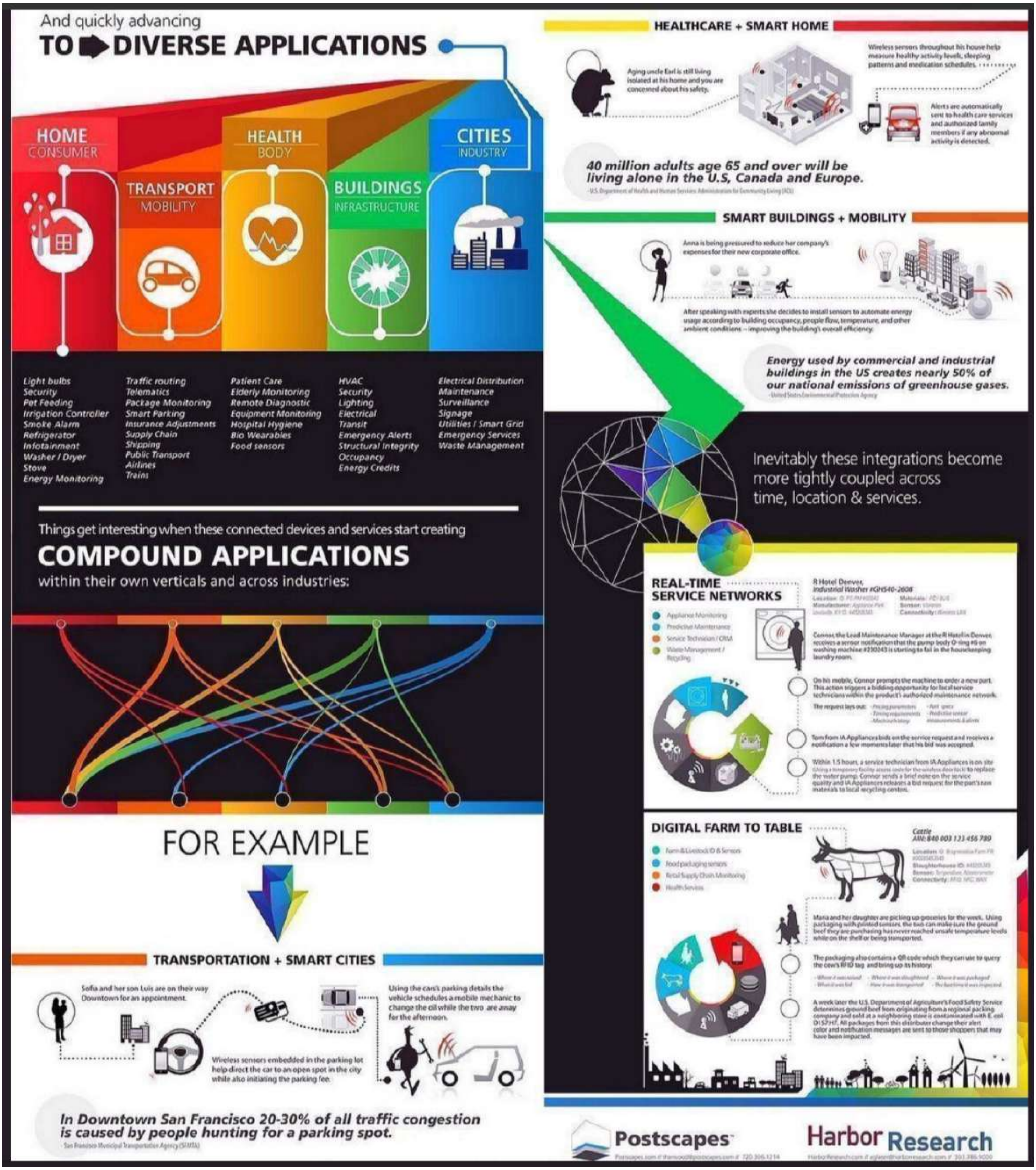
STICK'N CHARGE - ENERGY ON THE MOVE

Stick'N Charge is the most efficient RF Energy Harvester in the market.

Energy On the Move

Offering a never-ending supply of green energy to power or to charge any kind of smartphones and all connected devices.




And quickly advancing
TO DIVERSE APPLICATIONS
HOME
CONSUMER
TRANSPORT
MOBILITY
HEALTH
BODY
BUILDINGS
INFRASTRUCTURE
CITIES
INDUSTRY
Light bulbs
Security
Pet Feeding
Irrigation Controller
Smoke Alarm
Refrigerator
Infotainment
Washer / Dryer
Stove
Energy Monitoring
Traffic routing
Telematics
Package Monitoring
Smart Parking
Insurance Adjustments
Supply Chain
Shipping
Public Transport
Airlines
Trains
Patient Care
Elderly Monitoring
Remote Diagnostic
Equipment Monitoring
Hospital Hygiene
Bio Wearables
Food sensors
HVAC
Security
Lighting
Electrical
Transit
Emergency Alerts
Structural Integrity
Occupancy
Energy Credits
Electrical Distribution
Maintenance
Surveillance
Signage
Utilities / Smart Grid
Emergency Services
Waste Management
Things get interesting when these connected devices and services start creating
COMPOUND APPLICATIONS
within their own verticals and across industries:
FOR EXAMPLE
TRANSPORTATION + SMART CITIES
Sofia and her son Luis are on their way Downtown for an appointment.
Wireless sensors embedded in the parking lot help direct the car to an open spot in the city while also initiating the parking fee.
Using the car's parking details the vehicle schedules a mobile mechanic to change the oil while the two are away for the afternoon.
In Downtown San Francisco 20-30% of all traffic congestion is caused by people hunting for a parking spot.
HEALTHCARE + SMART HOME
Aging uncle Earl is still living isolated at his home and you are concerned about his safety.
Wireless sensors throughout his house help measure healthy activity levels, sleeping patterns and medication schedules.
Alerts are automatically sent to health care services and authorized family members if any abnormal activity is detected.
40 million adults age 65 and over will be living alone in the U.S, Canada and Europe.
SMART BUILDINGS + MOBILITY
Anna is being pressured to reduce her company's expenses for their new corporate office.
After speaking with experts she decides to install sensors to automate energy usage according to building occupancy, people flow, temperature, and other ambient conditions – improving the building's overall efficiency.
Energy used by commercial and industrial buildings in the US creates nearly 50% of our national emissions of greenhouse gases.
Inevitably these integrations become more tightly coupled across time, location & services.
REAL-TIME SERVICE NETWORKS
DIGITAL FARM TO TABLE
Postscapes
Harbor Research

Converting Radio waves into electrical power is not a new concept. The so called rectenna was conceived by William C. Brown back in 1964. Rectennas are also widely used today. RFID tags contain a small rectenna to supply the electronics with power when close to a scanner. K3OPS, a startup founded by Xin Wei and Alexandre Despallieres developed a rectenna that is powerful enough to charge a smartphone like the Galaxy S6.

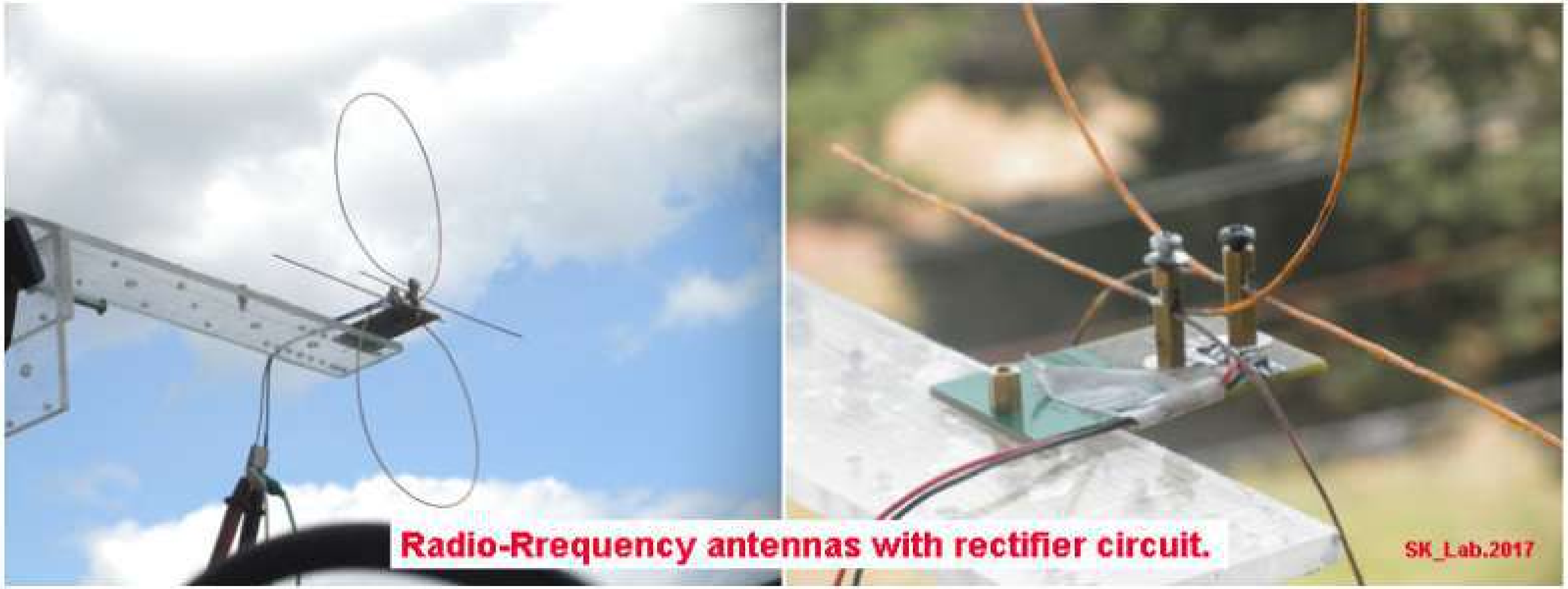
Radio waves are everywhere this days with the abundance of mobile networks and Wi-fi hotspots. Technology that can efficiently harvest that ambient energy can dramatically change how gadgets are powered. K3OPS works on RF energy harvesting smartphone case K3-Case and also on standard battery with integrated RF harvesting technology.

The K3Ops RF energy harvesting technology can tap the energy of WiFi, 4G, Bluetooth, LTE radio waves. As miniaturization will evolve in the future RF harvesting could become the power source for wearable devices such as smartwatches and fitness trackers.

K3Ops will launch the K3-Case in September. The RF energy harvesting smartphone case only works with smartphones that have a QI compliant wireless charging feature like the Galaxy S6. There will be options to configure the K3-Case via an app to optimize the frequencies the case will harvest for energy to avoid interference with other devices.

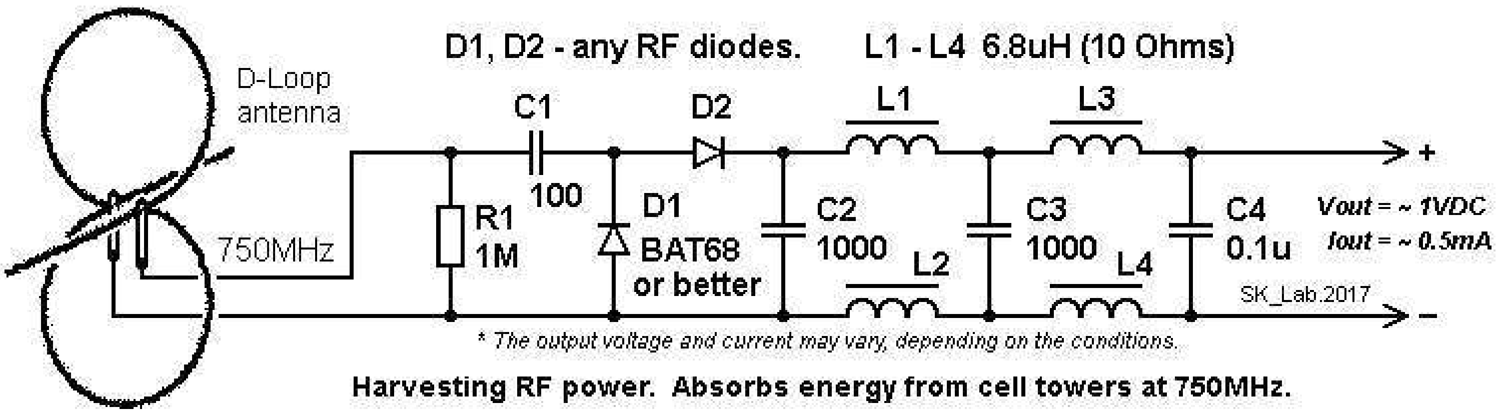
K3Ops' Xin Wei will be a speaker at the upcoming Wearable-Technologies Conference in San Francisco in July. This presentation will be one of the highlights of this conference. We learned that attendees of the K3Ops presentation will be receiving a K3-Case. It will be interesting to learn how far the K3Ops RF energy harvesting technology has been developed into a consumer ready product.

On the banner, two '**Dual-Loop**' directional antennas, designed specifically to collect power at 750MHz. One is connected to 100uA (700Ohms) head, and the average current you can see on it. Both antennas have 'on-board' rectifiers.



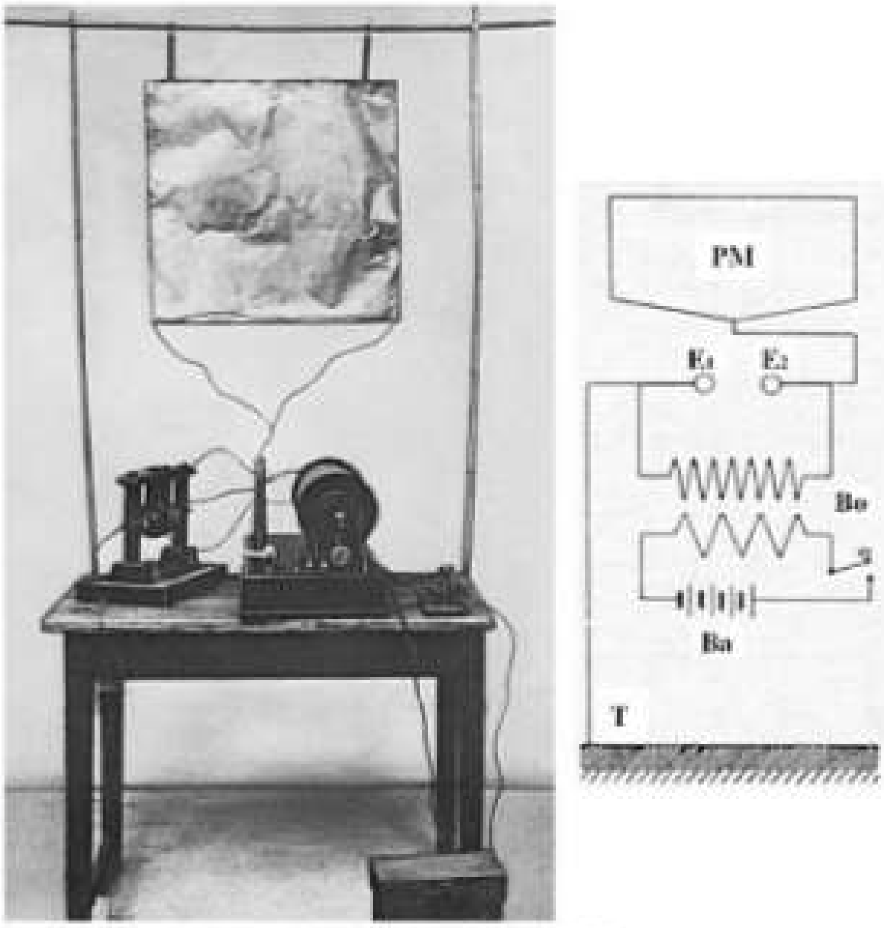
Reality is not as good as we would like. One antenna produces about 1 volt (at 10MOhms), and a current of about 0,4 mA (at 700Ohms).

The circuit is simple as a crystal receiver. Diodes with capacitors work as a voltage doubler (rectifier). The remaining inductors and capacitors isolate the output from high frequency.

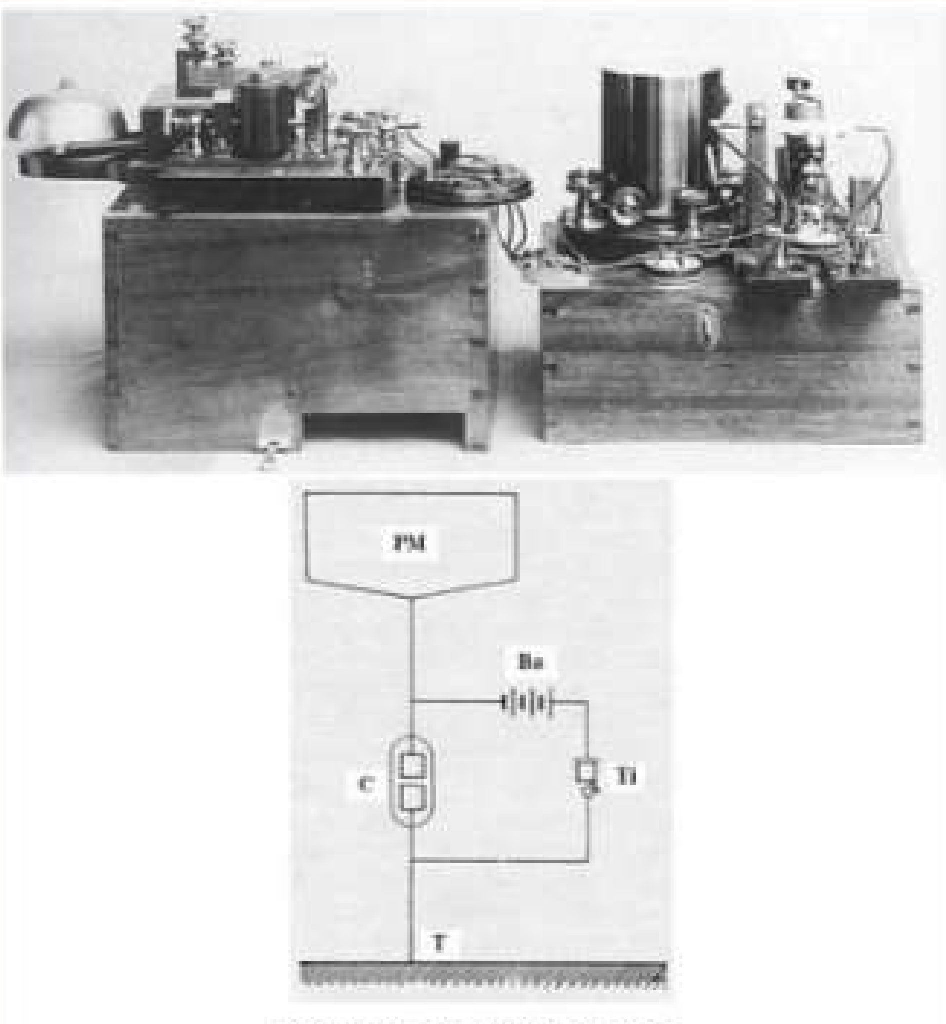


Harvesting RF power. Absorbs energy from cell towers at 750MHz.

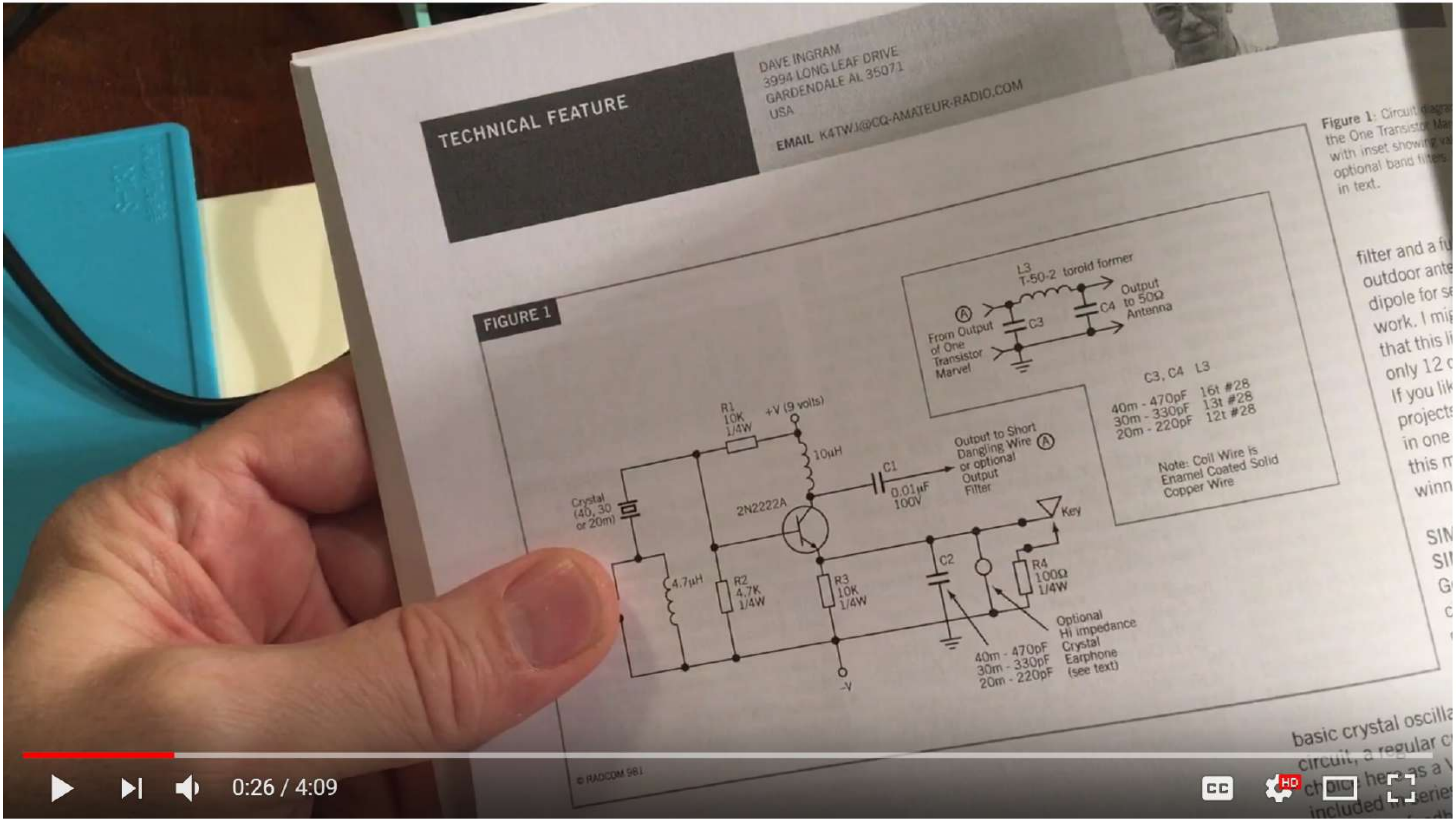
Any RF diodes with junction capacitance less then 1.5pF will be suitable for this application. See the end of this page for a suitable choice.



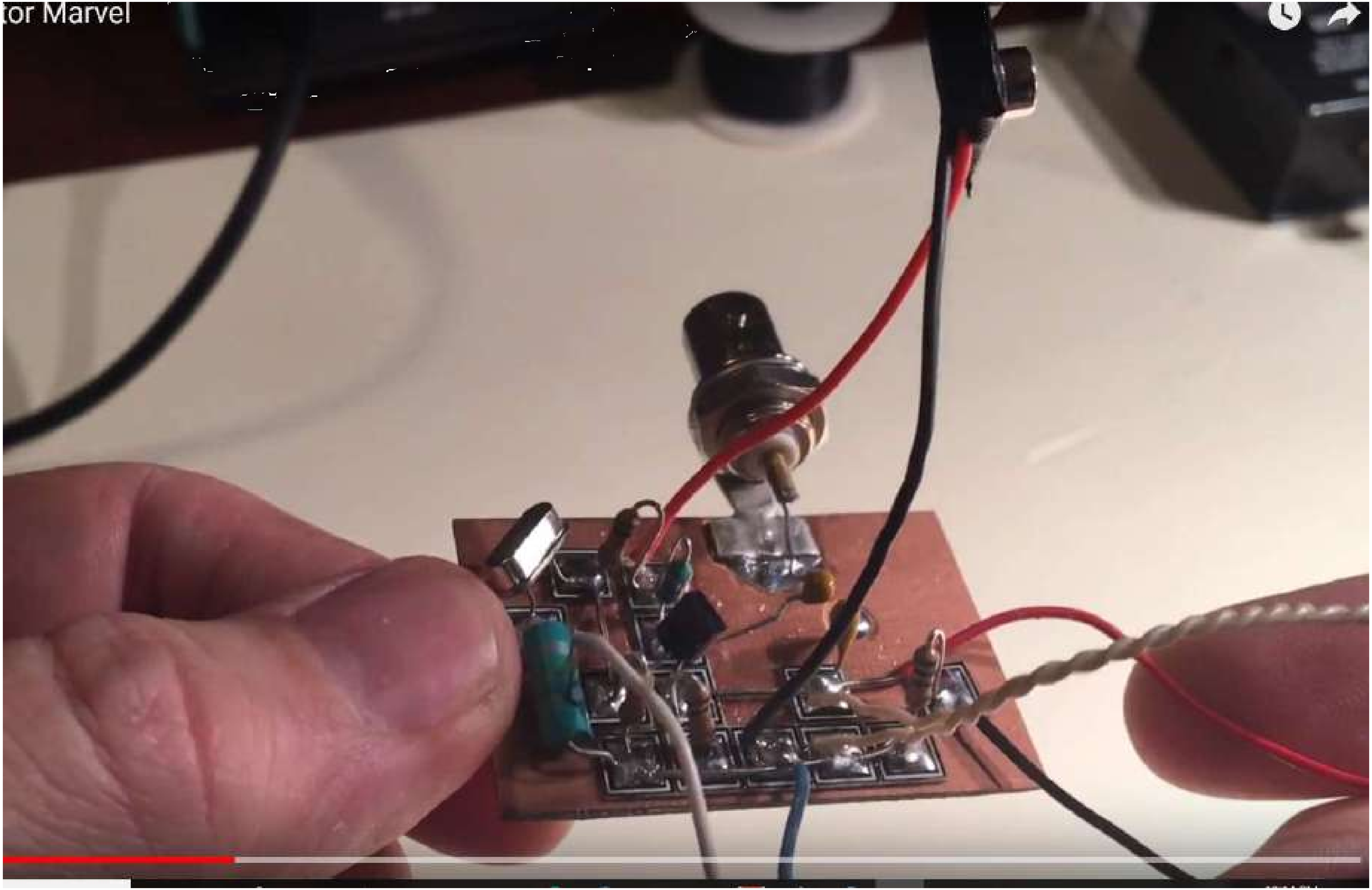
Transmisor Marconi, c. 1895.

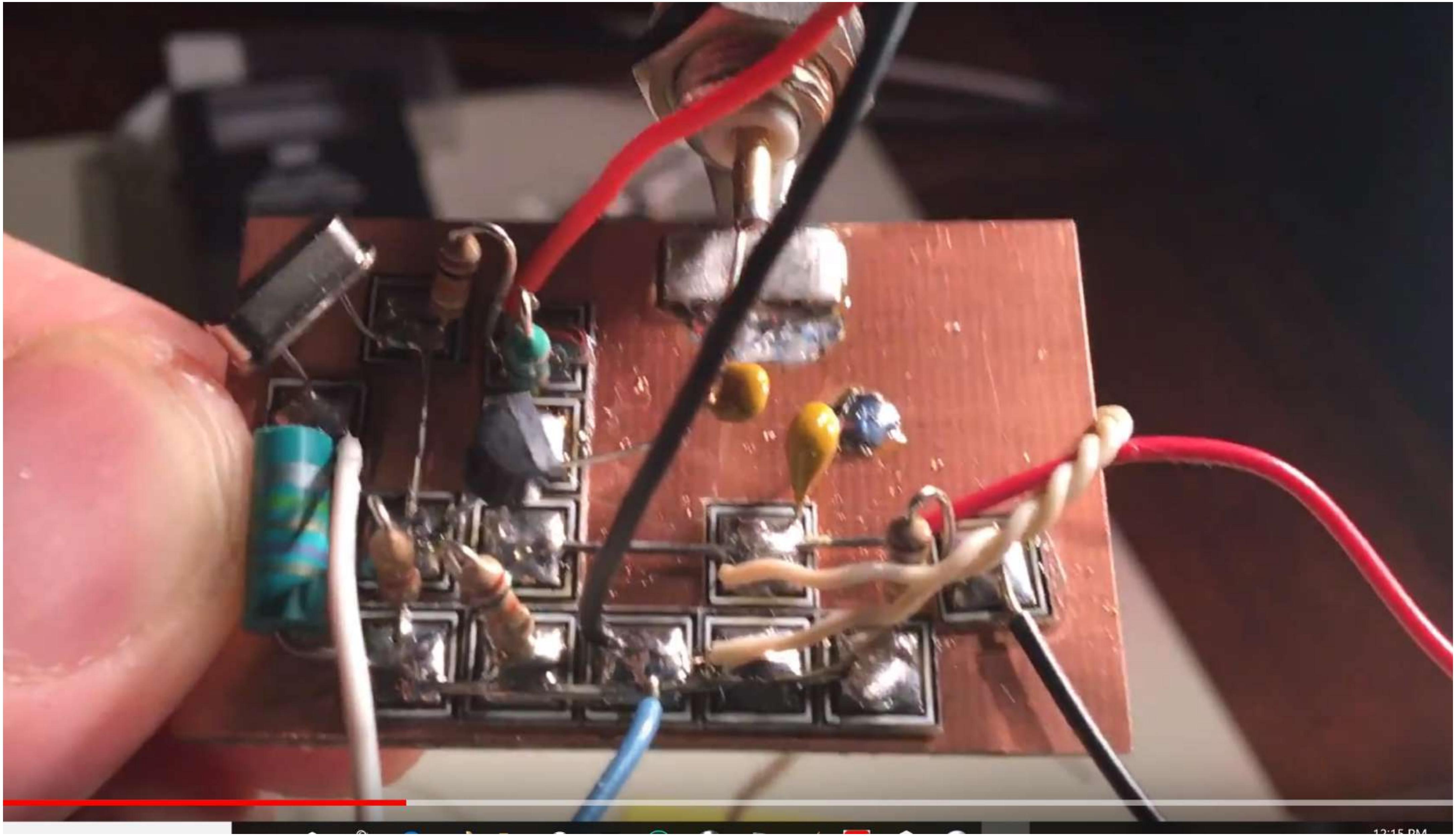


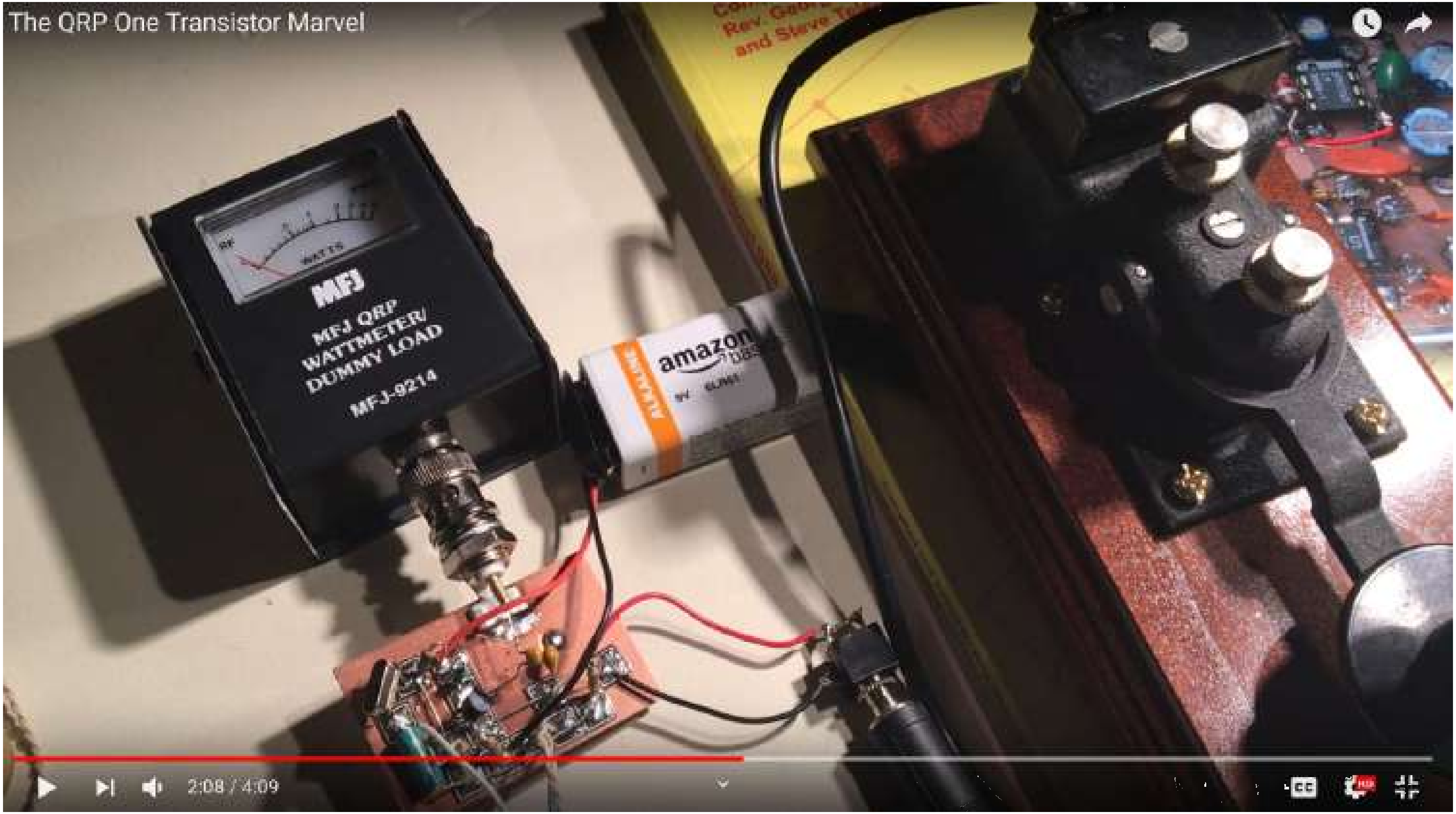
Receptor Marconi, c. 1895.



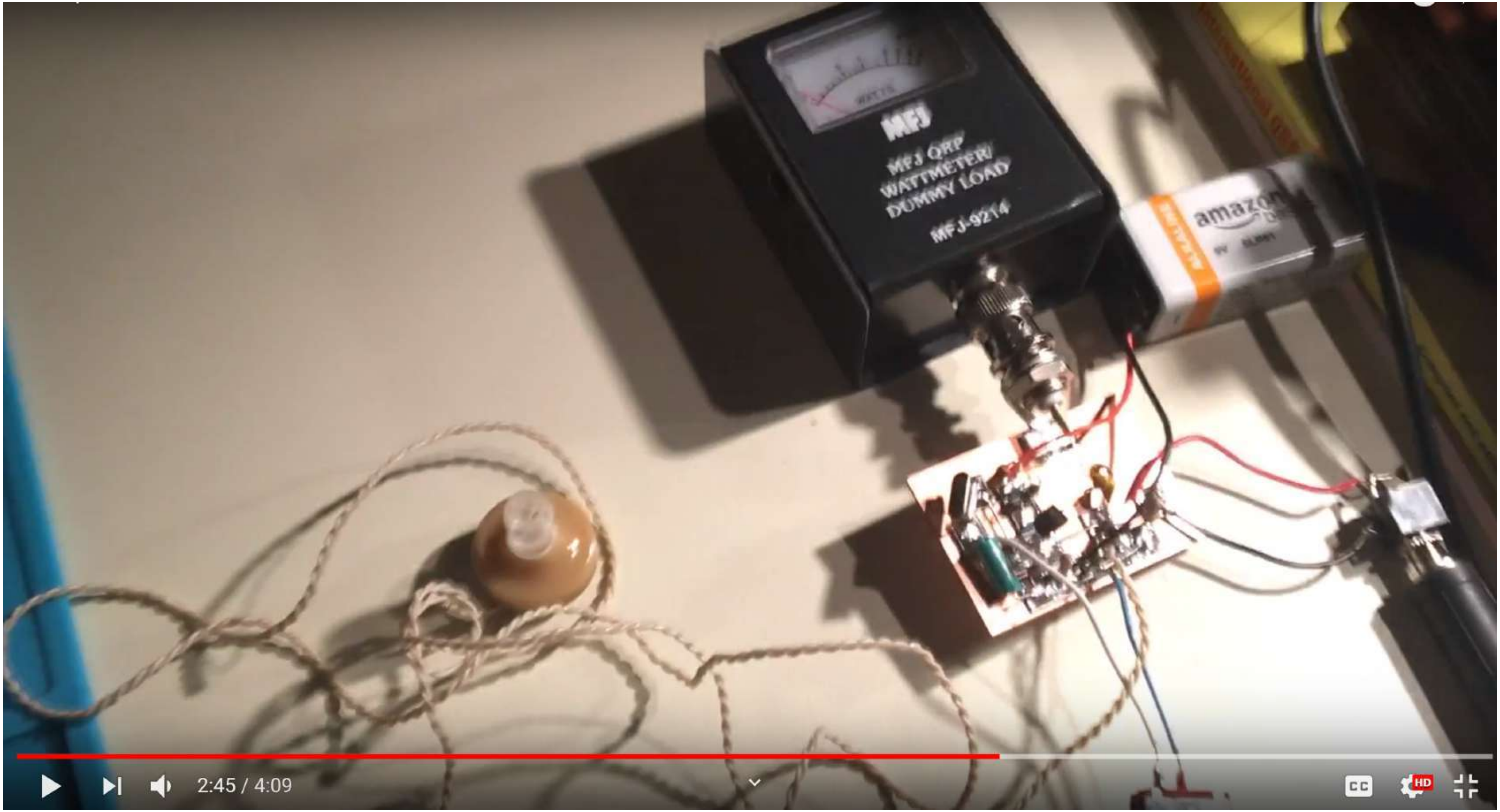
The QRP One Transistor Marvel

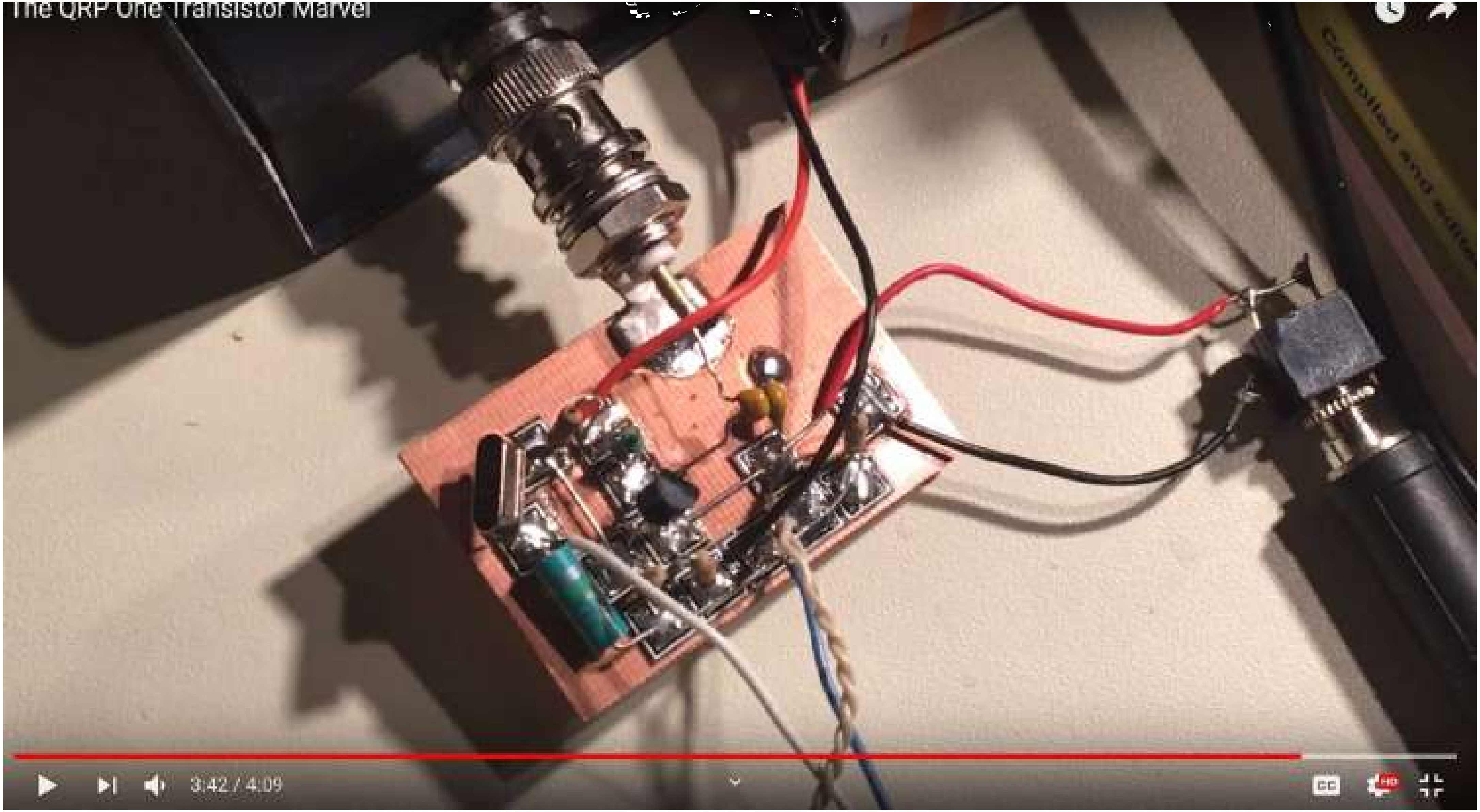

tor Marvel

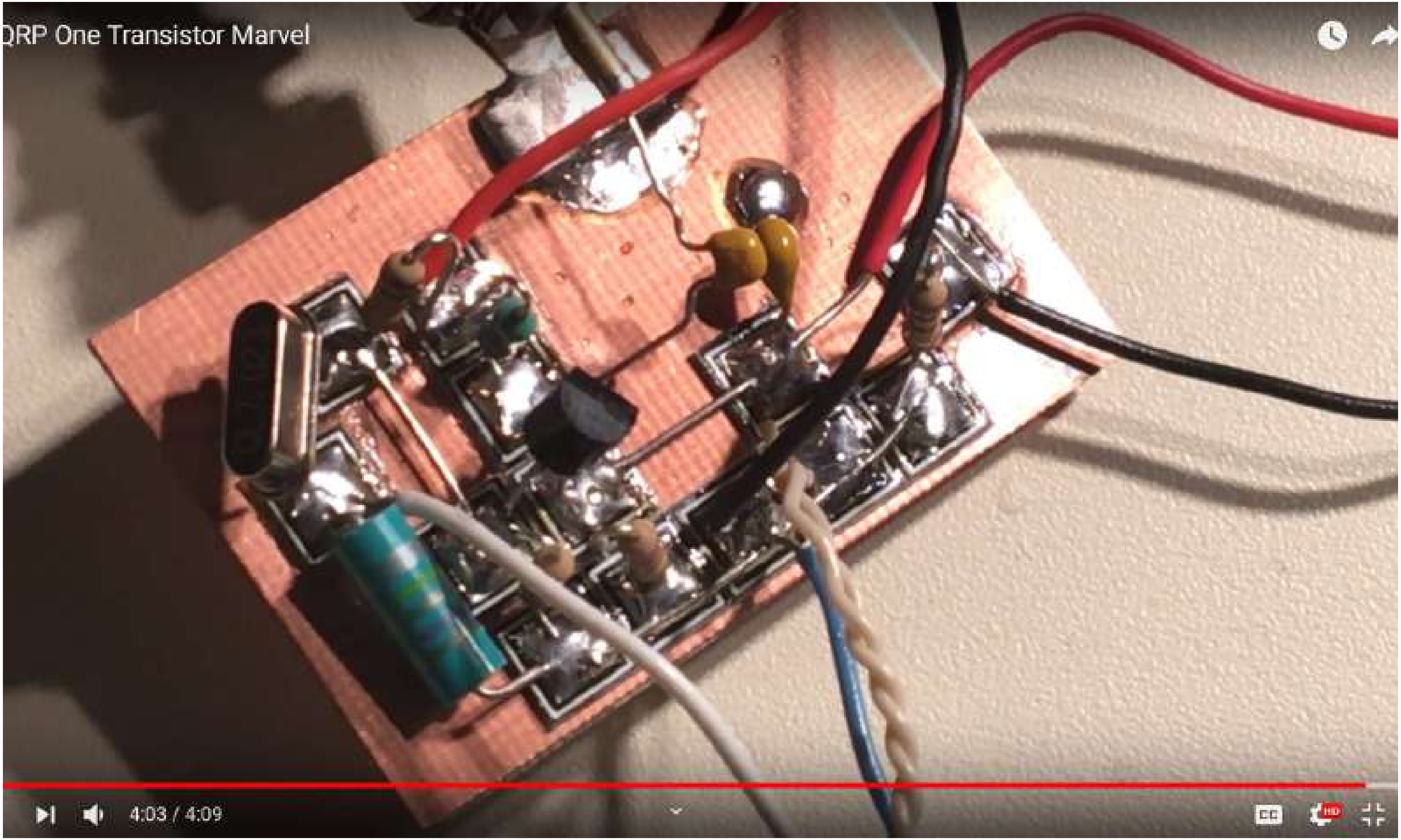




The QRP One Transistor Marvel
MFJ
MFJ QRP
WATTMETER/
DUMMY LOAD
MFJ-9214
WATTS
amazon
ALKALINE
9V
2:08 / 4:09


MFJ
MFJ QRP
WATTMETER/
DUMMY LOAD
MFJ-9214
amazon
2:45 / 4:09
HD

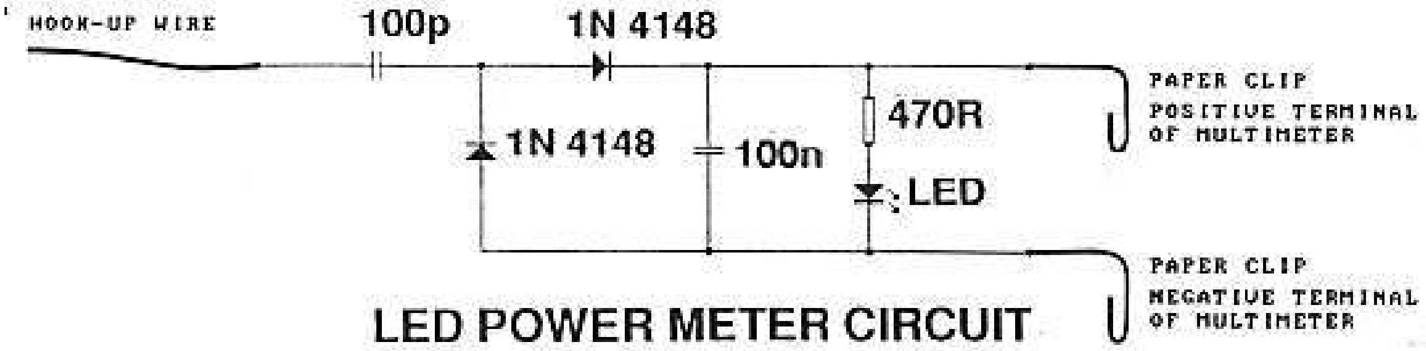

The QRP One Transistor Marvel
3:42 / 4:09
Compiled and


QRP One Transistor Marvel
4:03 / 4:09

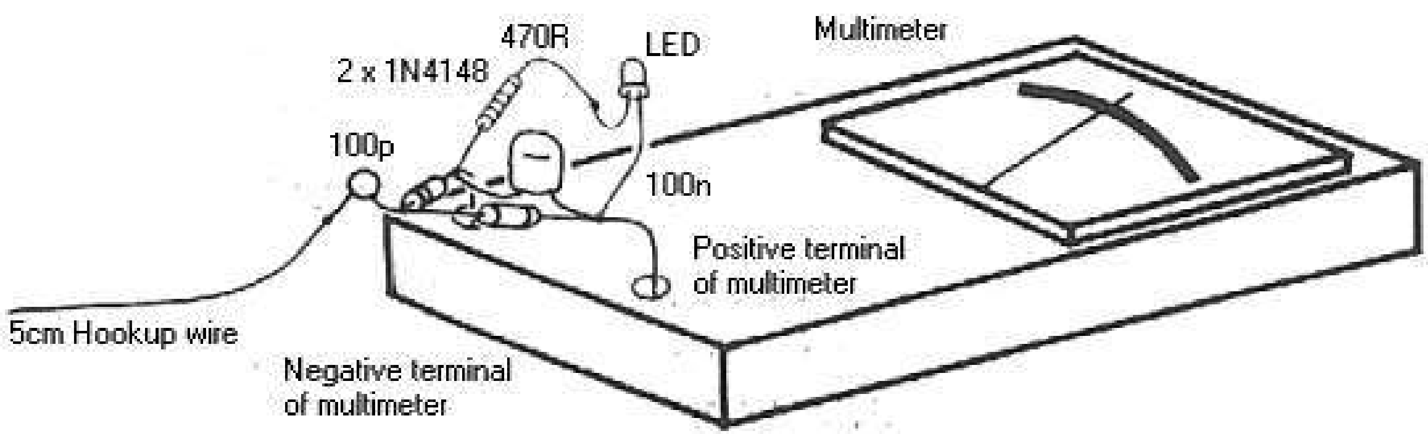
What you will need:

- 1 x 470 ohm resisitor
- 1 x 100p ceramic capacitor
- 1 x 100n greencap capacitor
- 2 x 1N4148 signal diodes
- 1 x 5mm red LED
- 1 x 5cm hook-up wire
- 2 x paper clips

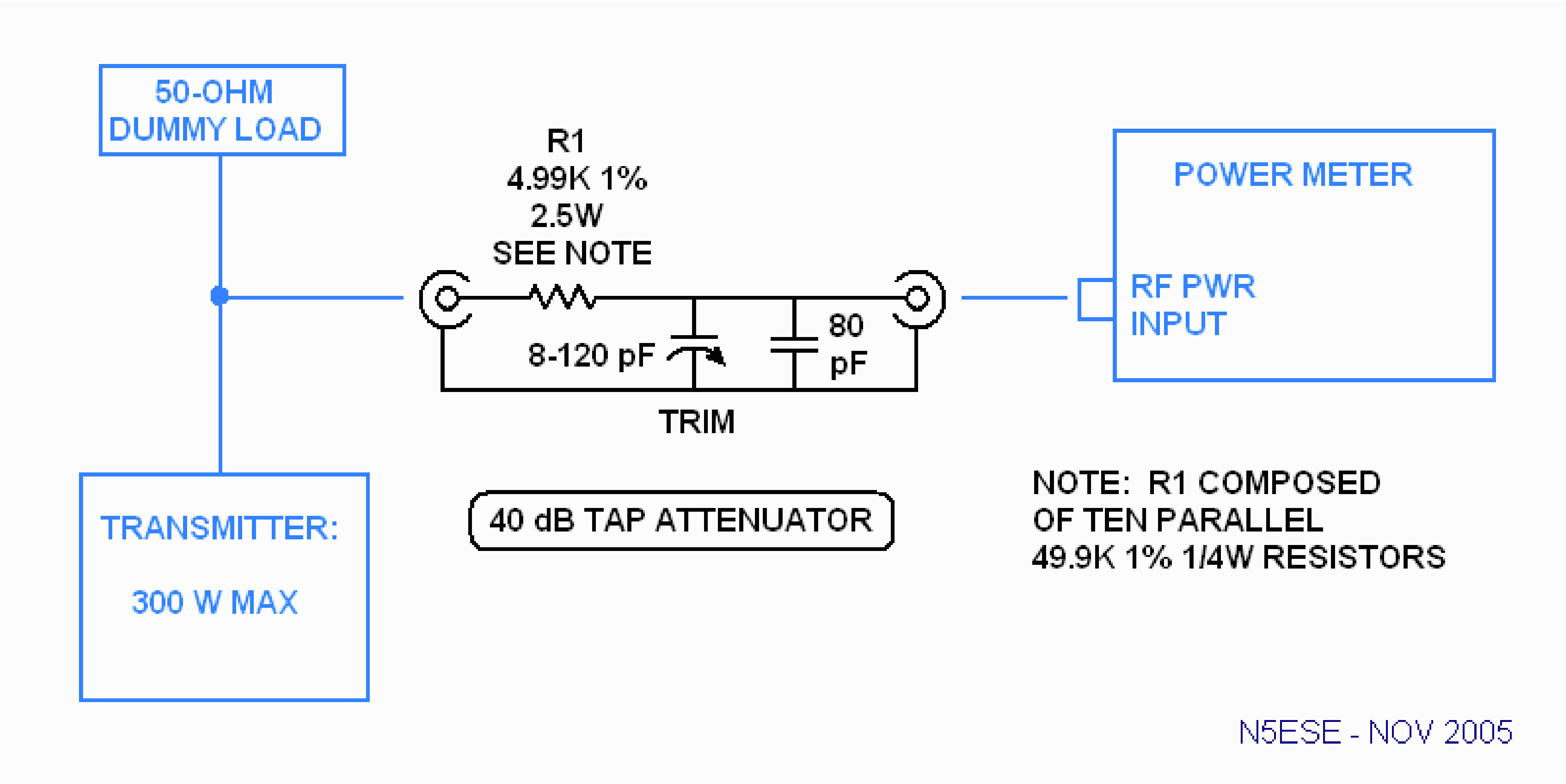
Build the circuit up as shown below:

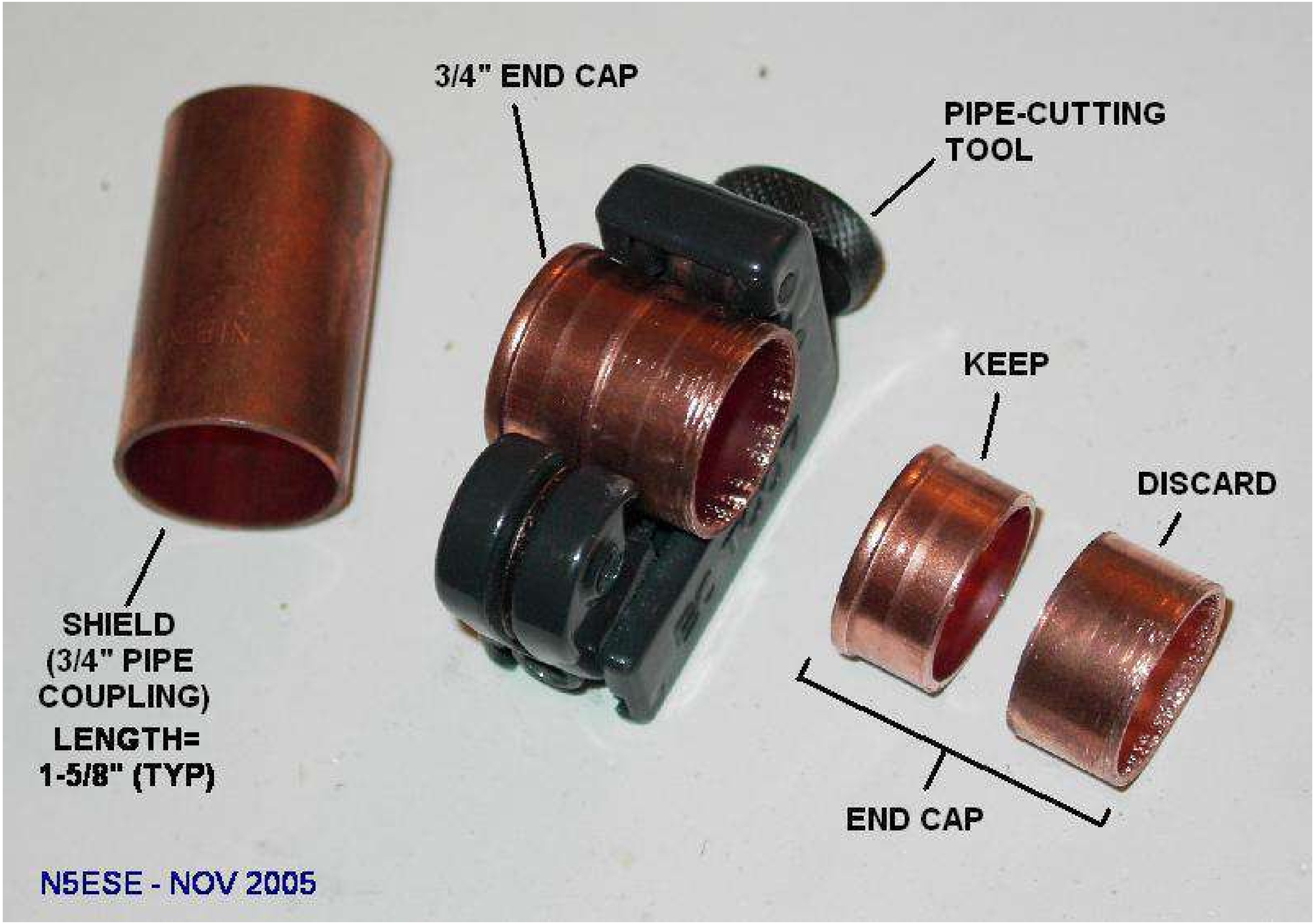


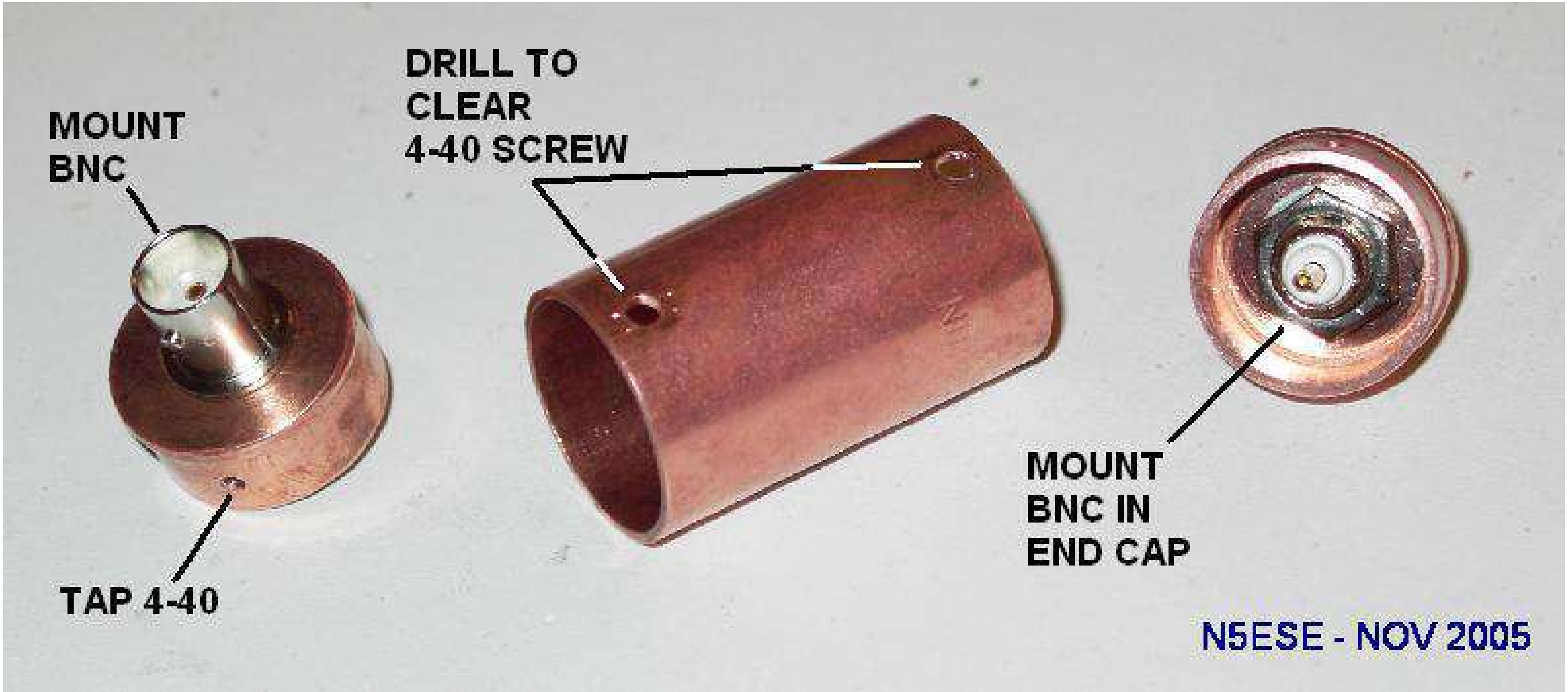
LED POWER METER CIRCUIT

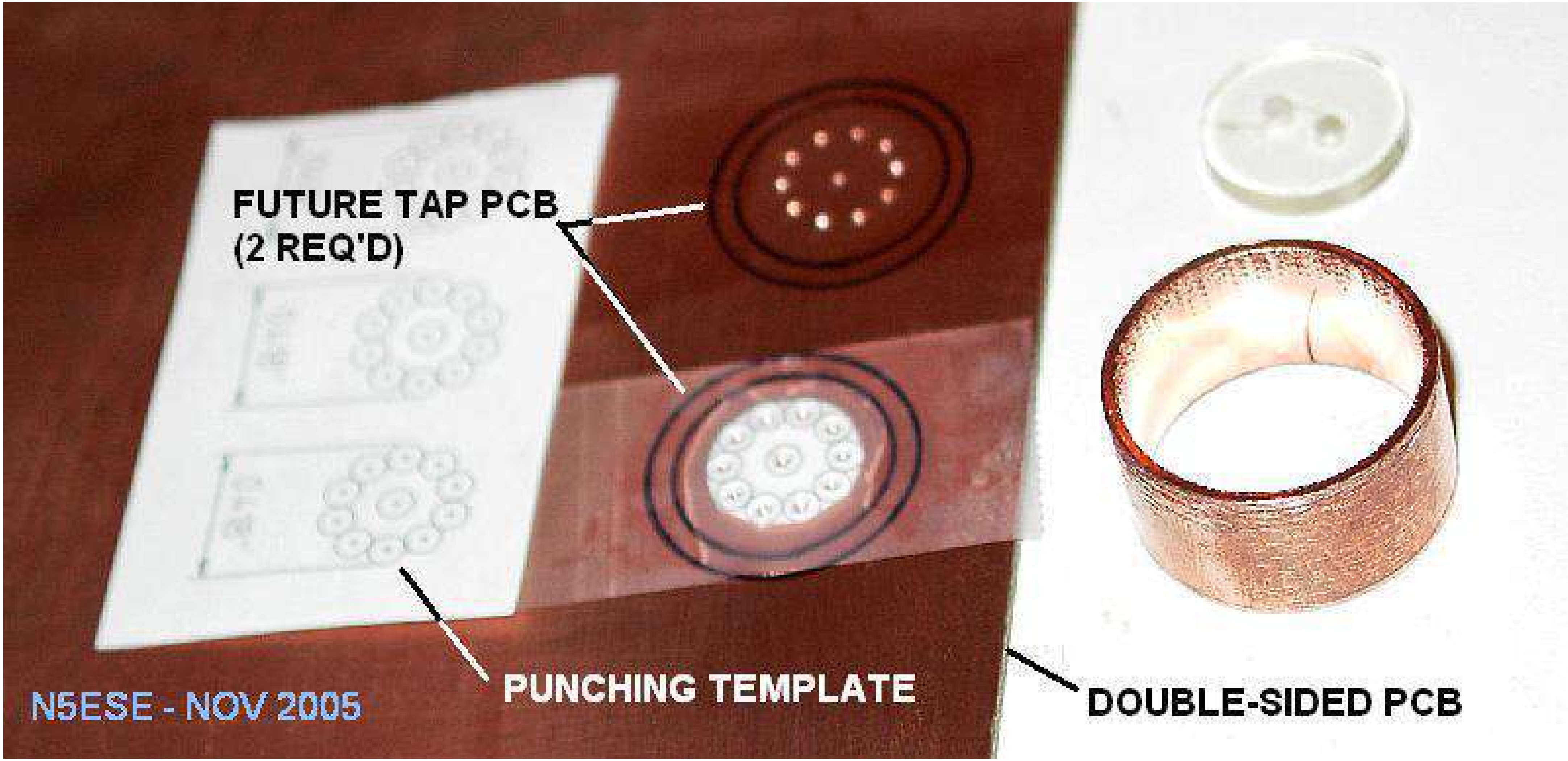


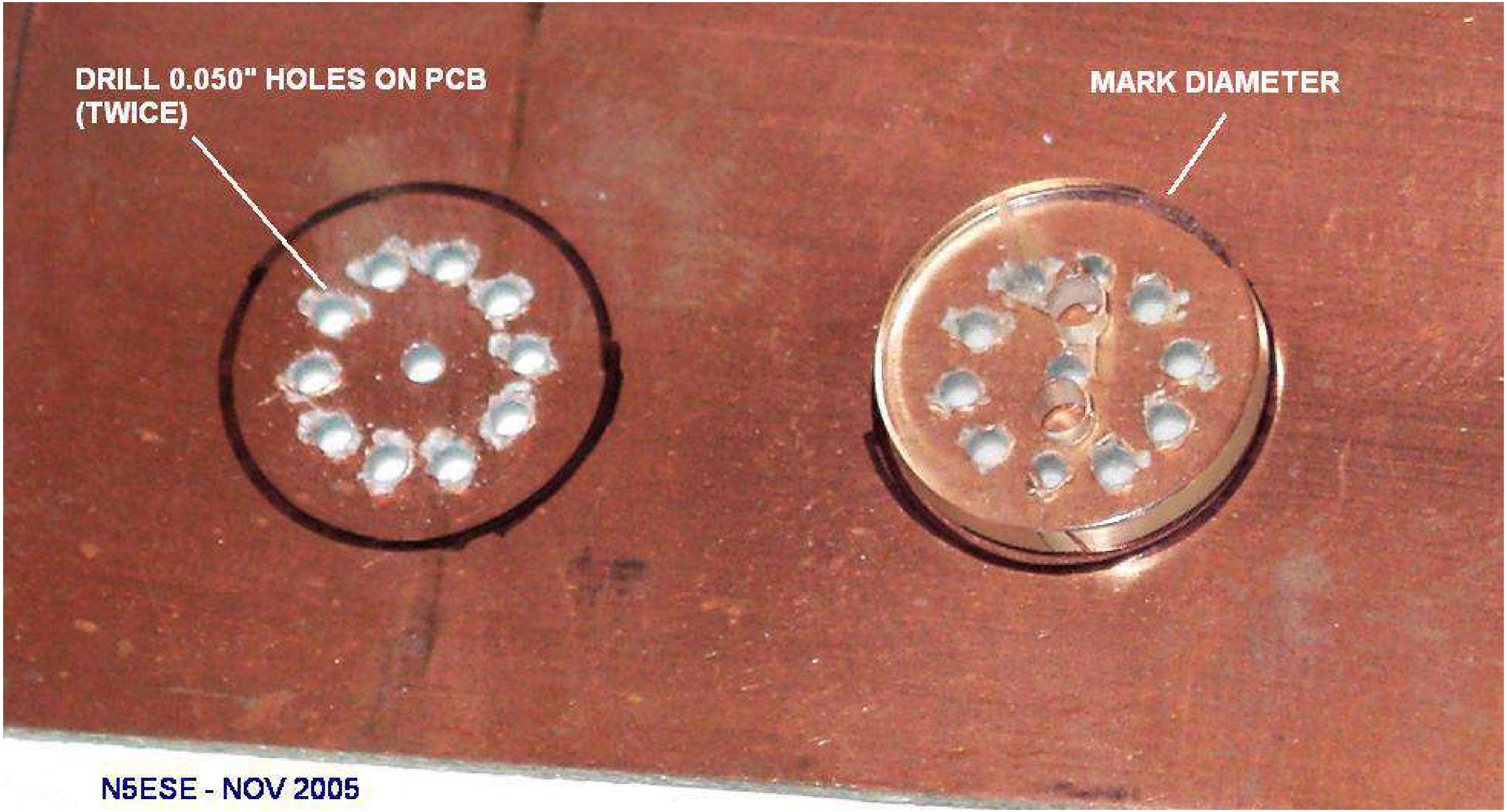
N5ESE - NOV 2005


50-OHM
DUMMY LOAD
R1
4.99K 1%
2.5W
SEE NOTE
8-120 pF
TRIM
80
pF
POWER METER
RF PWR
INPUT
TRANSMITTER:
300 W MAX
40 dB TAP ATTENUATOR
NOTE: R1 COMPOSED
OF TEN PARALLEL
49.9K 1% 1/4W RESISTORS
N5ESE - NOV 2005

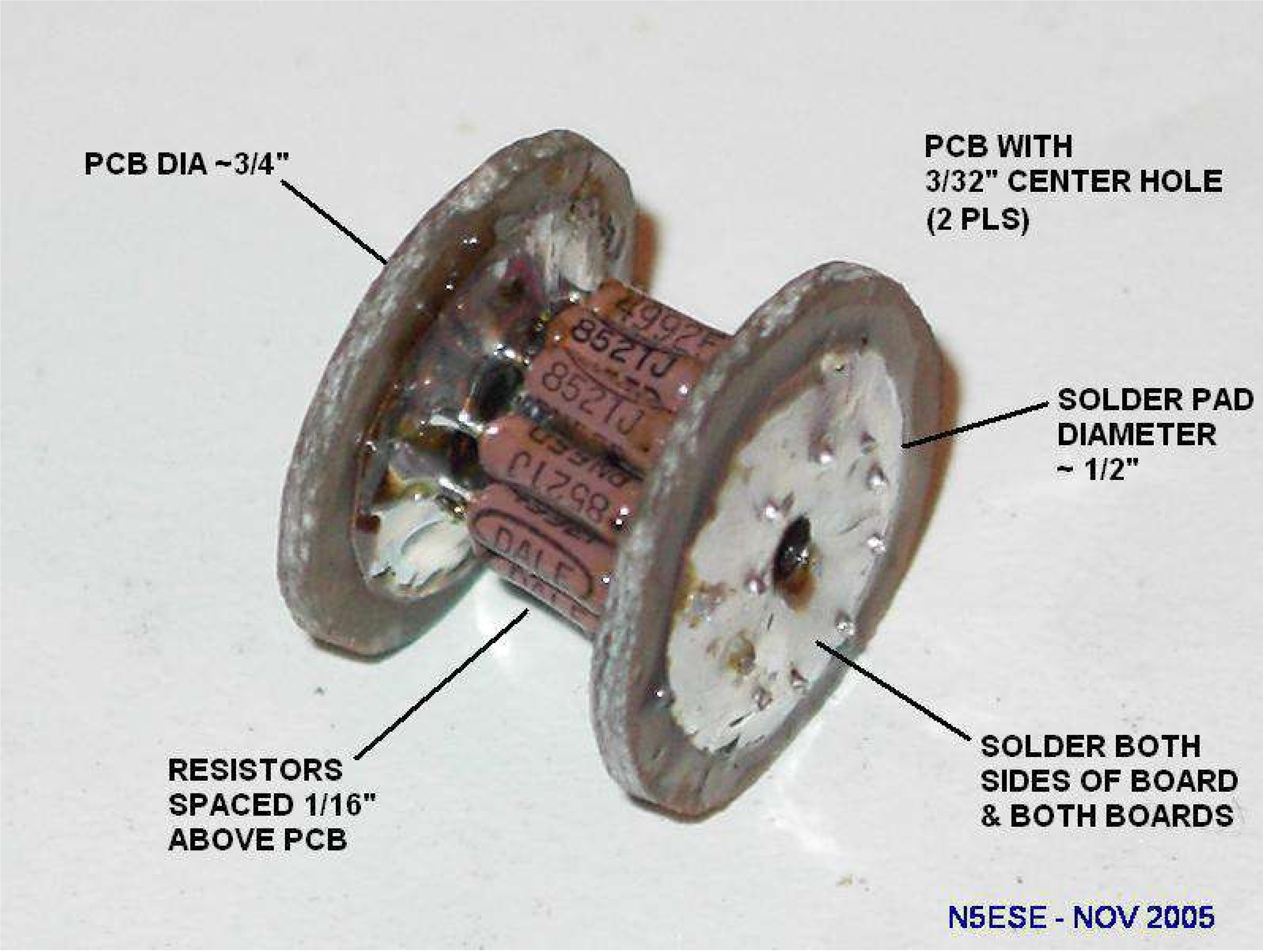

3/4" END CAP
PIPE-CUTTING
TOOL
KEEP
DISCARD
SHIELD
(3/4" PIPE
COUPLING)
LENGTH=
1-5/8" (TYP)
END CAP
N5ESE - NOV 2005

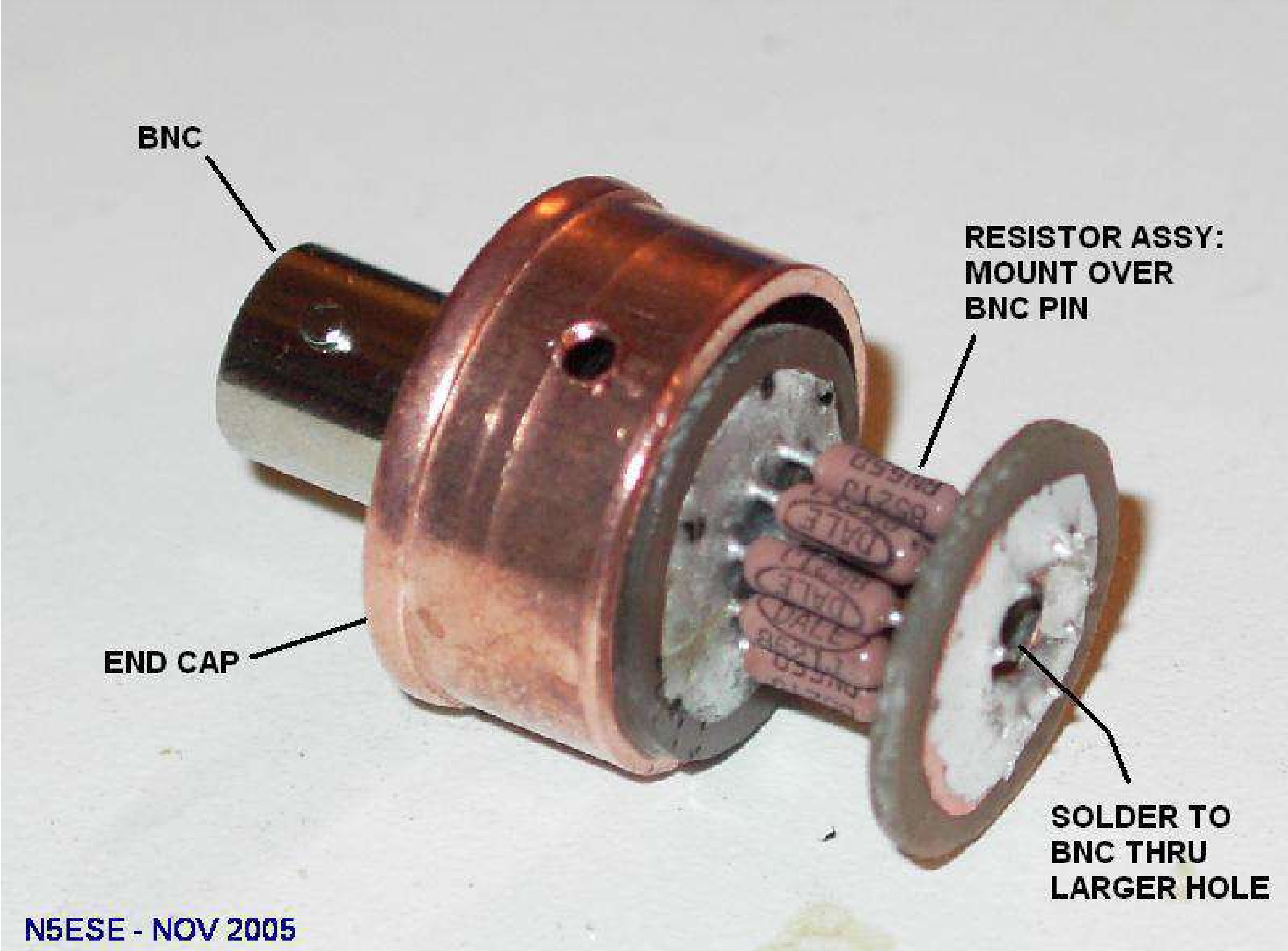

MOUNT
BNC
DRILL TO
CLEAR
4-40 SCREW
TAP 4-40
MOUNT
BNC IN
END CAP
N5ESE - NOV 2005

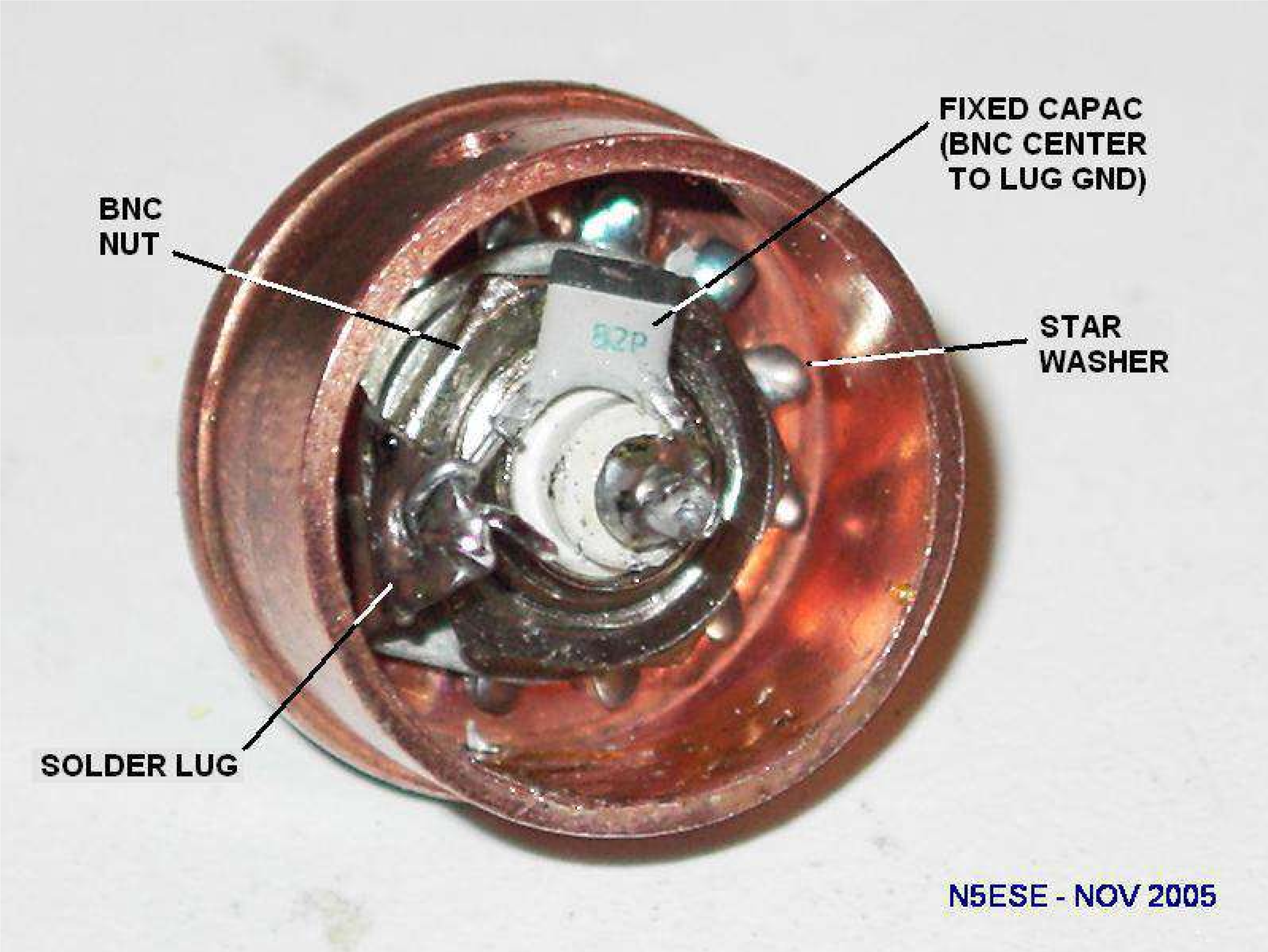

FUTURE TAP PCB
(2 REQ'D)
PUNCHING TEMPLATE
DOUBLE-SIDED PCB
N5ESE - NOV 2005

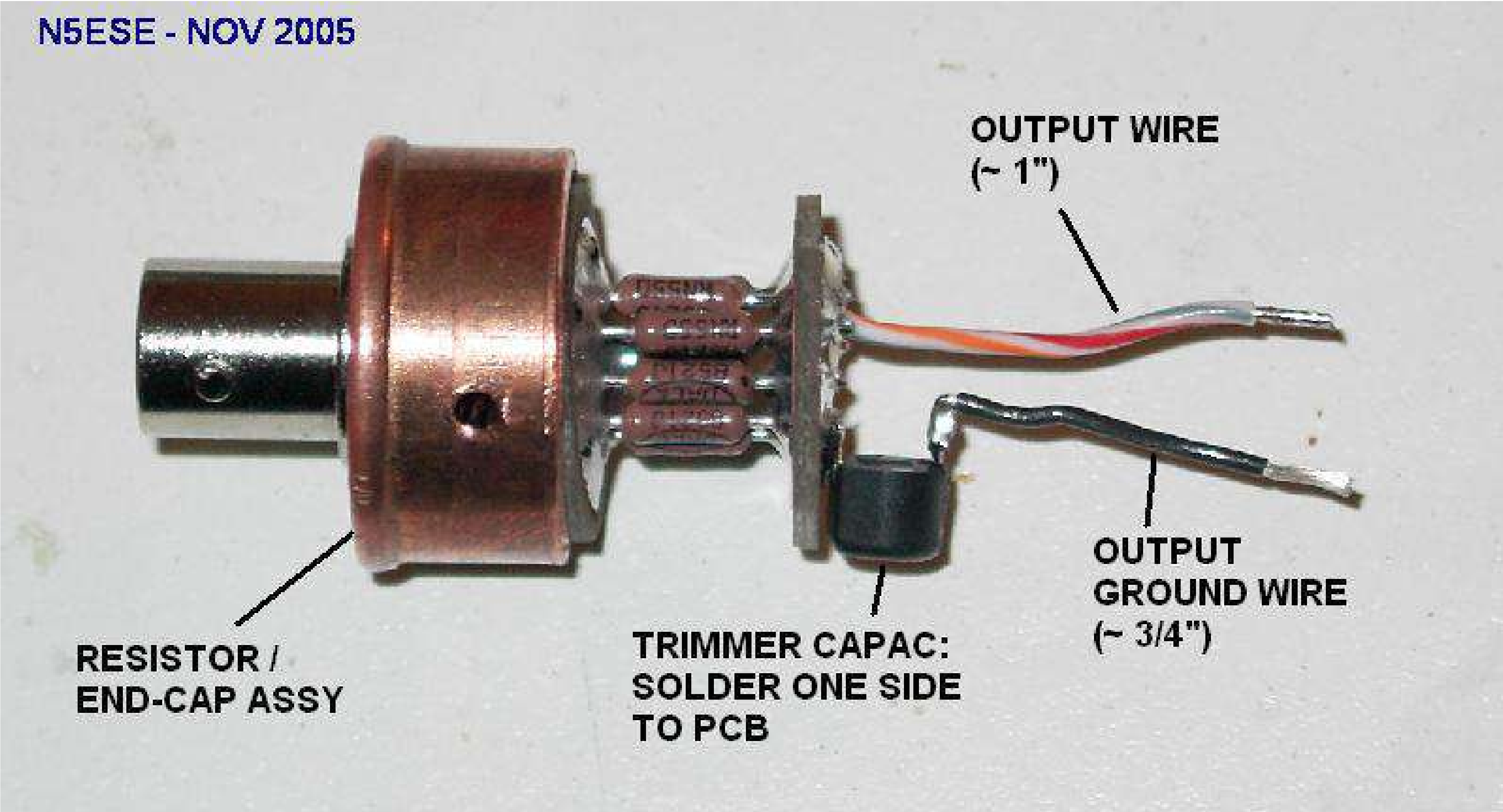

DRILL 0.050" HOLES ON PCB
(TWICE)
MARK DIAMETER
N5ESE - NOV 2005

#186
Flux-Pen
ROSIN FLUX, TYPE RMA
Do not take internally.
KEEP OUT OF REACH OF
CUT, CLEAN,
AND FLUX
PCB (BOTH SIDES)
REMOVE COPPER
AROUND EDGE
(BOTH SIDES)
N5ESE - NOV 2005

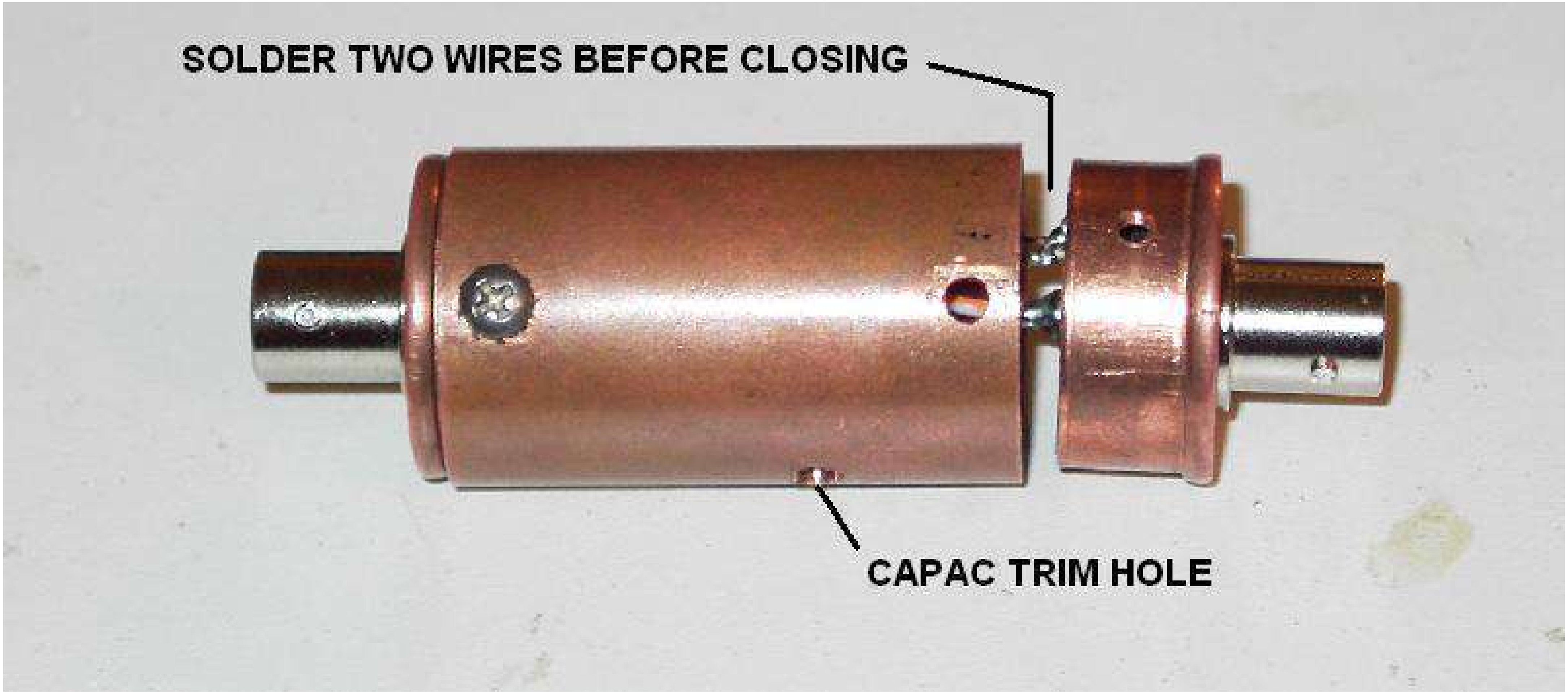

PCB DIA ~3/4"
PCB WITH
3/32" CENTER HOLE
(2 PLS)
SOLDER PAD
DIAMETER
~ 1/2"
SOLDER BOTH
SIDES OF BOARD
& BOTH BOARDS
RESISTORS
SPACED 1/16"
ABOVE PCB
N5ESE - NOV 2005


BNC
RESISTOR ASSY:
MOUNT OVER
BNC PIN
END CAP
SOLDER TO
BNC THRU
LARGER HOLE
N5ESE - NOV 2005

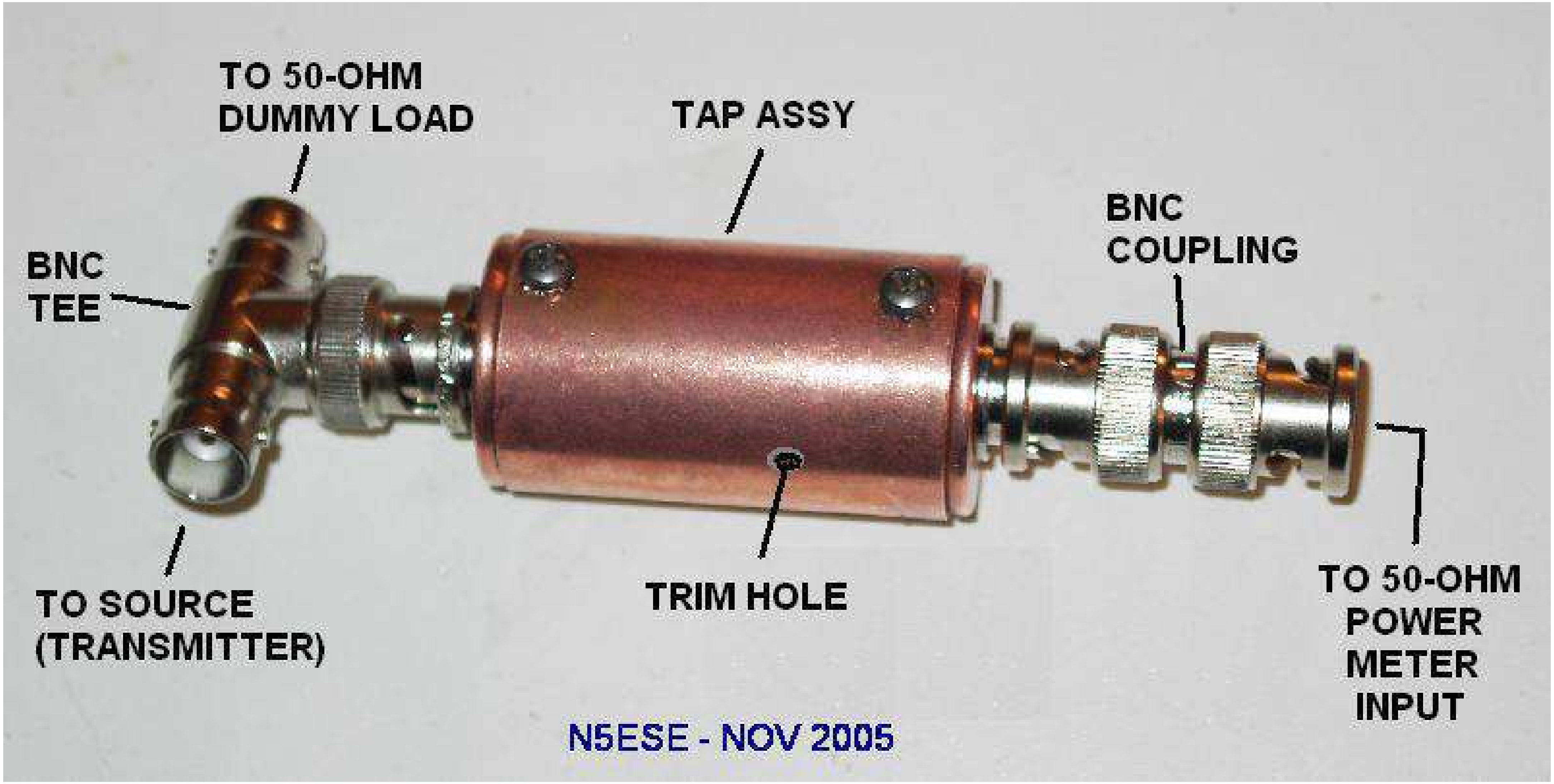

FIXED CAPAC
(BNC CENTER
TO LUG GND)
BNC
NUT
82P
STAR
WASHER
SOLDER LUG
N5ESE - NOV 2005


N5ESE - NOV 2005
OUTPUT WIRE
(~ 1")
RESISTOR /
END-CAP ASSY
TRIMMER CAPAC:
SOLDER ONE SIDE
TO PCB
OUTPUT
GROUND WIRE
(~ 3/4")

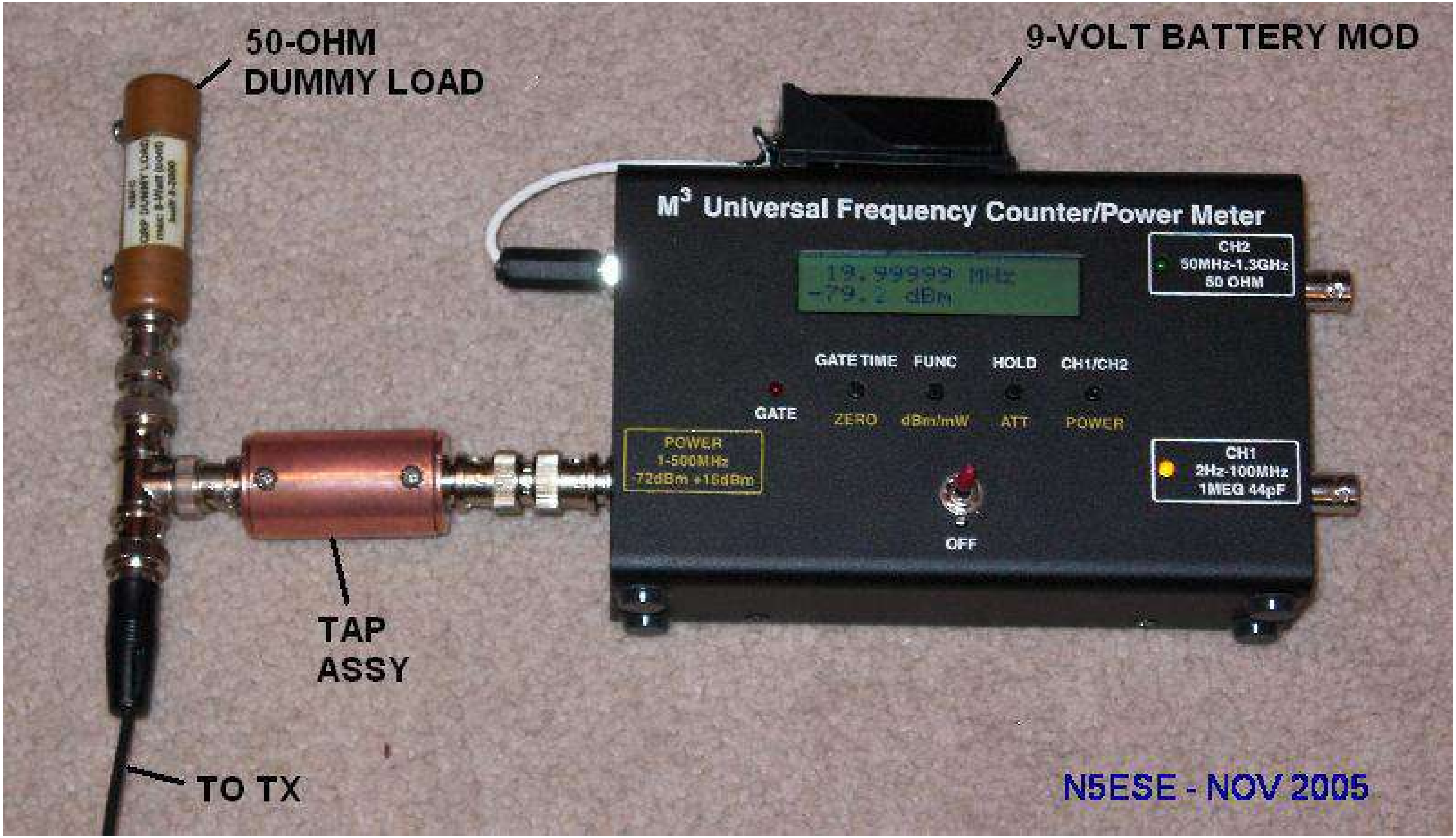

N5ESE - NOV 2005
1/8" DRILL FOR
TRIMMER CAPAC
ACCESS


SOLDER TWO WIRES BEFORE CLOSING
CAPAC TRIM HOLE


4-40 SCREWS
HI-POWER
SIDE
(TO TX AND
50-OHM LOAD)
LOW-POWER
SIDE (TO
50-OHM INPUT)
NIBCO
TRIM
N5ESE - NOV 2005

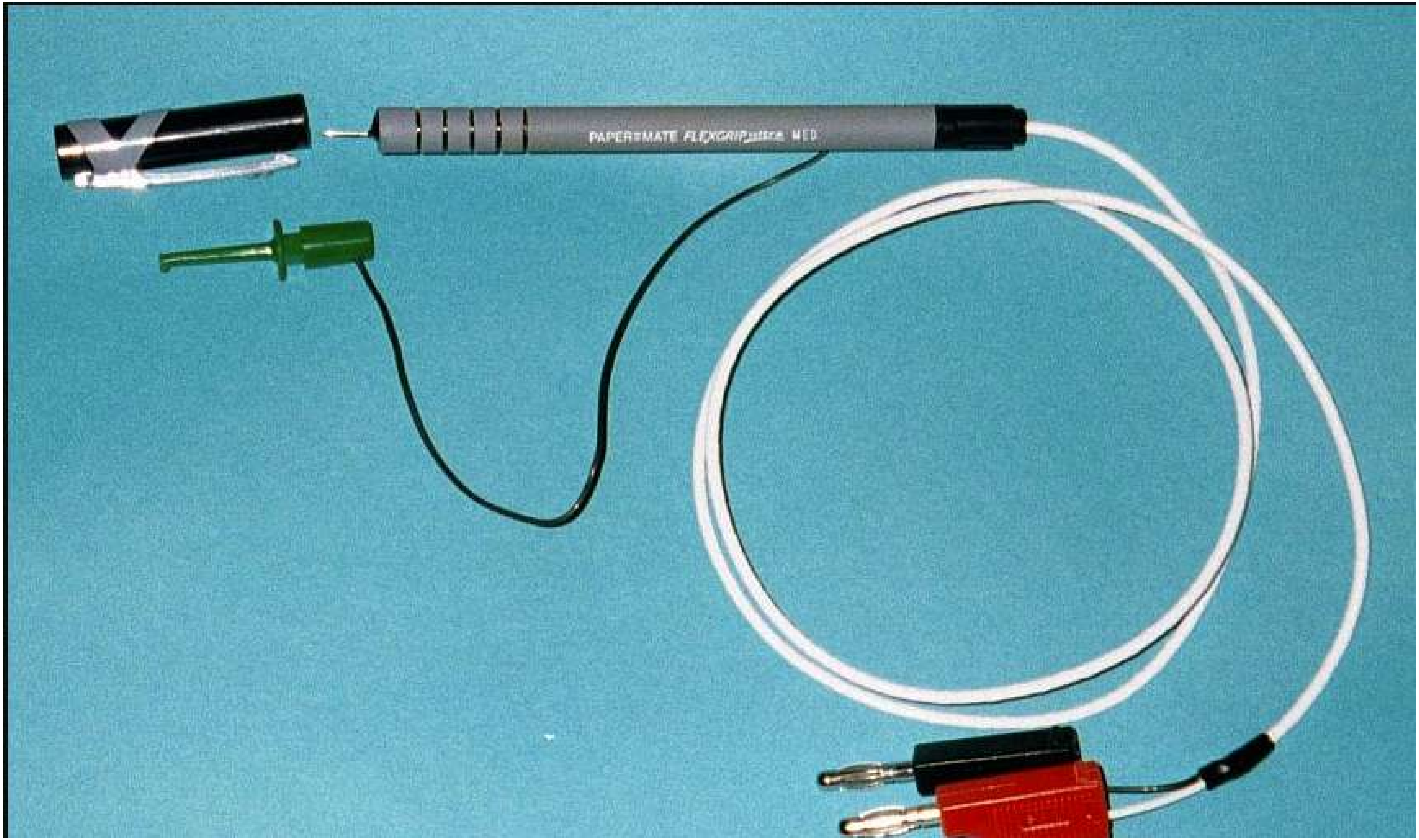


TO 50-OHM DUMMY LOAD
TAP ASSY
BNC TEE
BNC COUPLING
TO SOURCE (TRANSMITTER)
TRIM HOLE
TO 50-OHM POWER METER INPUT
N5ESE - NOV 2005

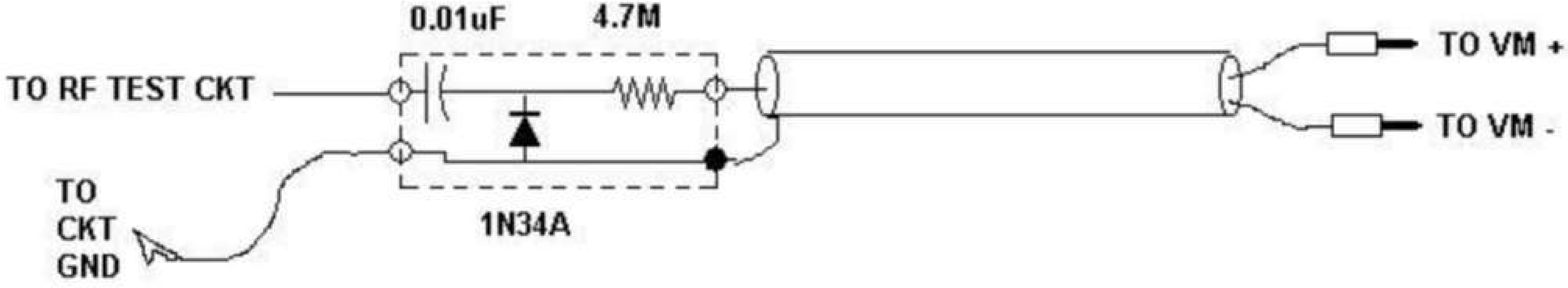


50-OHM
DUMMY LOAD
9-VOLT BATTERY MOD
M3 Universal Frequency Counter/Power Meter
19.99999 MHz
-79.2 dBm
CH2
50MHz-1.3GHz
50 OHM
GATE TIME
FUNC
HOLD
CH1/CH2
GATE
ZERO
dBm/mW
ATT
POWER
POWER
1-500MHz
72dBm +15dBm
CH1
2Hz-100MHz
1MEG 44pF
OFF
TAP
ASSY
TO TX
N5ESE - NOV 2005


M3 Universal Frequency Counter/Power Meter
7.040000 MHz
5.81 W
ATT
CH2
50MHz-1.3GHz
50 OHM
GATE TIME
FUNC
HOLD
CH1/CH2
GATE
ZERO
dBm/mW
ATT
POWER
POWER
1-500MHz
-72dBm +16dBm
CH1
2Hz-100MHz
1MEG 44pF
OFF
ELECRAFT K2 TRANSCEIVER
MODE
A/B
A=B
VOX
REV
SPLIT
BAND+
DISPLAY
RCL
RF/ALC
BAND-
ANT 1/2
STORE
TUNE
MENU
NB
EDIT
LEVEL
KEYER
POWER
AF GAIN
RF GAIN
PRE/ATT
AGC
XFIL
SPOT
CW RV
AFIL
RIT
XIT
MSG
PF1
PF2
REC
RATE
LOCK
ON
OFF

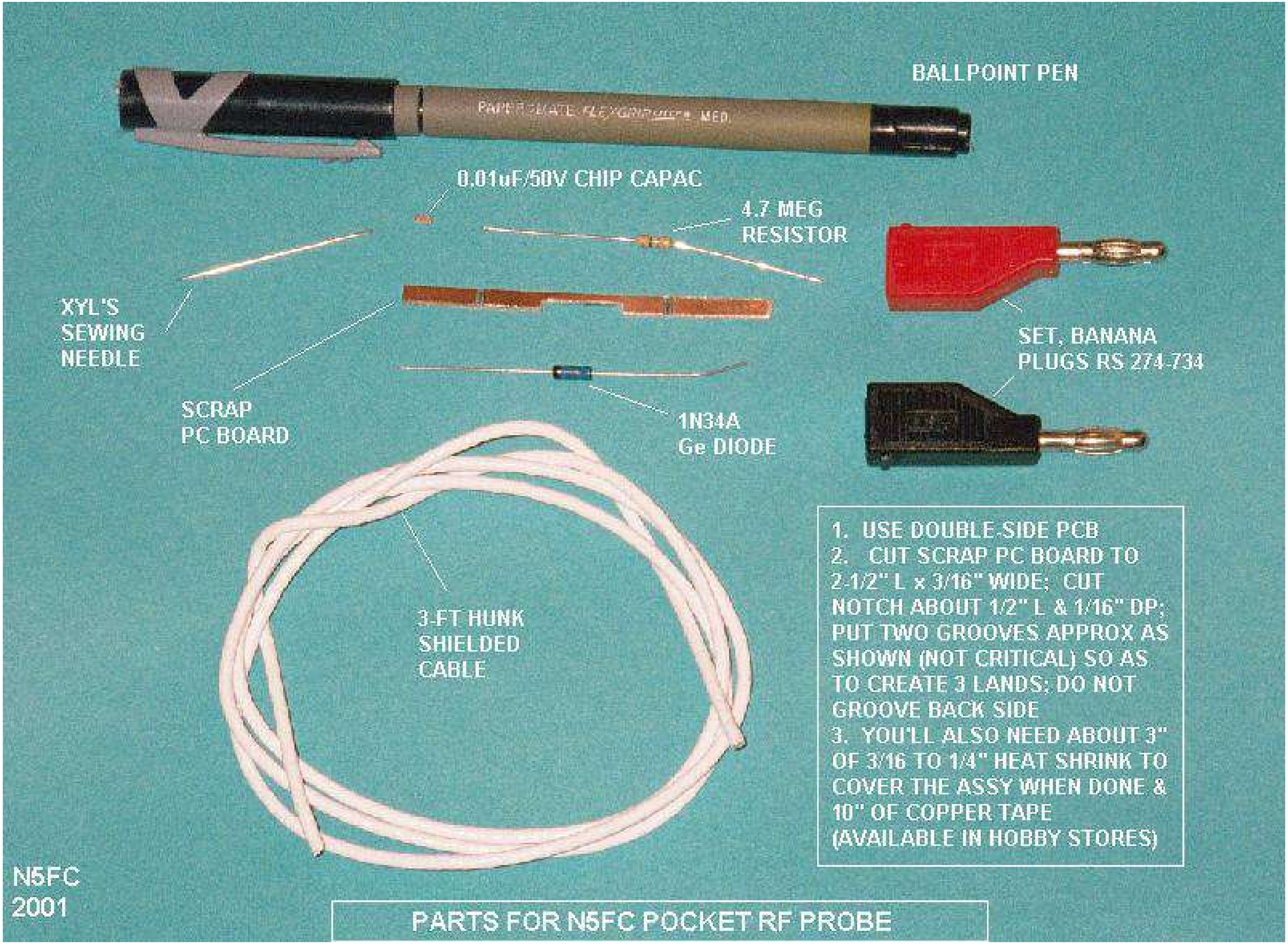

PAPER MATE FLEXGRIP MED

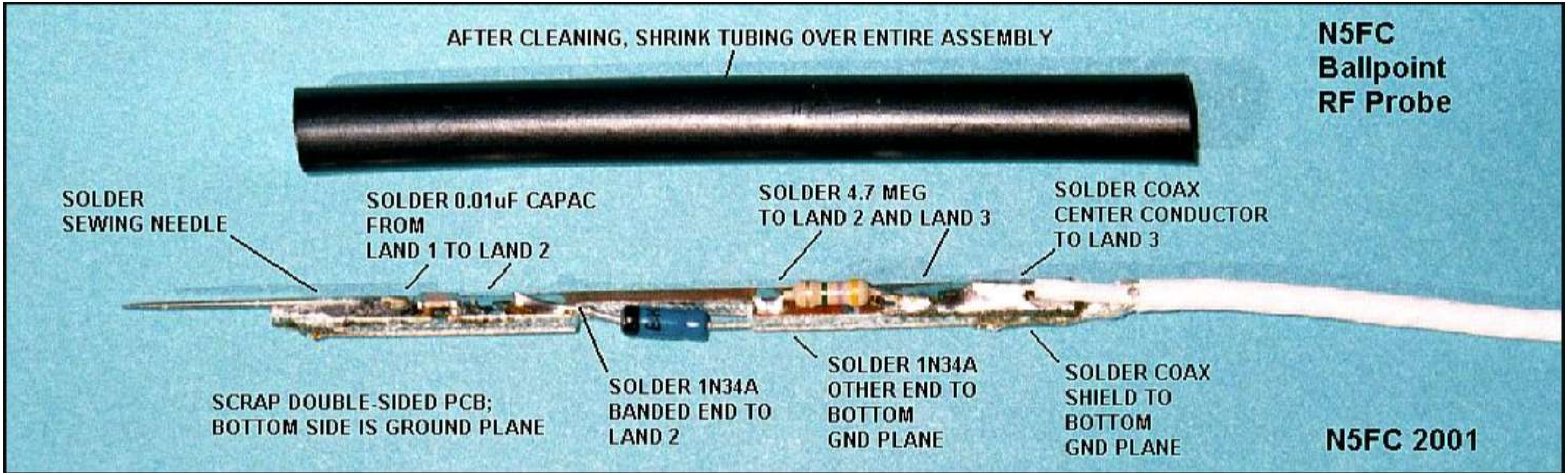
N5FC 2001

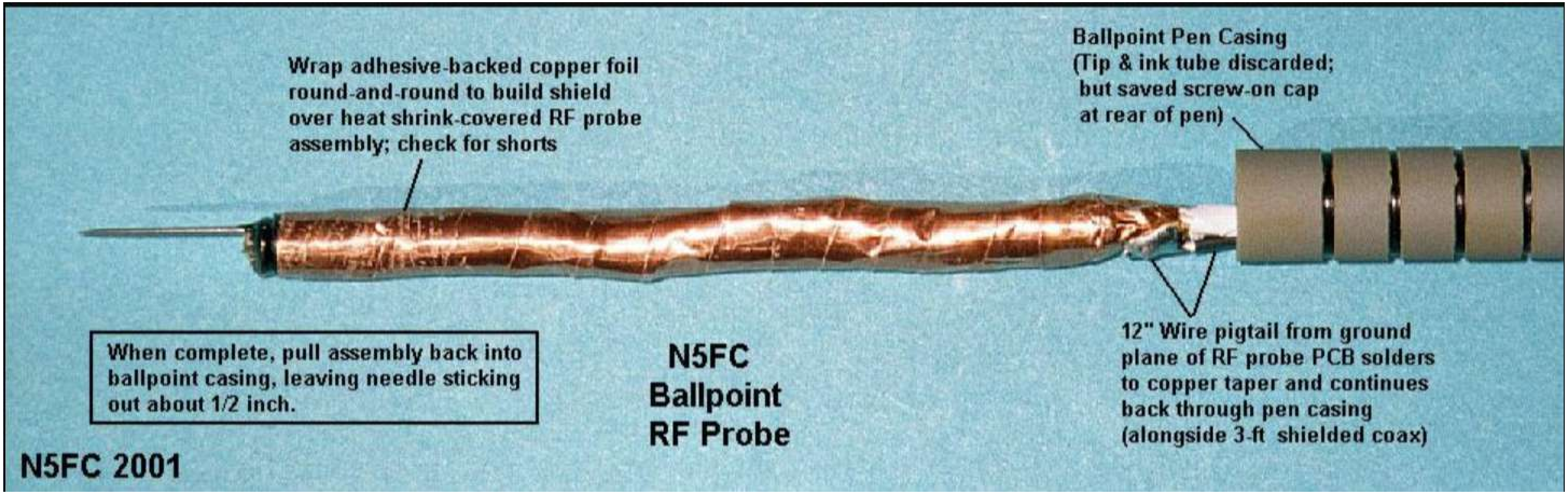


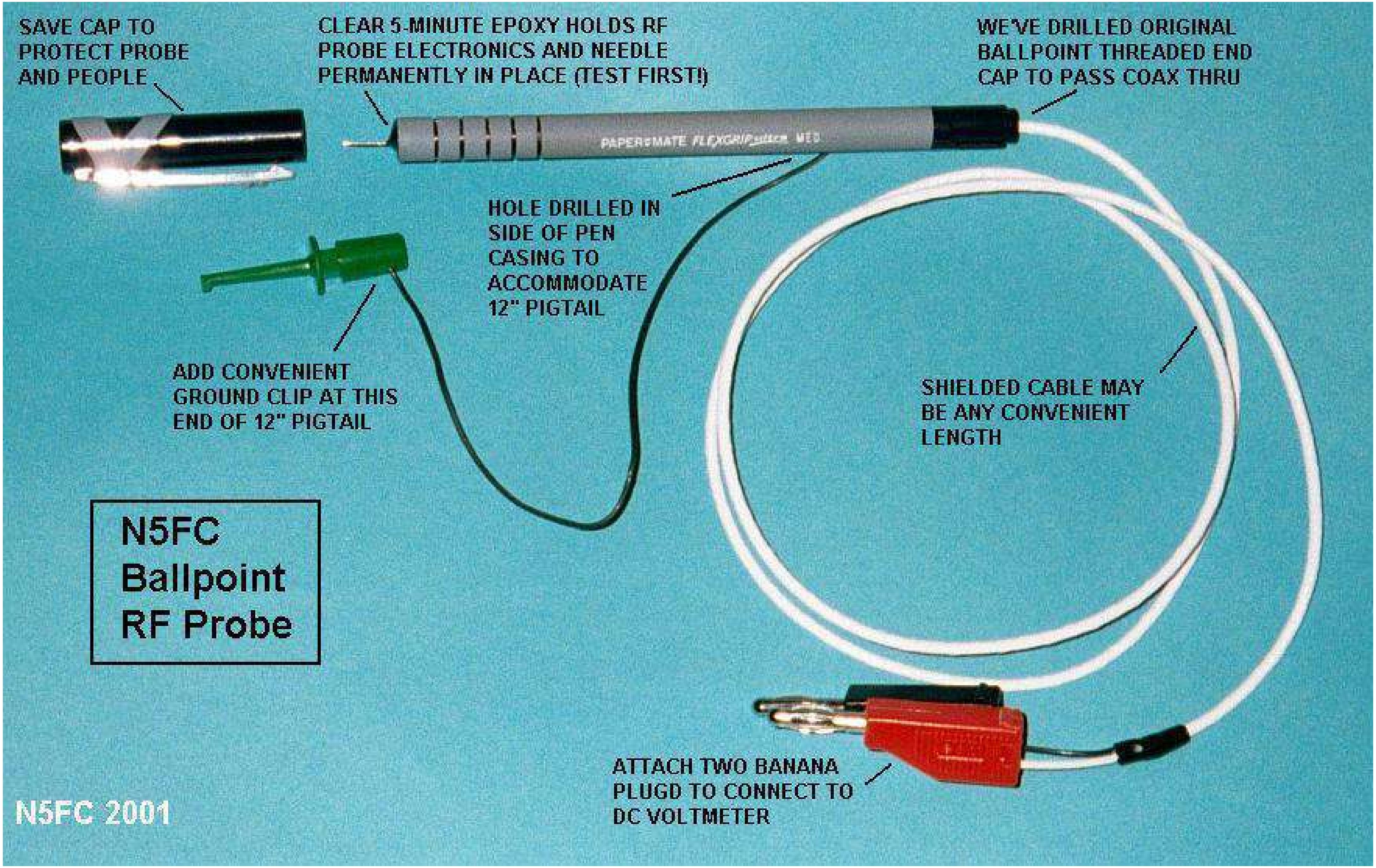
CLASSIC RF PROBE

Reads RMS Equivalent Voltage in test circuit, if Voltmeter is 10 -11 Meg Input Impedance;
Reads 4X RMS Equiv Voltage if VM is 1Meg Input Impedance (Set VM to measure DCV)


BALLPOINT PEN
PAPERMATE FLEXGRIP MED.
0.01uF/50V CHIP CAPAC
4.7 MEG
RESISTOR
XYL'S
SEWING
NEEDLE
SCRAP
PC BOARD
1N34A
Ge DIODE
SET, BANANA
PLUGS RS 274-734
3-FT HUNK
SHIELDED
CABLE
1. USE DOUBLE-SIDE PCB
2. CUT SCRAP PC BOARD TO 2-1/2" L x 3/16" WIDE; CUT NOTCH ABOUT 1/2" L & 1/16" DP; PUT TWO GROOVES APPROX AS SHOWN (NOT CRITICAL) SO AS TO CREATE 3 LANDS; DO NOT GROOVE BACK SIDE
3. YOU'LL ALSO NEED ABOUT 3" OF 3/16 TO 1/4" HEAT SHRINK TO COVER THE ASSY WHEN DONE & 10" OF COPPER TAPE (AVAILABLE IN HOBBY STORES)
N5FC
2001
PARTS FOR N5FC POCKET RF PROBE

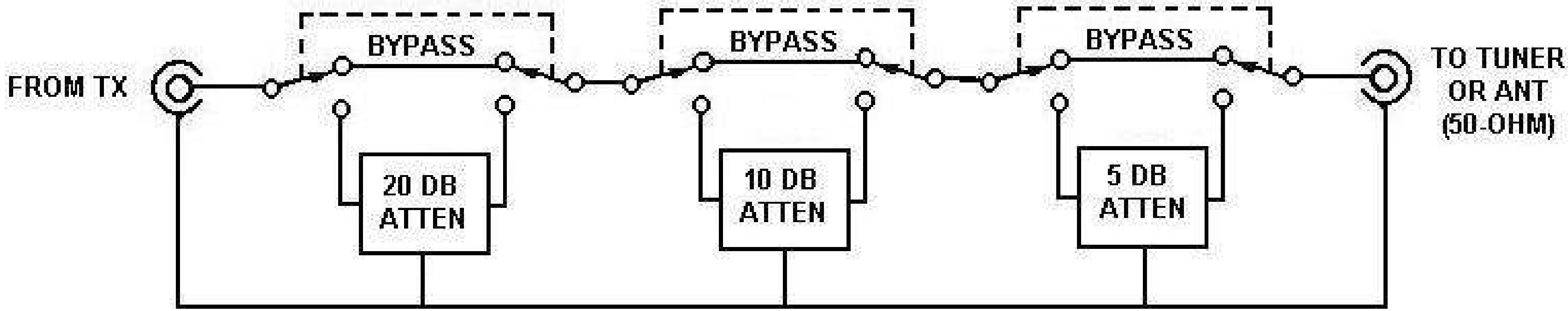

AFTER CLEANING, SHRINK TUBING OVER ENTIRE ASSEMBLY
N5FC
Ballpoint
RF Probe
SOLDER
SEWING NEEDLE
SOLDER 0.01uF CAPAC
FROM
LAND 1 TO LAND 2
SOLDER 4.7 MEG
TO LAND 2 AND LAND 3
SOLDER COAX
CENTER CONDUCTOR
TO LAND 3
SCRAP DOUBLE-SIDED PCB;
BOTTOM SIDE IS GROUND PLANE
SOLDER 1N34A
BANDED END TO
LAND 2
SOLDER 1N34A
OTHER END TO
BOTTOM
GND PLANE
SOLDER COAX
SHIELD TO
BOTTOM
GND PLANE
N5FC 2001


Wrap adhesive-backed copper foil round-and-round to build shield over heat shrink-covered RF probe assembly; check for shorts
Ballpoint Pen Casing (Tip & ink tube discarded; but saved screw-on cap at rear of pen)
When complete, pull assembly back into ballpoint casing, leaving needle sticking out about 1/2 inch.
N5FC Ballpoint RF Probe
12" Wire pigtail from ground plane of RF probe PCB solders to copper taper and continues back through pen casing (alongside 3-ft shielded coax)
N5FC 2001

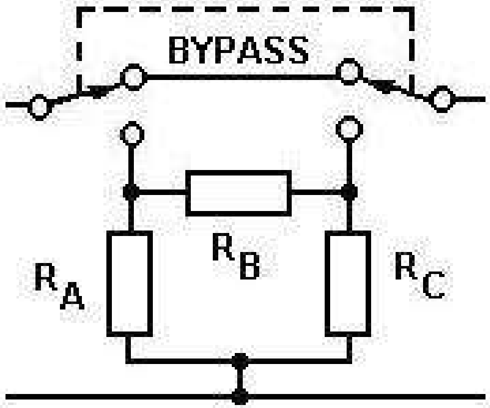

SAVE CAP TO PROTECT PROBE AND PEOPLE
CLEAR 5-MINUTE EPOXY HOLDS RF PROBE ELECTRONICS AND NEEDLE PERMANENTLY IN PLACE (TEST FIRST!)
WE'VE DRILLED ORIGINAL BALLPOINT THREADED END CAP TO PASS COAX THRU
PAPER MATE FLEXGRIP MED
HOLE DRILLED IN SIDE OF PEN CASING TO ACCOMMODATE 12" PIGTAIL
ADD CONVENIENT GROUND CLIP AT THIS END OF 12" PIGTAIL
SHIELDED CABLE MAY BE ANY CONVENIENT LENGTH
N5FC Ballpoint RF Probe
ATTACH TWO BANANA PLUGD TO CONNECT TO DC VOLTMETER
N5FC 2001


N5FC 2001
DURACELL
ULTRA


N5FC 4-2001
N5FC
0-5-10-15-20-25-30-35 DB
5-Watt Attenuator
ATU
IN
5 DB
OUT
IN
10 DB
OUT
IN
20 DB
OUT
TX



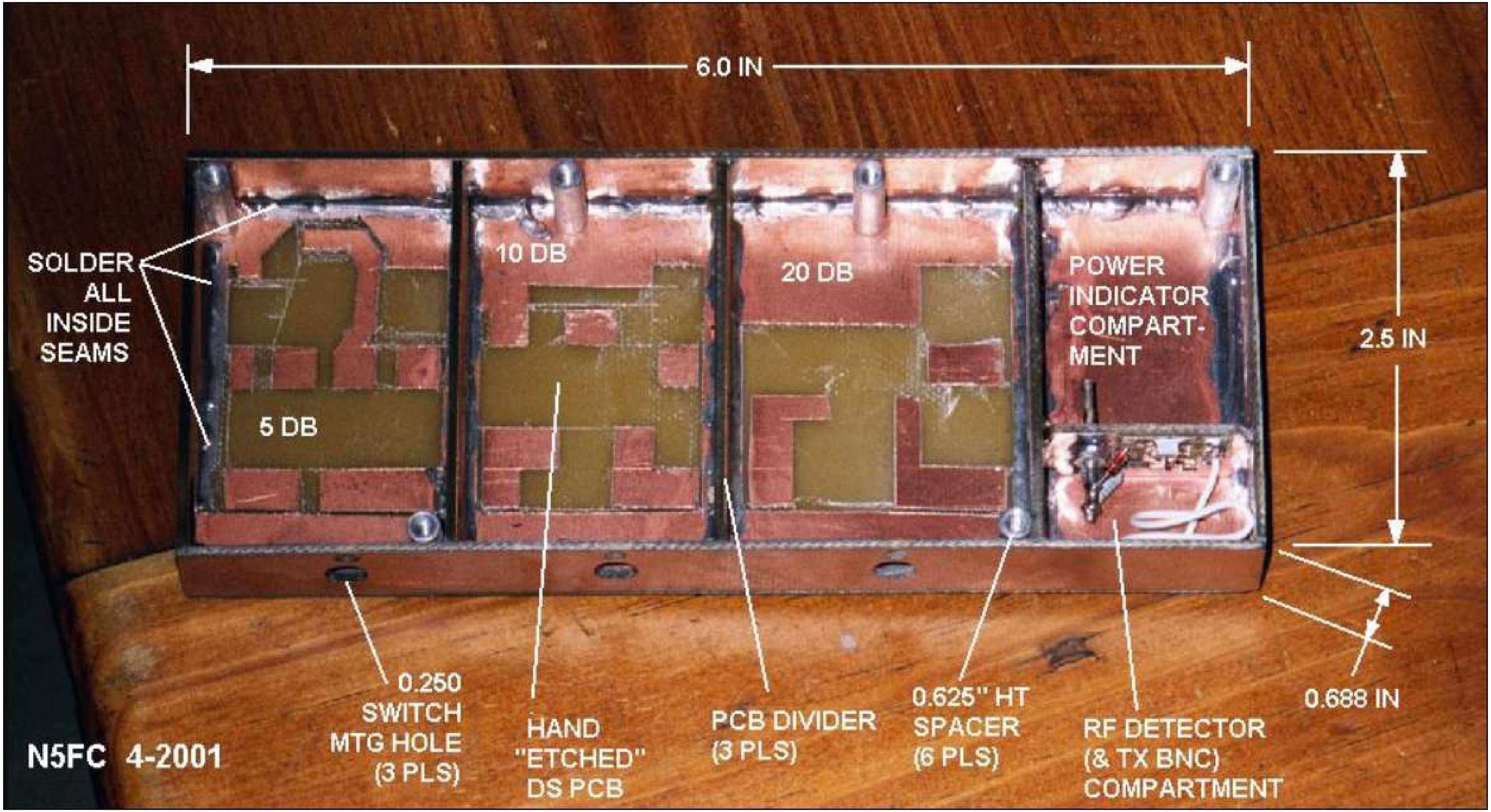
N5FC QRP Switchable 0-5-10-15-20-25-30-35 db Attenuator

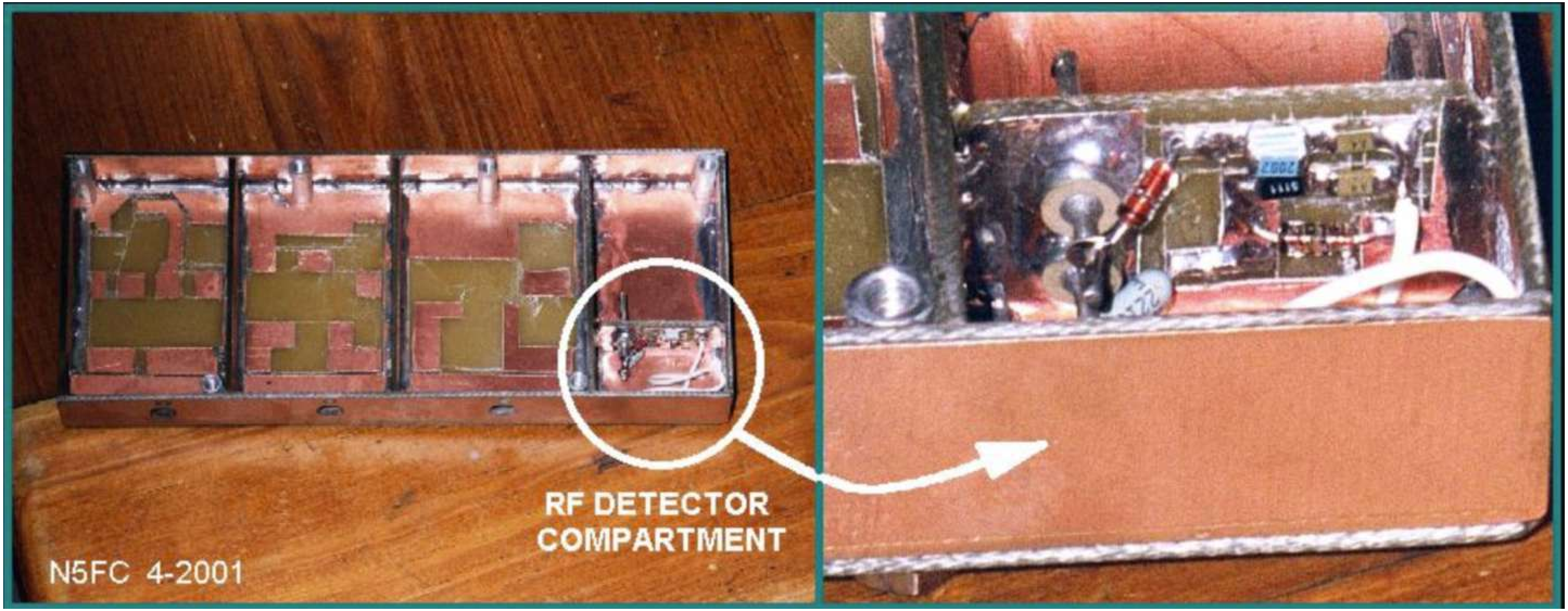


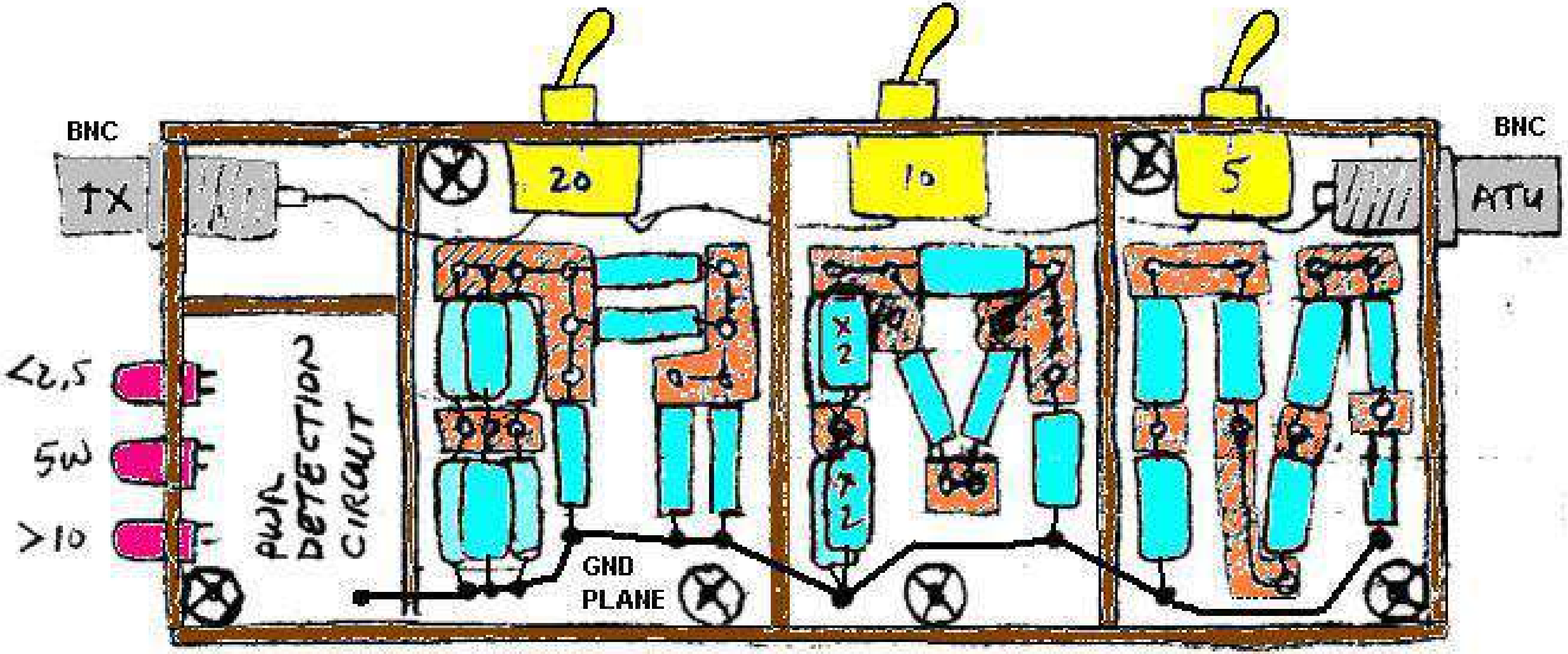
ATTENUATOR SECTION CIRCUIT

		NOM'L	ACT'L	IMPLEMENT WITH
20 db (NOM) ACT=19.7db	R_A	61.1	67	6 ea 100/1W SERIES-PAR'L & 1K PAR'L
	R_B	247.5	235	2 ea 470 / 0.5W IN PARALLEL
	R_C	61.1	62	68/0.5W IN PAR'L with 680/0.5W
10 db (NOM) ACT = 9.7 db	R_A	96.2	100	4 ea 100/1W in SERIES-PARALLEL
	R_B	71.2	67	100/1W IN PAR'L w: 2 ea 100/.5W IN SER
	R_C	96.2	100	100/0.5W
5 db (NOM) ACT = 4.9 db	R_A	247.5	200	2 ea 100/1W IN SERIES
	R_B	30.4	30	3 ea 10/1W IN SERIES
	R_C	247.5	200	2 ea 100/0.5W IN SERIES

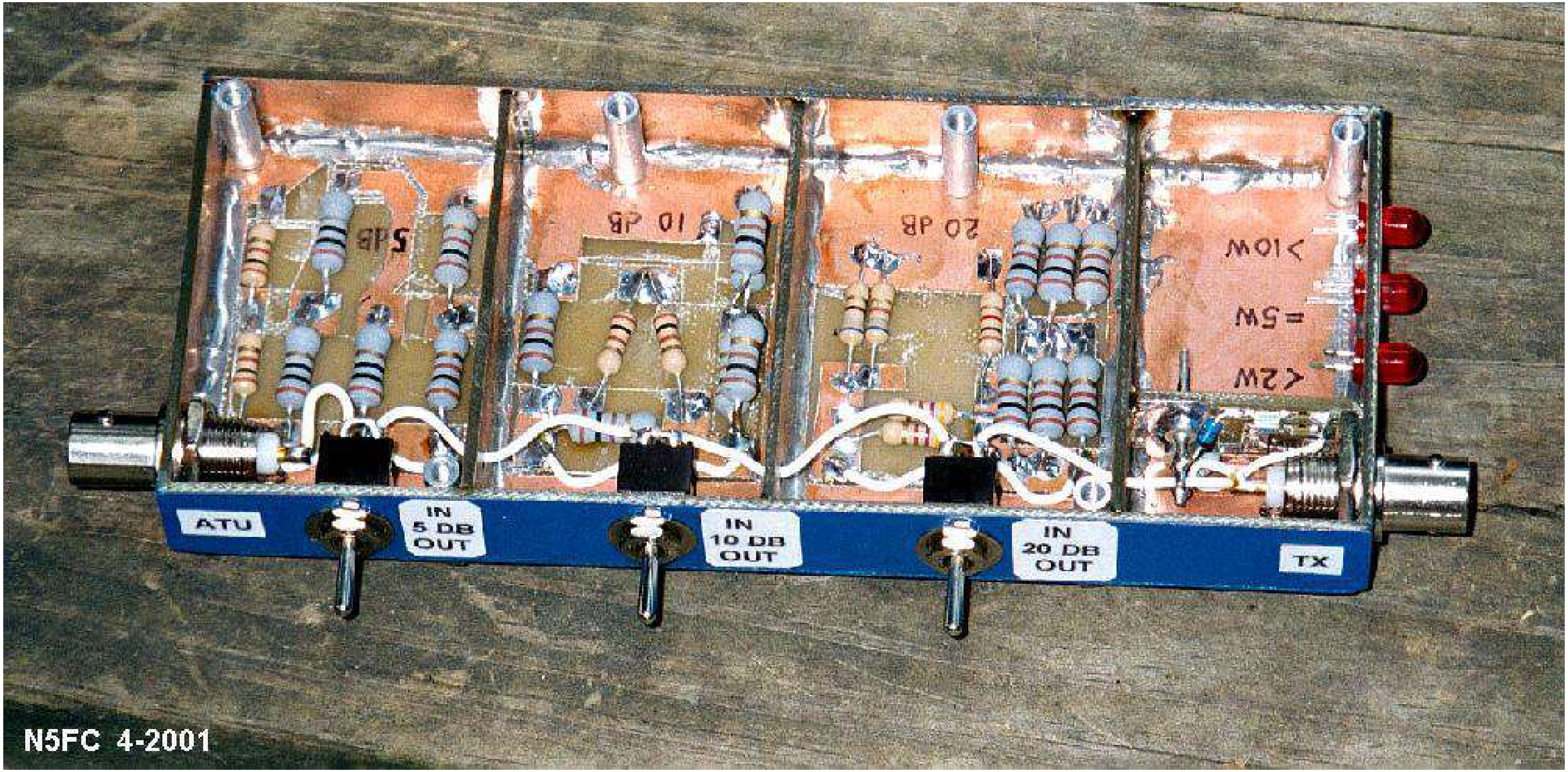
N5FC 4-2001


6.0 IN
2.5 IN
0.688 IN
SOLDER ALL INSIDE SEAMS
10 DB
20 DB
POWER INDICATOR COMPART-MENT
5 DB
0.250 SWITCH MTG HOLE (3 PLS)
HAND "ETCHED" DS PCB
PCB DIVIDER (3 PLS)
0.625" HT SPACER (6 PLS)
RF DETECTOR (& TX BNC) COMPARTMENT
N5FC 4-2001

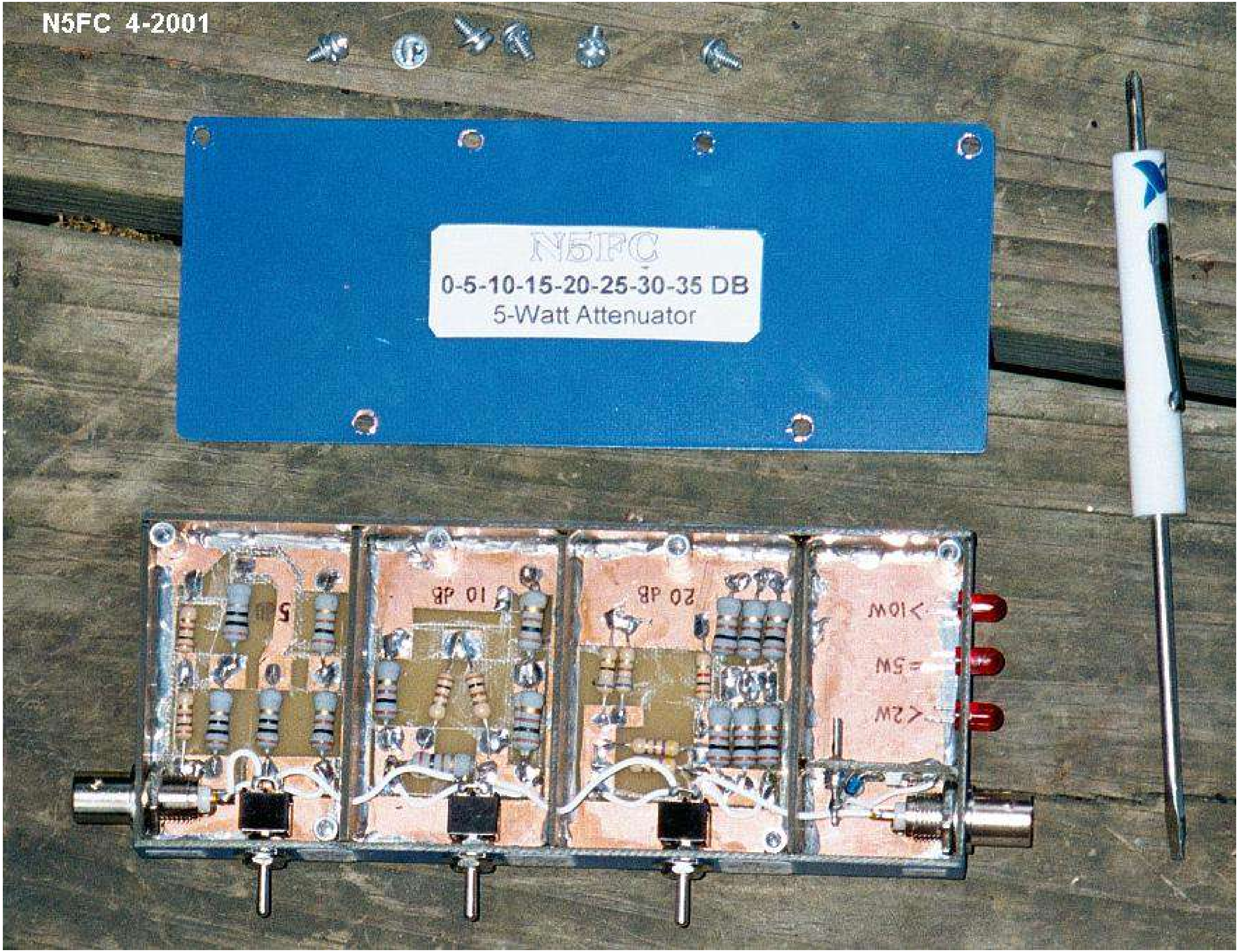

RF DETECTOR
COMPARTMENT
N5FC 4-2001

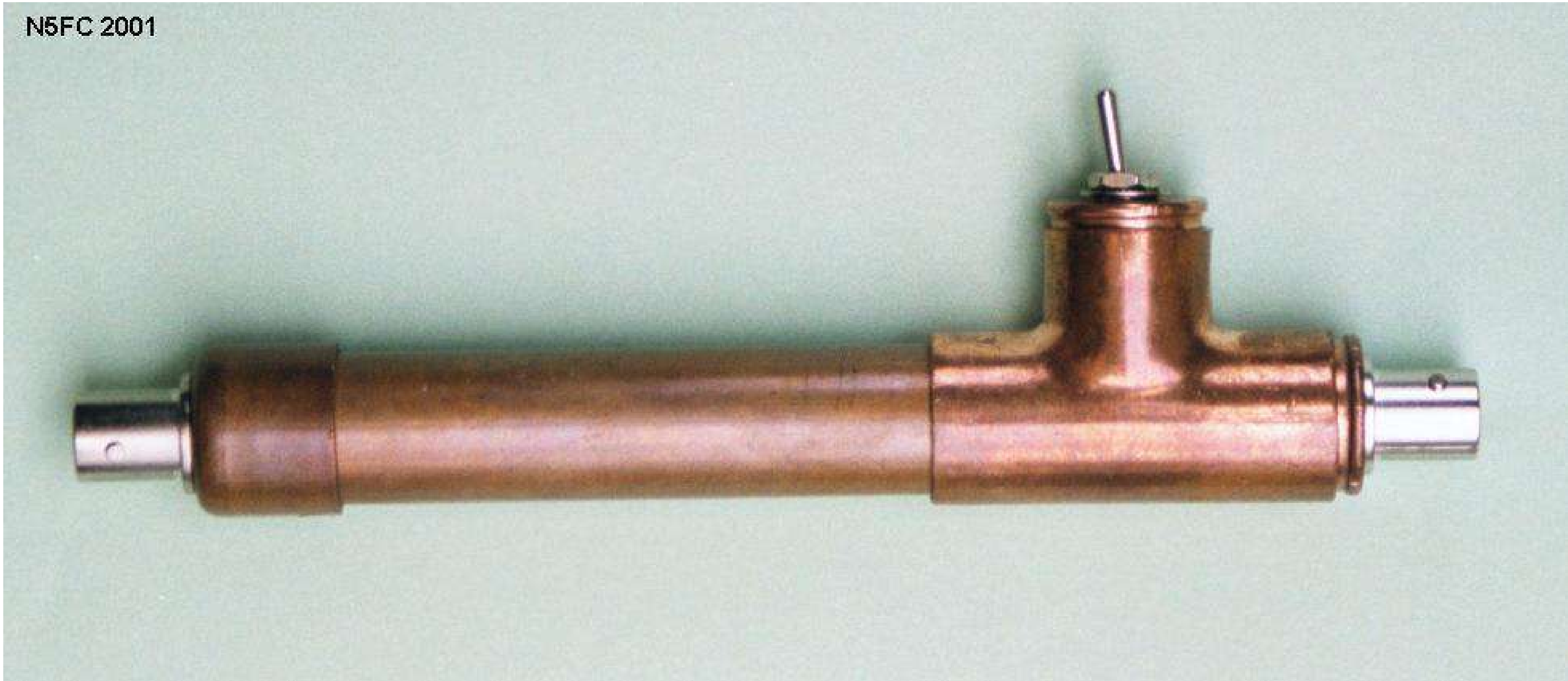


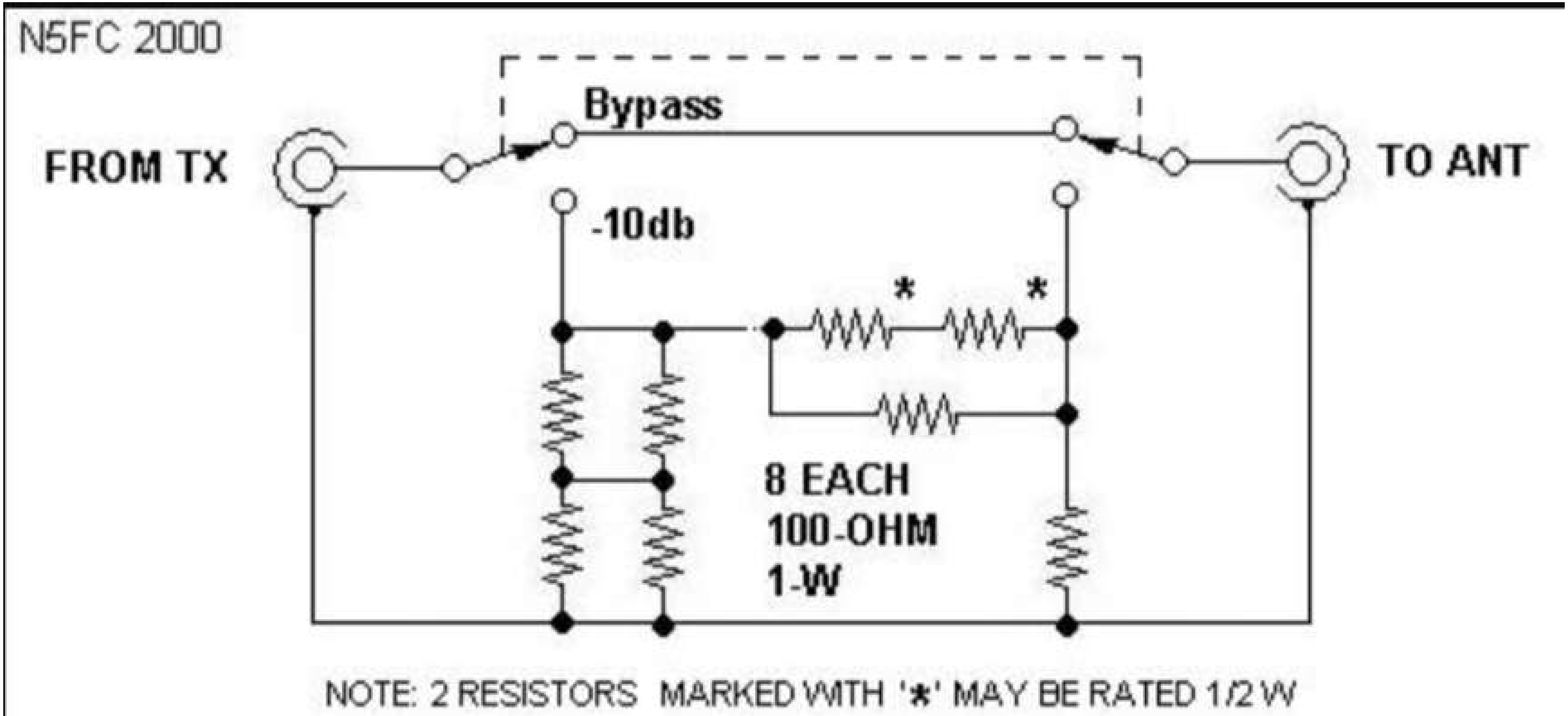
N5FC 4-2001



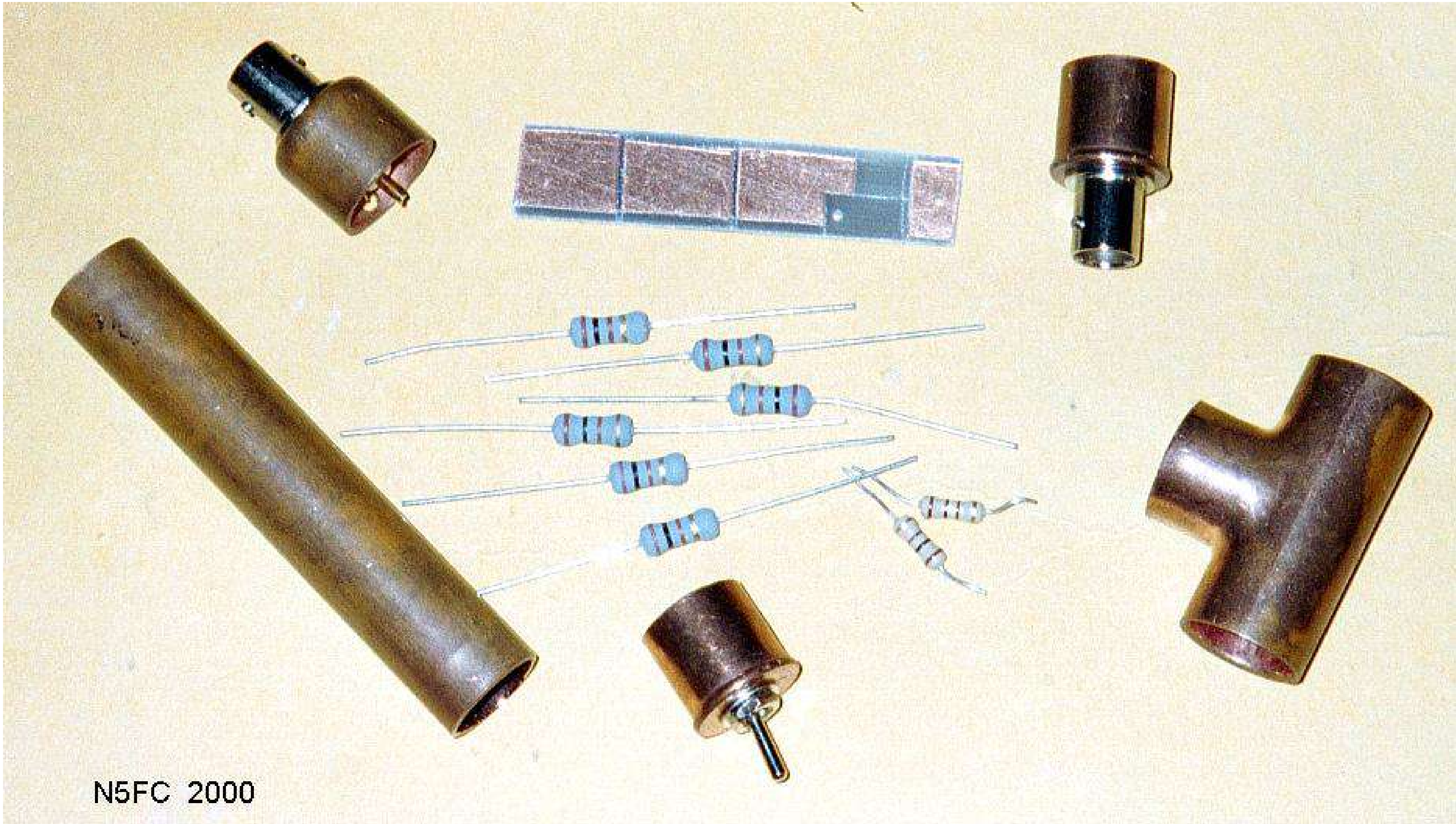
ATU
IN
5 DB
OUT
IN
10 DB
OUT
IN
20 DB
OUT
TX
N5FC 4-2001


N5FC 4-2001
N5FC
0-5-10-15-20-25-30-35 DB
5-Watt Attenuator
5dB
10 dB
20 dB
>10W
=5W
<2W

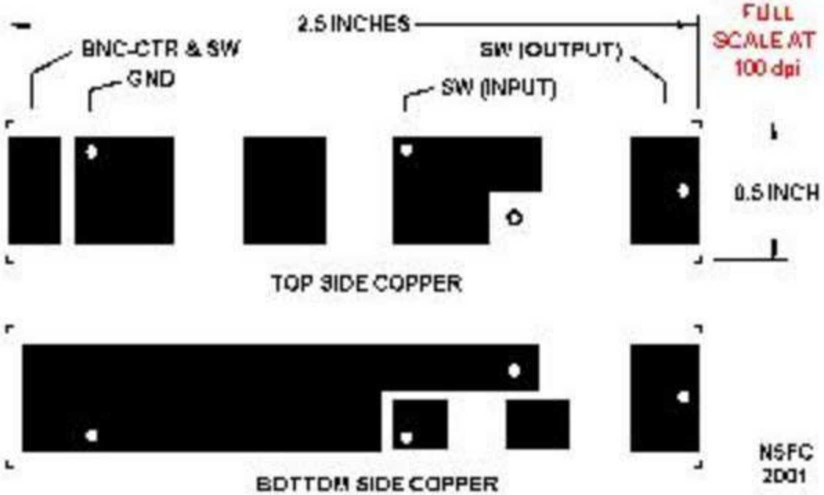

N5FC 2001

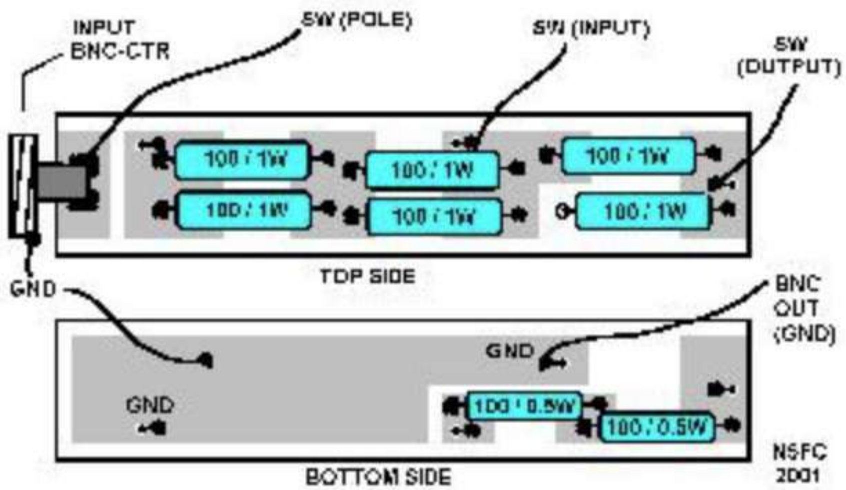


QRP Switchable 10 db Attenuator


N5FC 2000

were then tack-soldered to the pc board. Sorry, but you'll have to use teflon-coated wire for the wiring, because the resistors can get very hot in this application. Here's a sketch of the pc board copper and component layout:

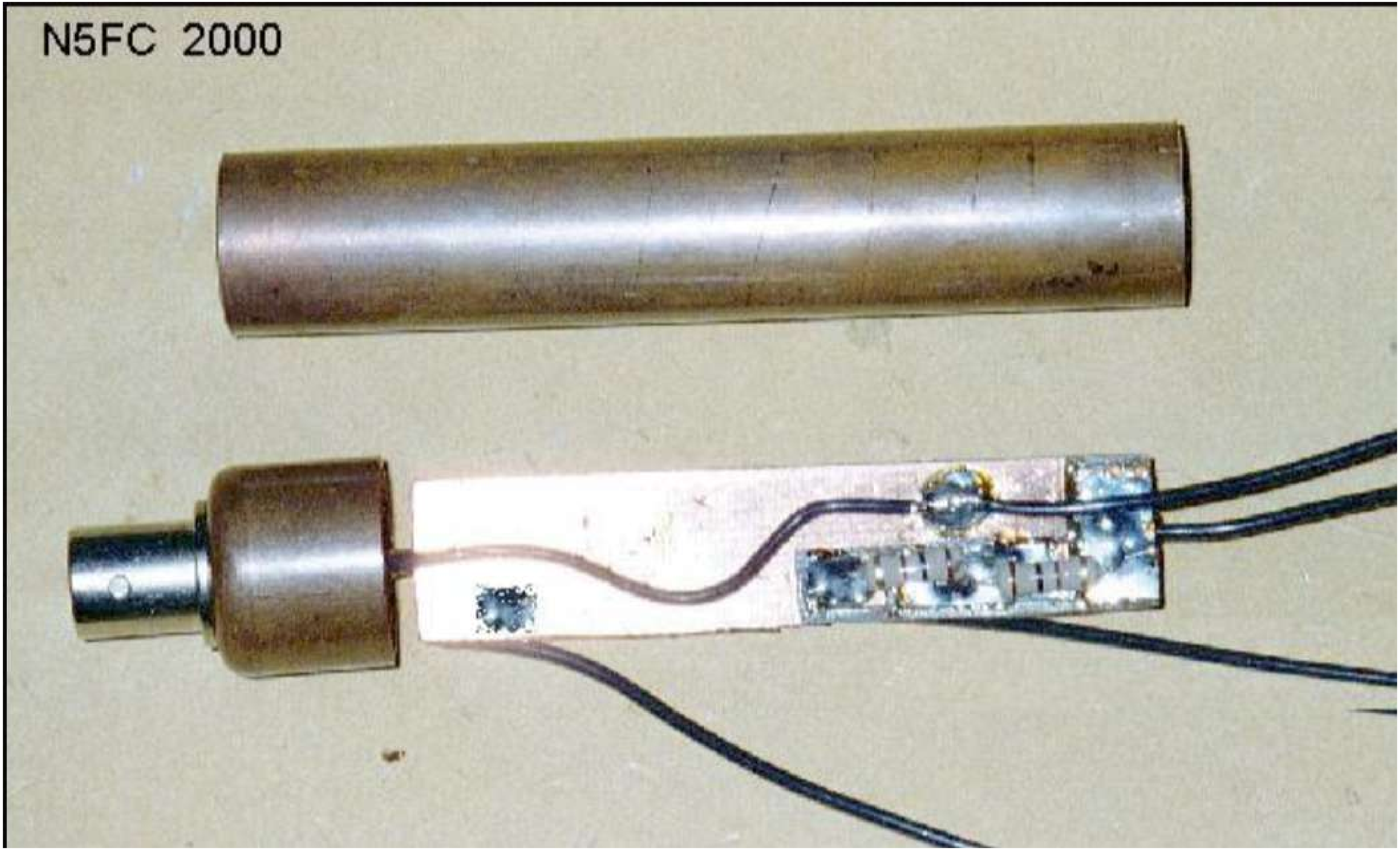




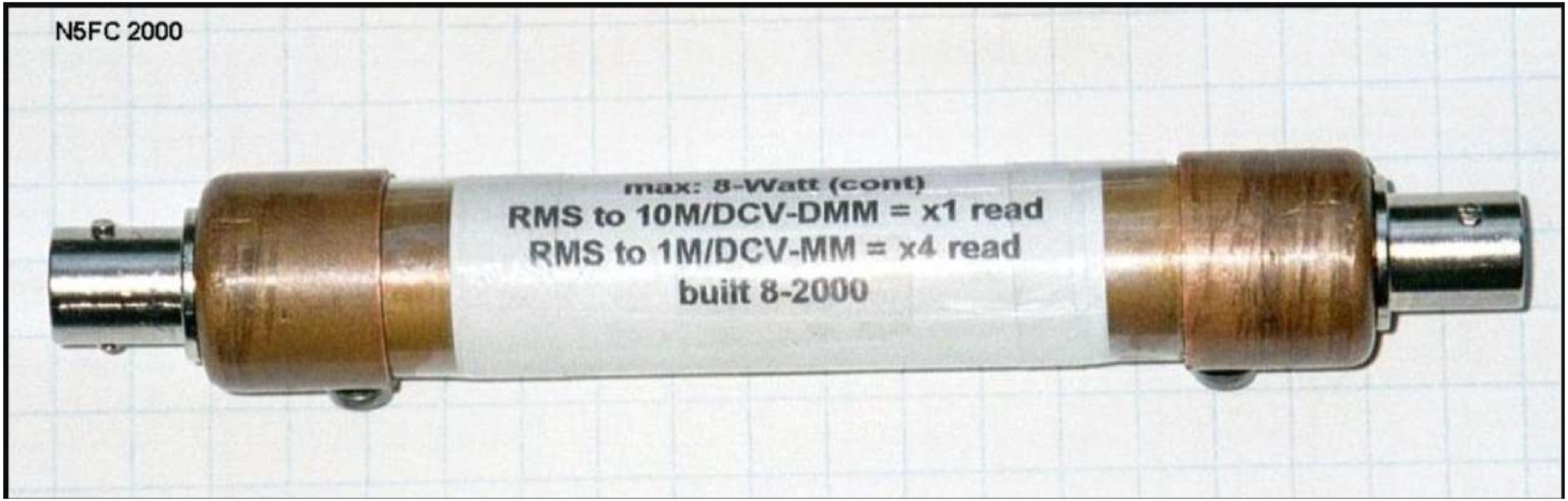
Click on either of the above images to see a larger, more readable image

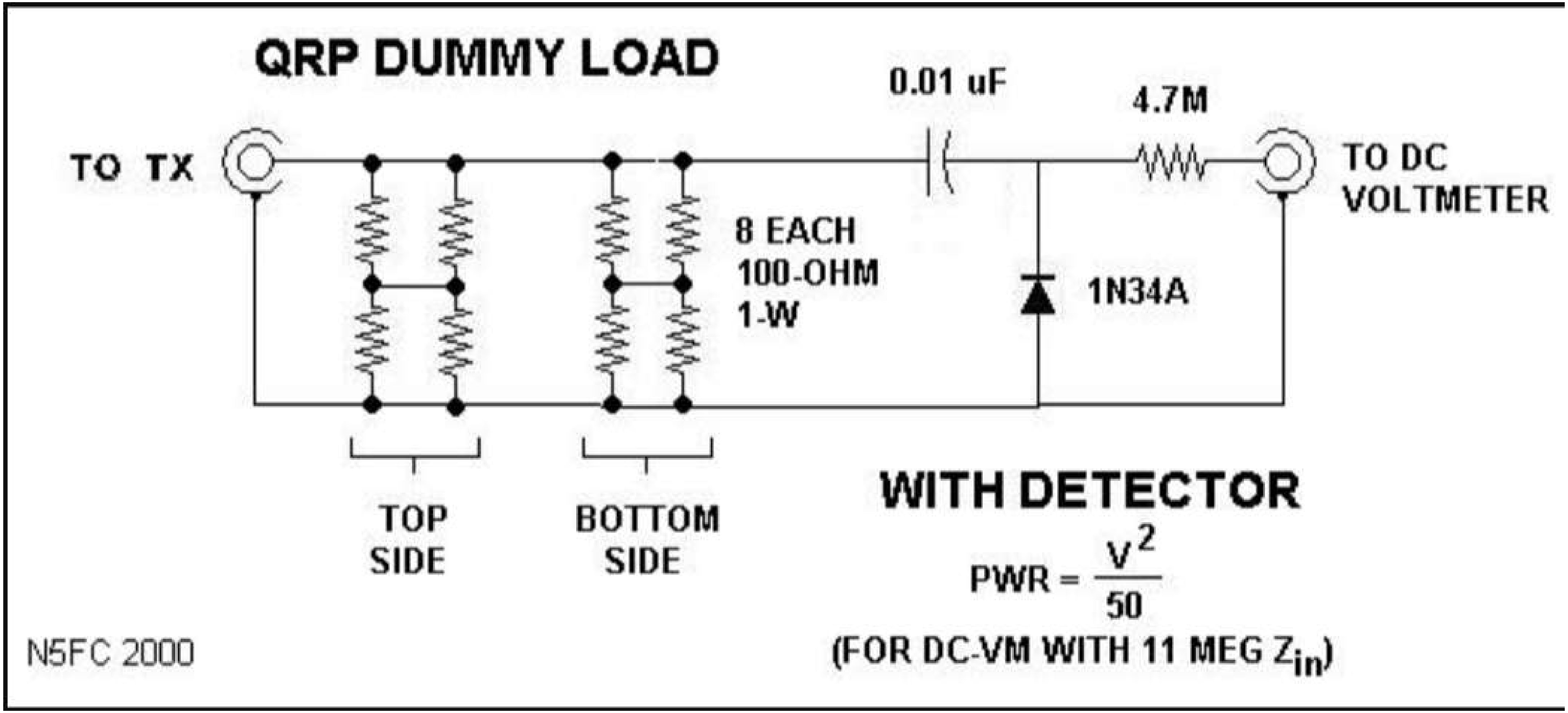
Note that where holes are drilled through the board, a wire provides continuity from top to bottom (solder on both sides)... otherwise, everything is soldered "surface-mount" style, with a big blob of solder holding the components down (don't get carried away). The center pin of the input BNC connector gets soldered directly to the foil where shown.

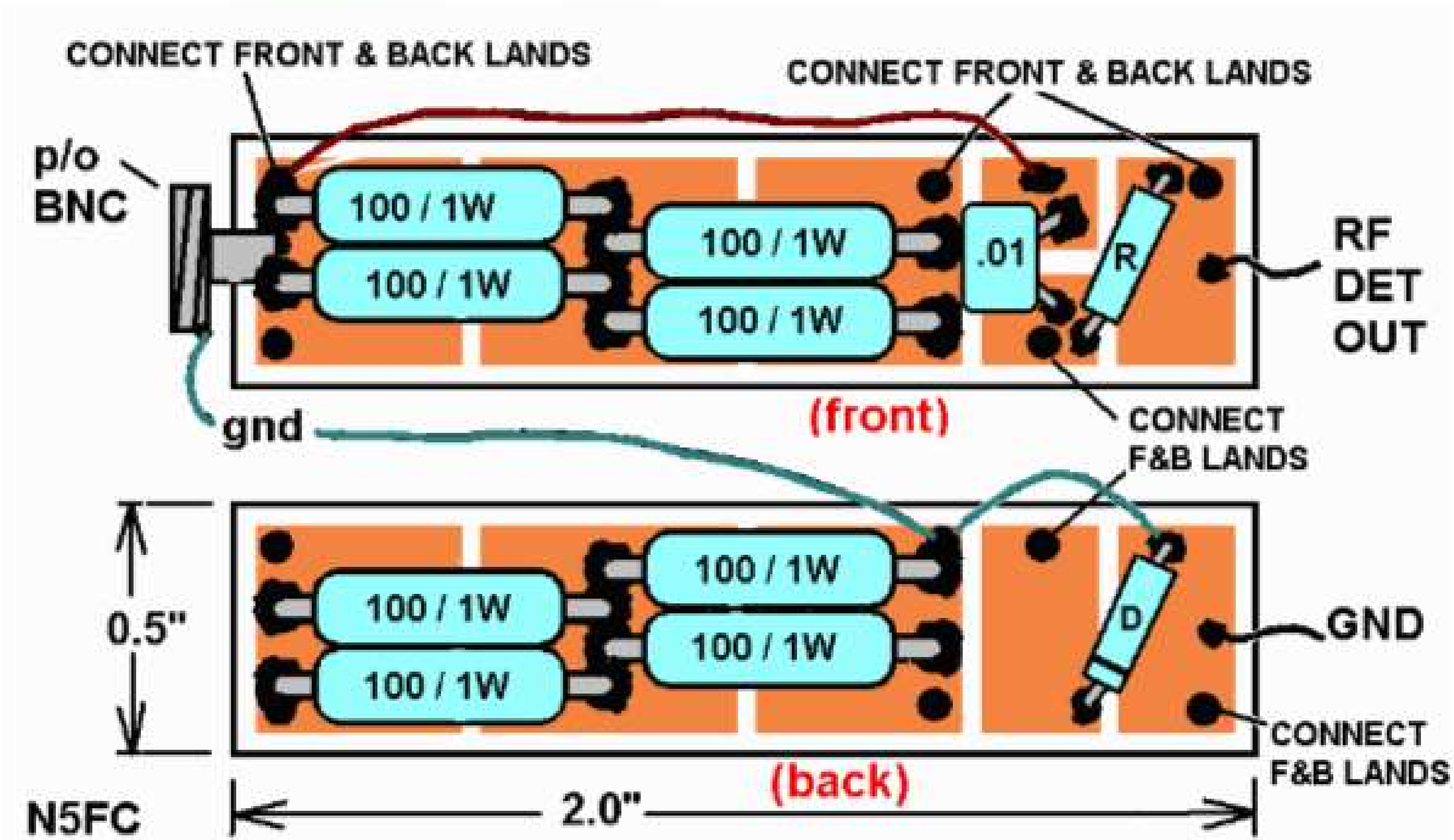

N5FC 2000


N5FC 2000

N5FC 2000

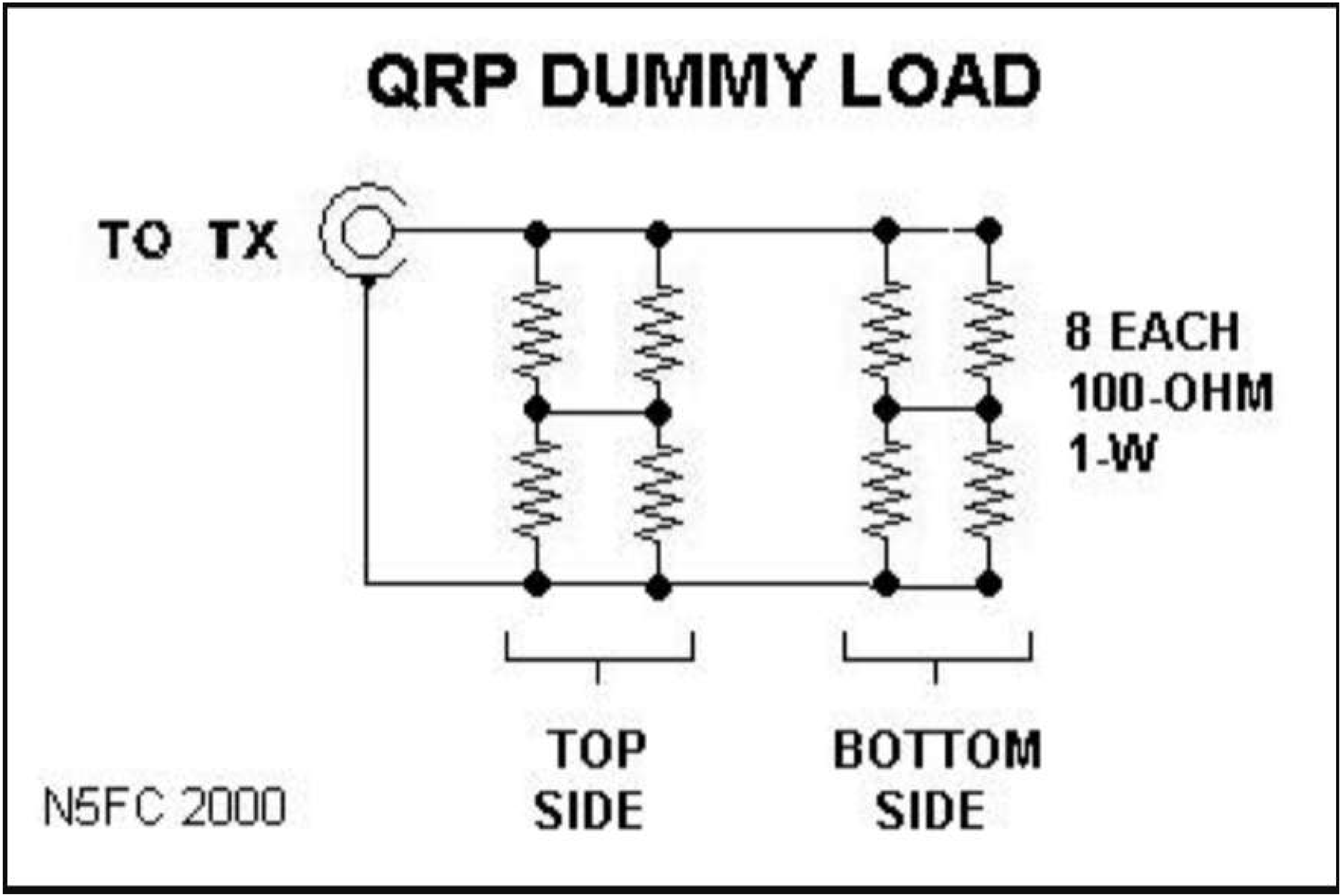

max: 8-Watt (cont)
RMS to 10M/DCV-DMM = x1 read
RMS to 1M/DCV-MM = x4 read
built 8-2000

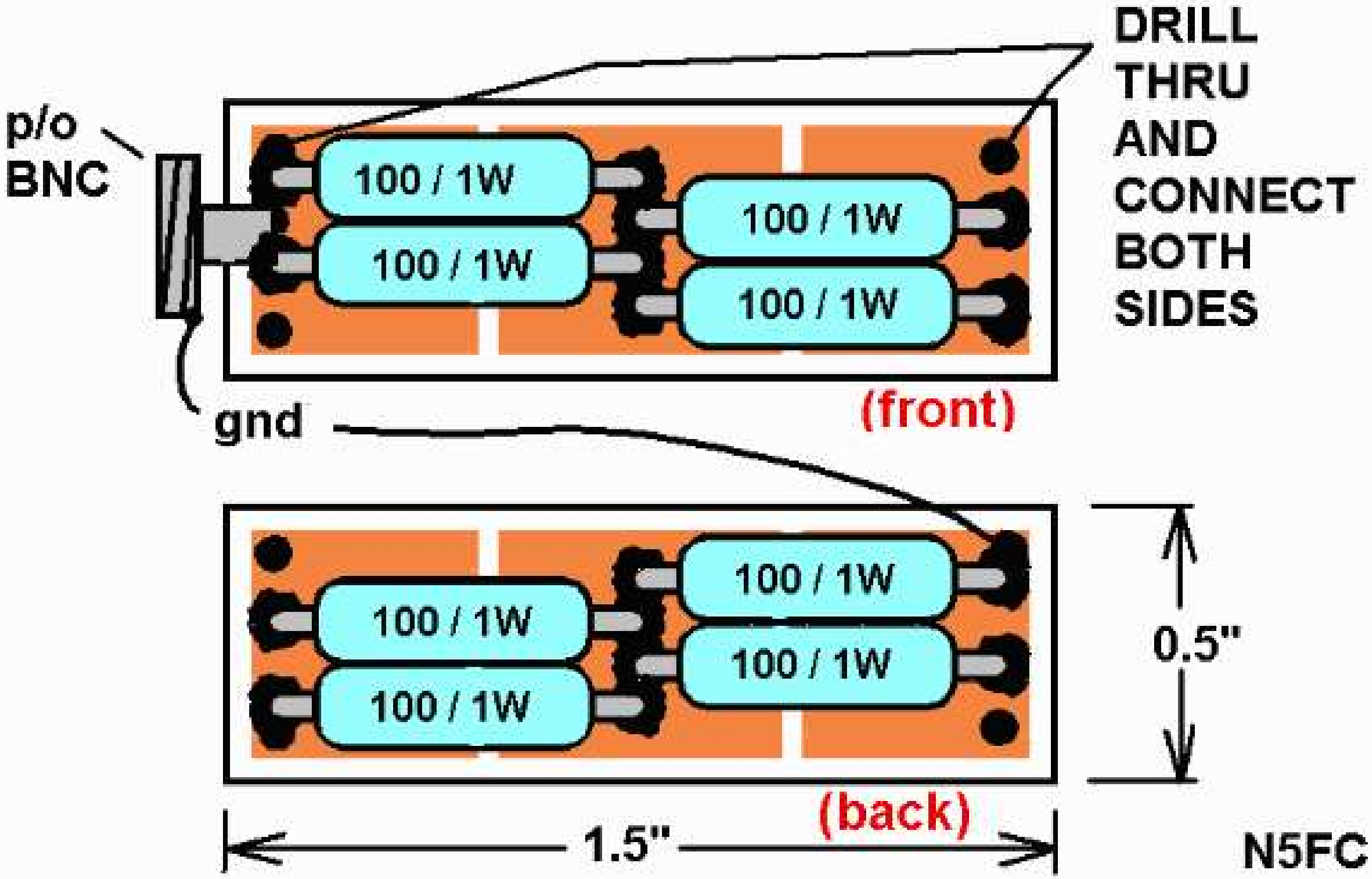

QRP DUMMY LOAD
0.01 uF
4.7M
TO TX
TO DC
VOLTMETER
8 EACH
100-OHM
1-W
1N34A
TOP
SIDE
BOTTOM
SIDE
WITH DETECTOR
PWR = V2/50
(FOR DC-VM WITH 11 MEG Zin)
N5FC 2000

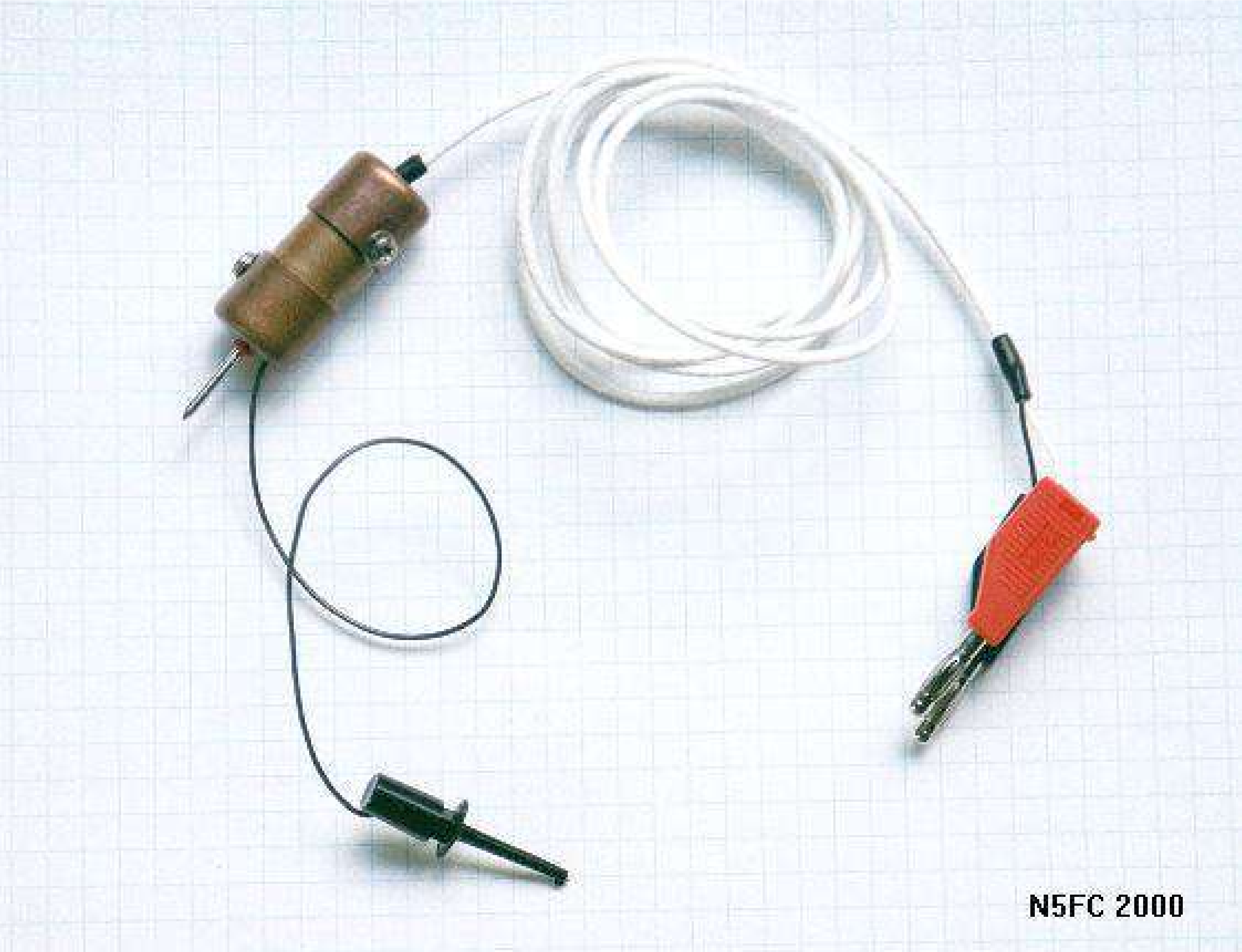


CONNECT FRONT & BACK LANDS
CONNECT FRONT & BACK LANDS
p/o
BNC
100 / 1W
100 / 1W
100 / 1W
100 / 1W
.01
R
RF
DET
OUT
gnd
(front)
CONNECT
F&B LANDS
100 / 1W
100 / 1W
100 / 1W
100 / 1W
D
0.5"
GND
CONNECT
F&B LANDS
(back)
N5FC
2.0"

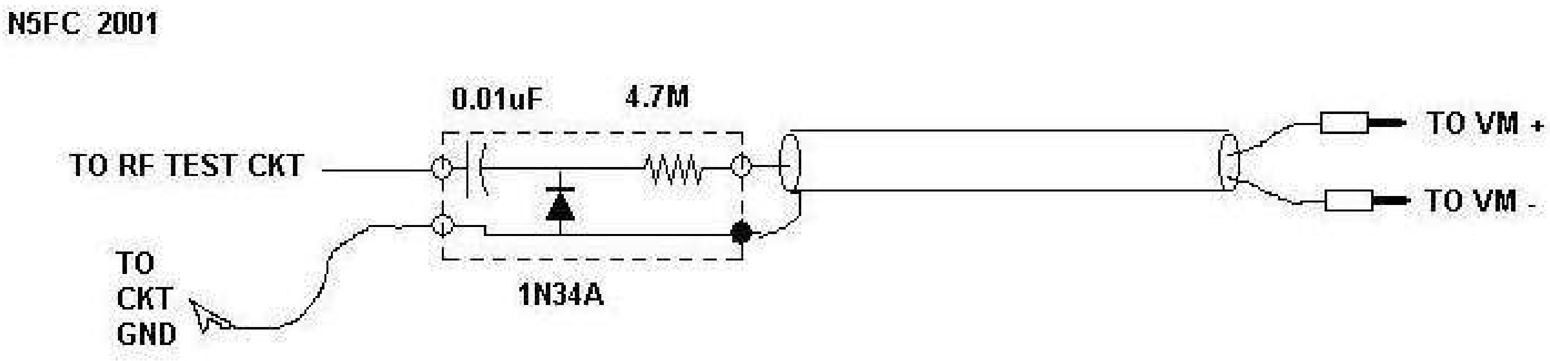

N5FC
QRP DUMMY LOAD
max: 8-Watt (cont)
N5FC 2000


QRP DUMMY LOAD
TO TX
8 EACH
100-OHM
1-W
TOP
SIDE
BOTTOM
SIDE
N5FC 2000


DRILL
THRU
AND
CONNECT
BOTH
SIDES
p/o
BNC
100 / 1W
100 / 1W
100 / 1W
100 / 1W
gnd
(front)
100 / 1W
100 / 1W
100 / 1W
100 / 1W
0.5"
(back)
1.5"
N5FC


N5FC 2000

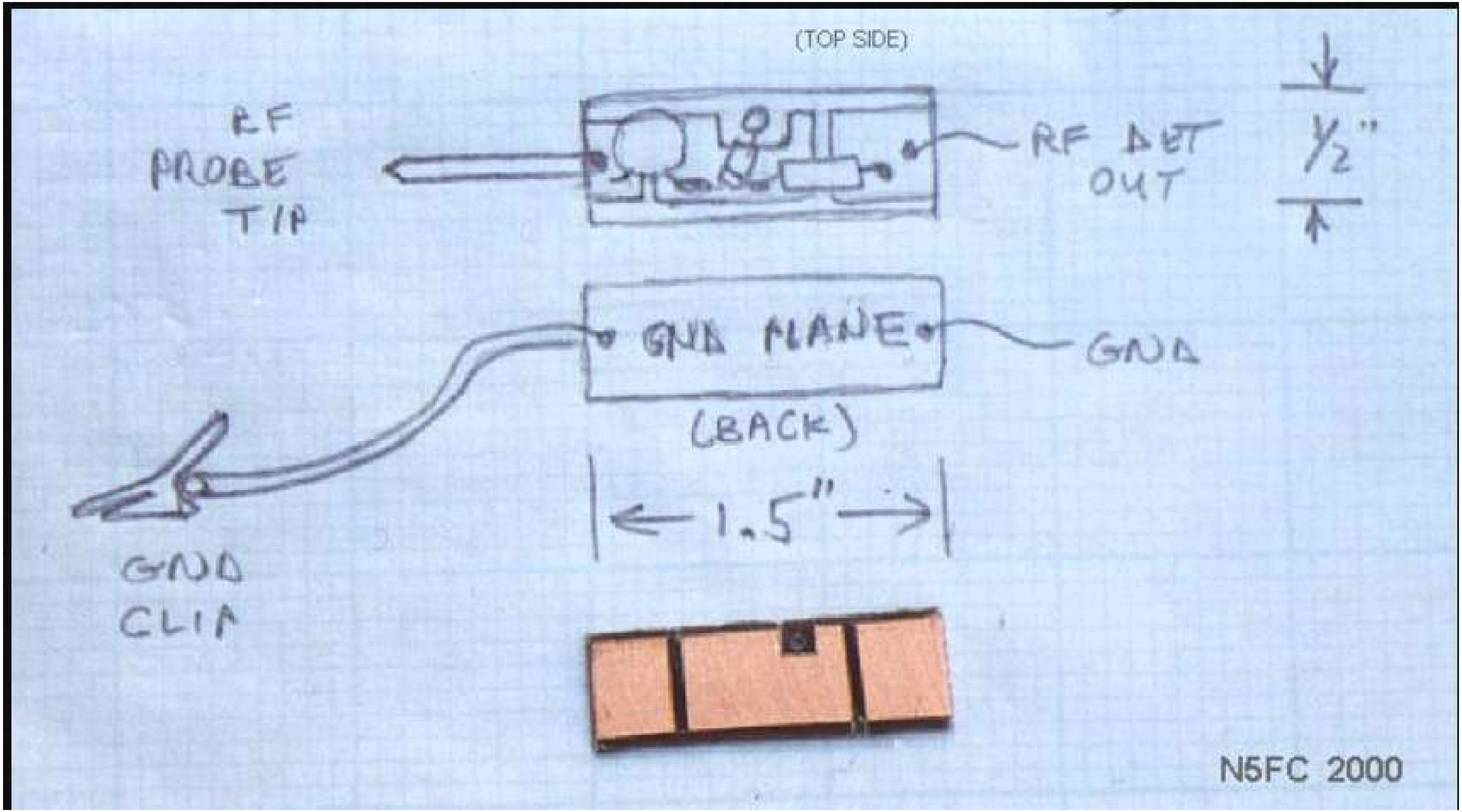
sic RF Probe. Simple, eh?



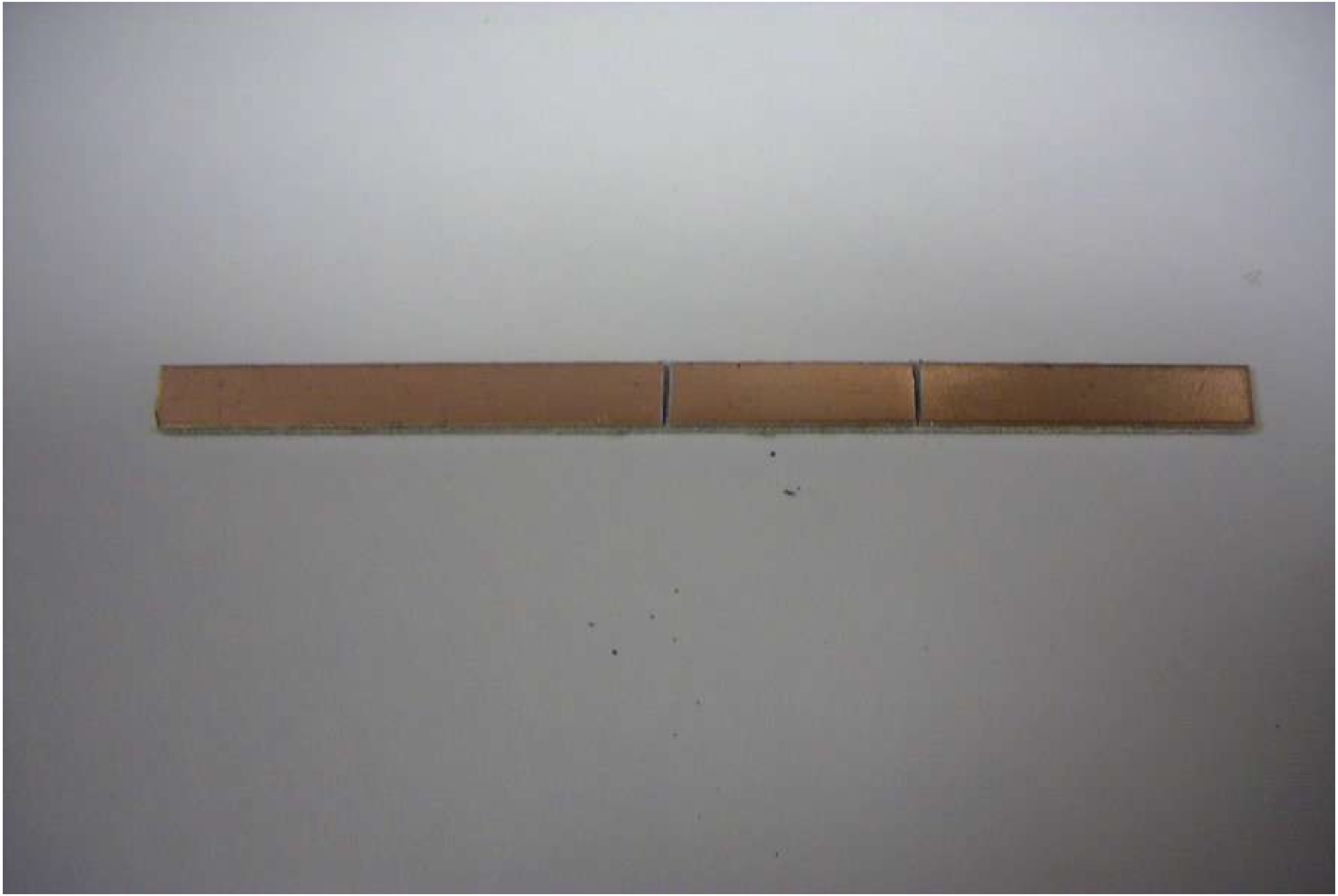
CLASSIC RF PROBE

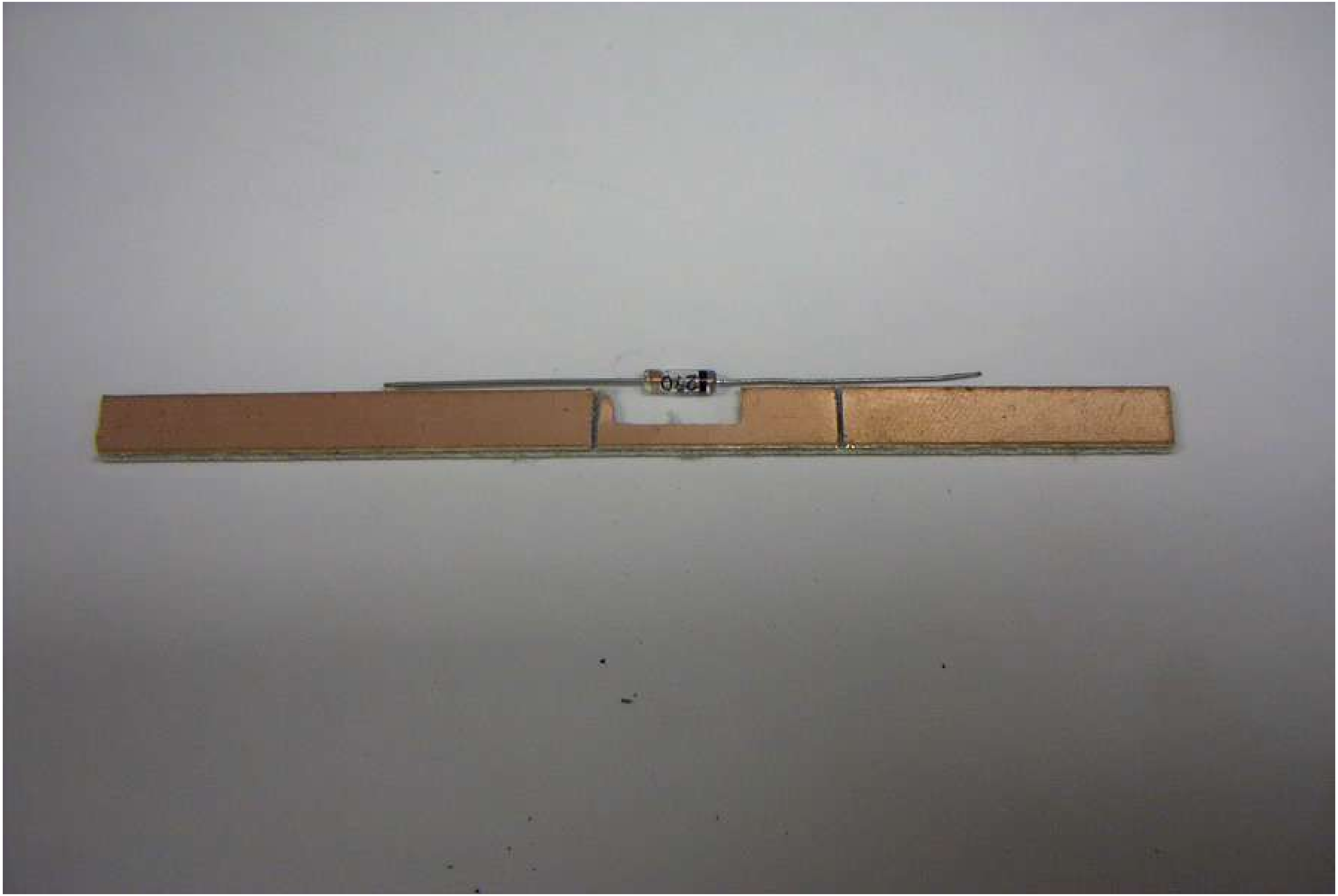
Reads RMS Equivalent Voltage in test circuit, if Voltmeter is 10 -11 Meg Input Impedance;
Reads 4X RMS Equiv Voltage if VM is 1Meg Input Impedance (Set VM to measure DCV)

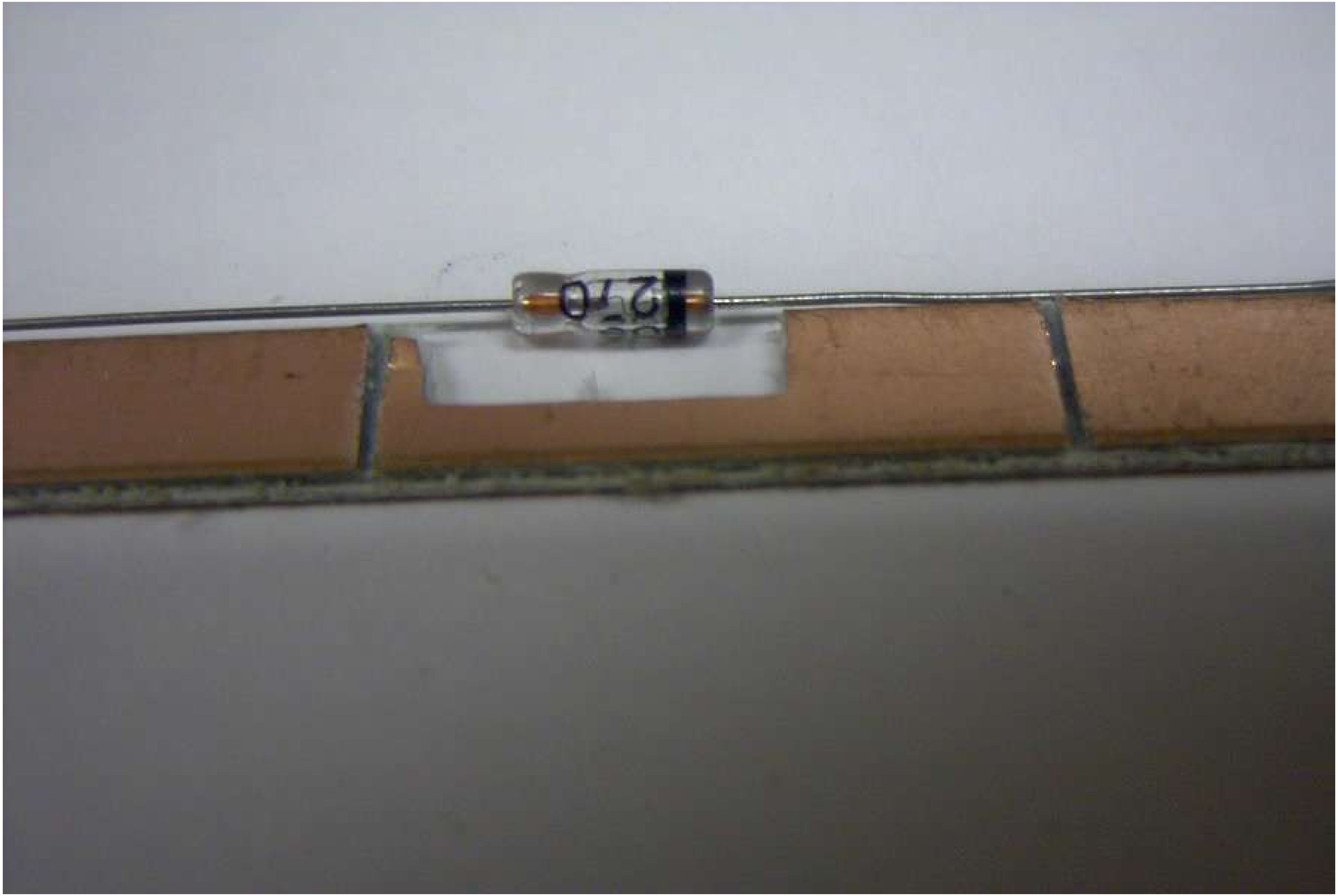
oretical discussion that we'll make short note of. Obviously, for "probing" we need a "probe". (Hey! No wonder I get paid the big bucks...). We add a SH
obe goes to our test circuit, where we're probing. Brilliant! We don't want either of these to be long leads, because we're talking RF here, and long leads =

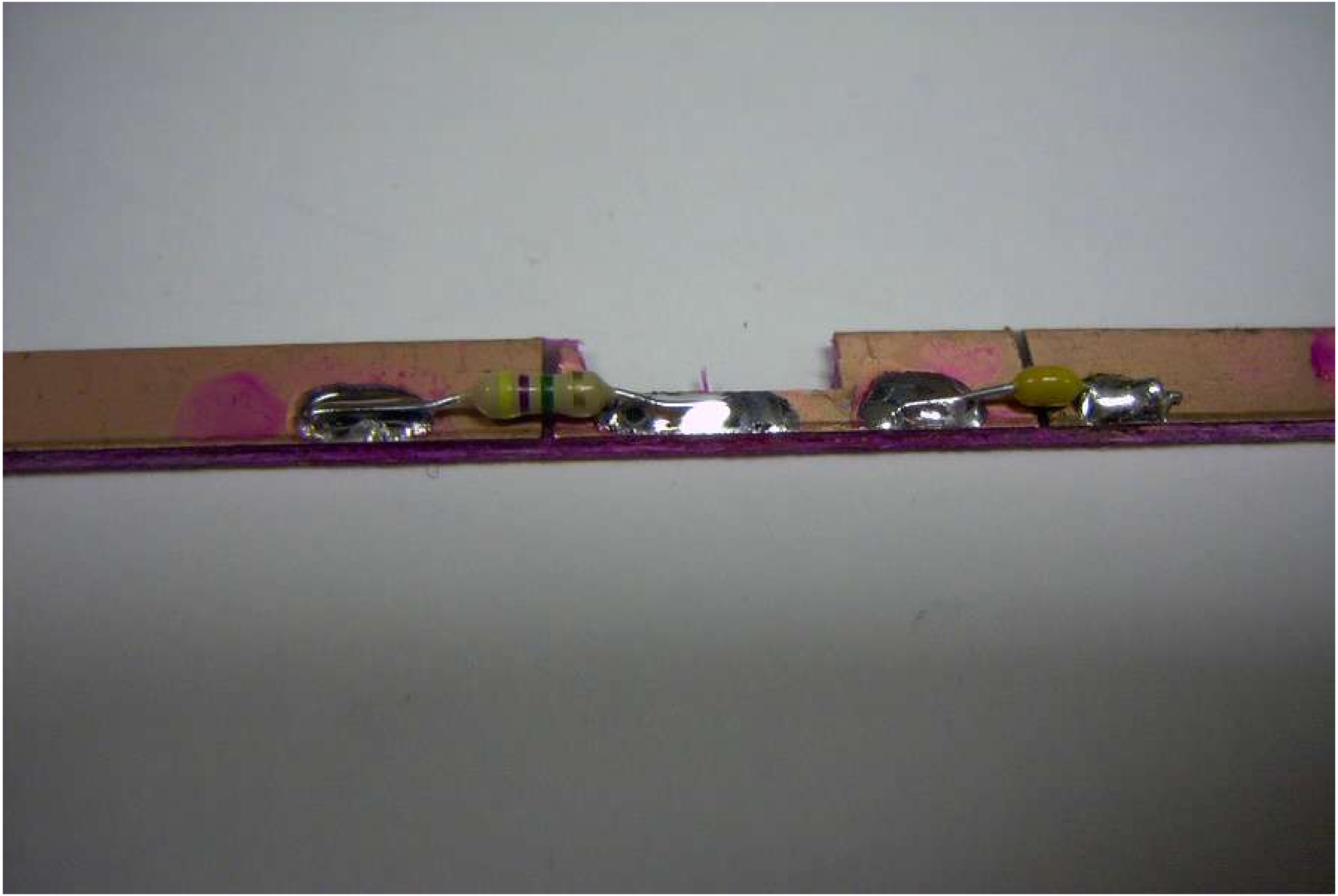

(TOP SIDE)
RF PROBE TIP
RF DET OUT
1/2"
GND PLANE
GND
(BACK)
1.5"
GND CLIP
N5FC 2000

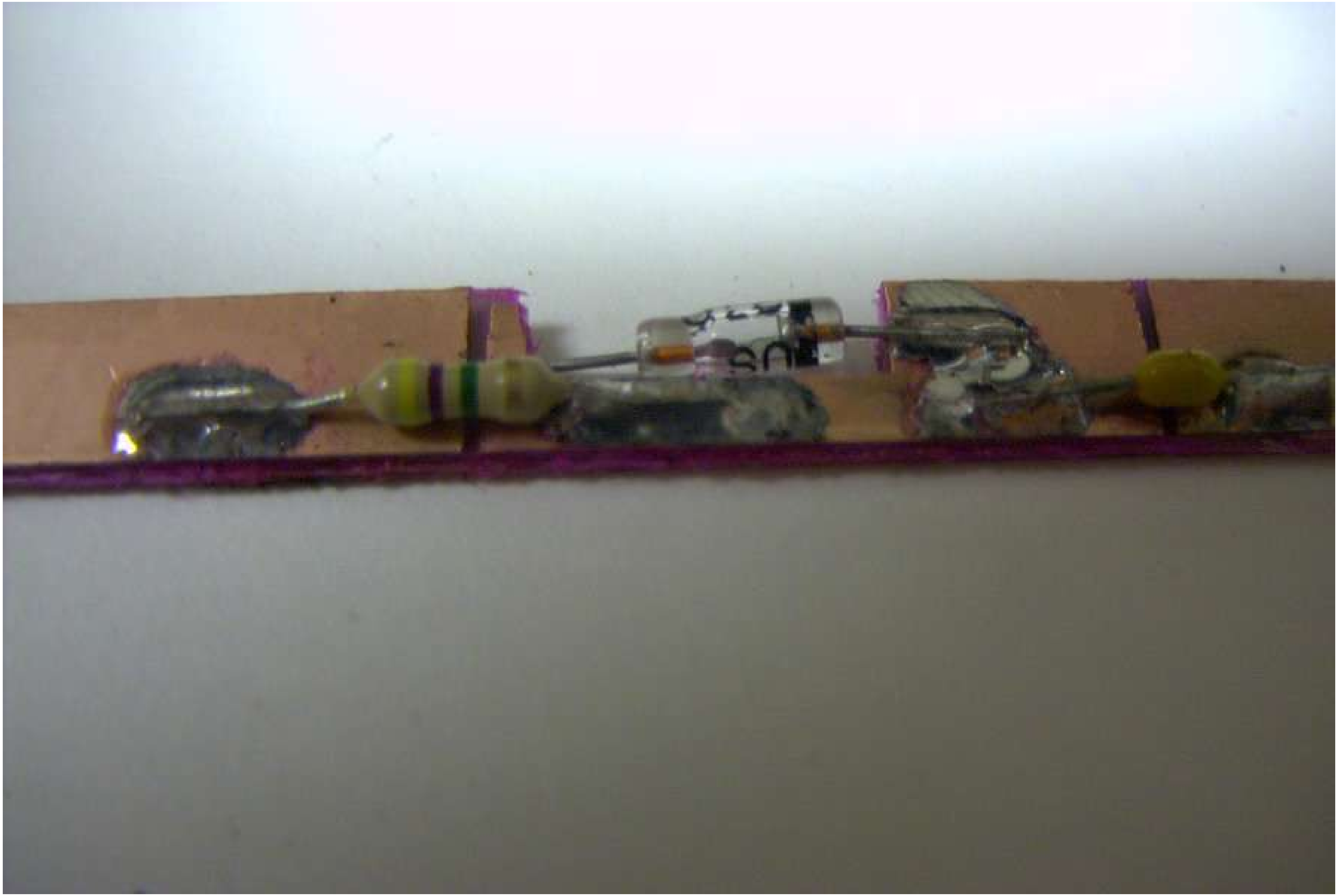

BIC round stic med/moy USA

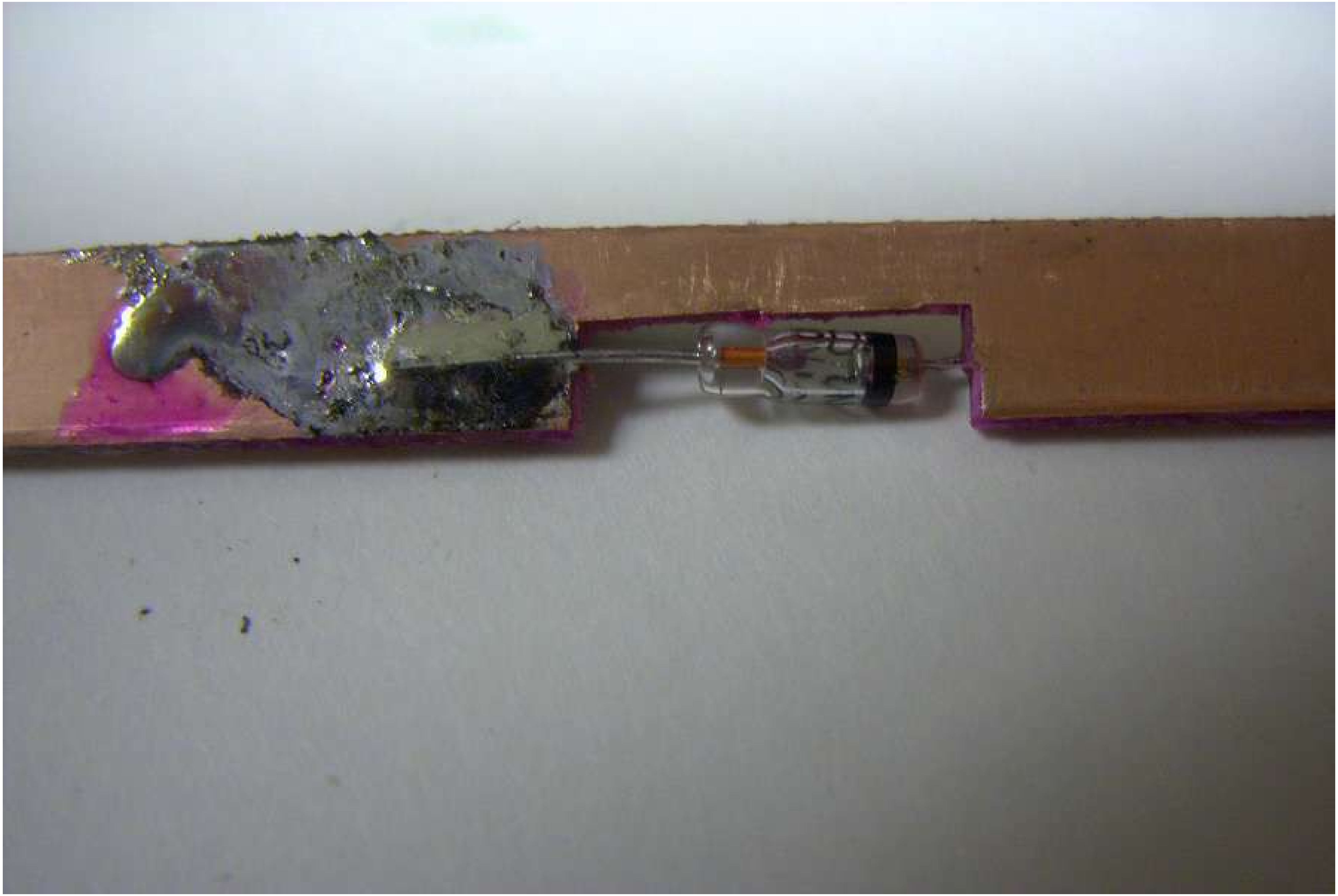










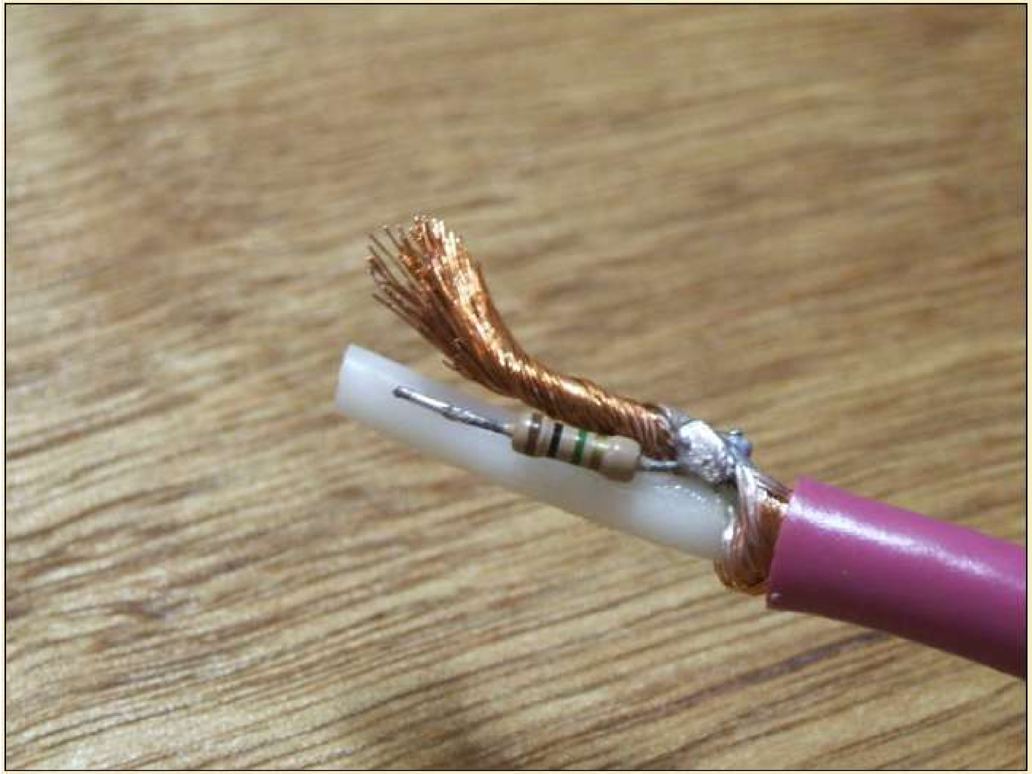
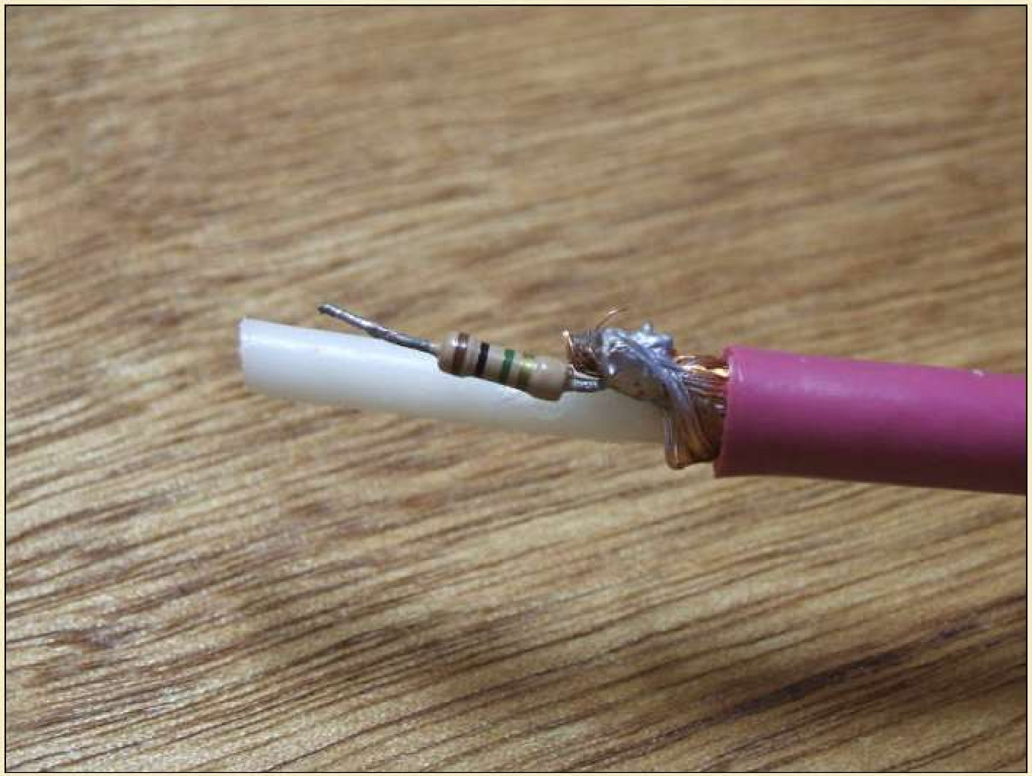


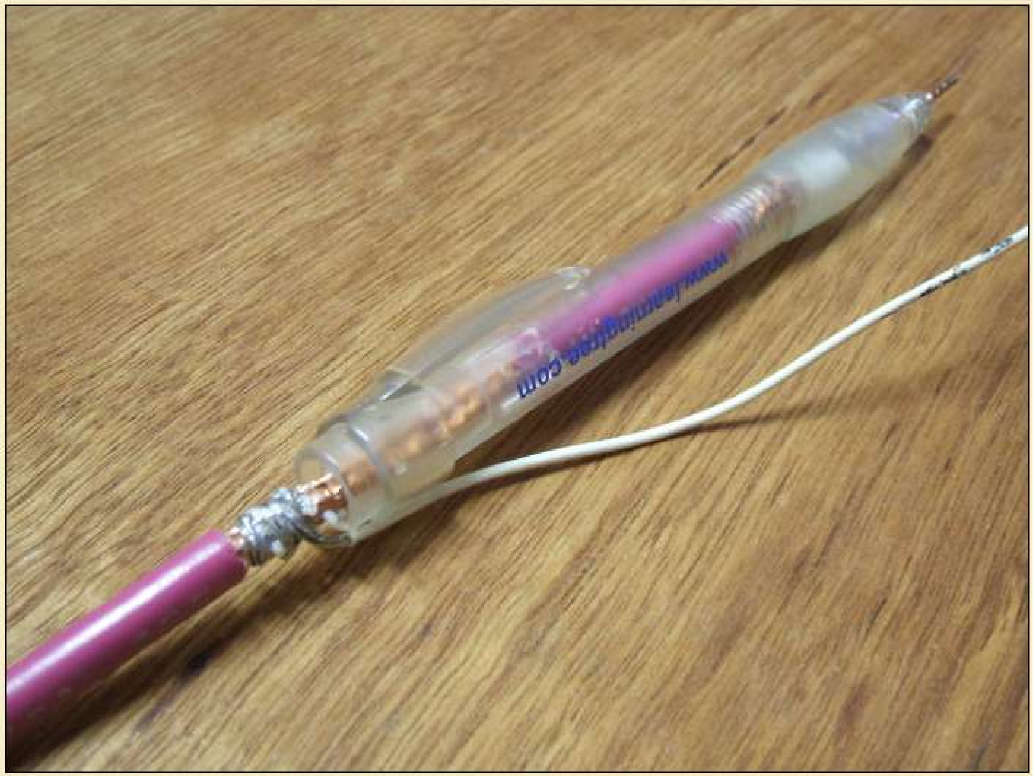
How to Build Your Own Oscilloscope Probes

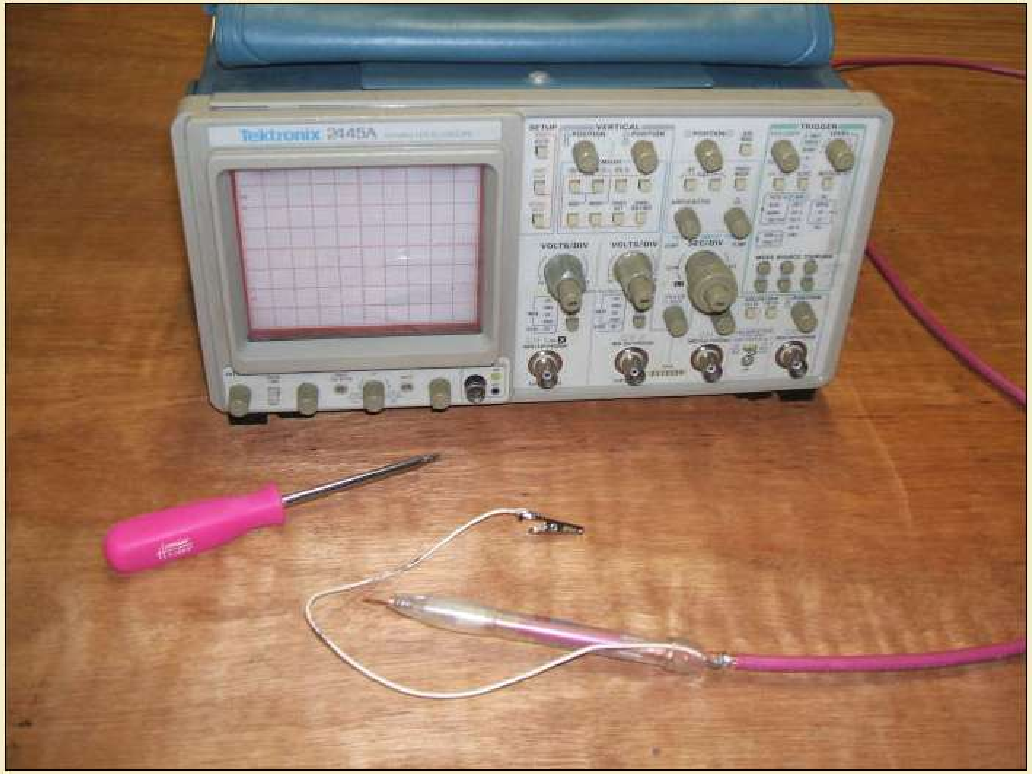
Here is the complete bill of materials:

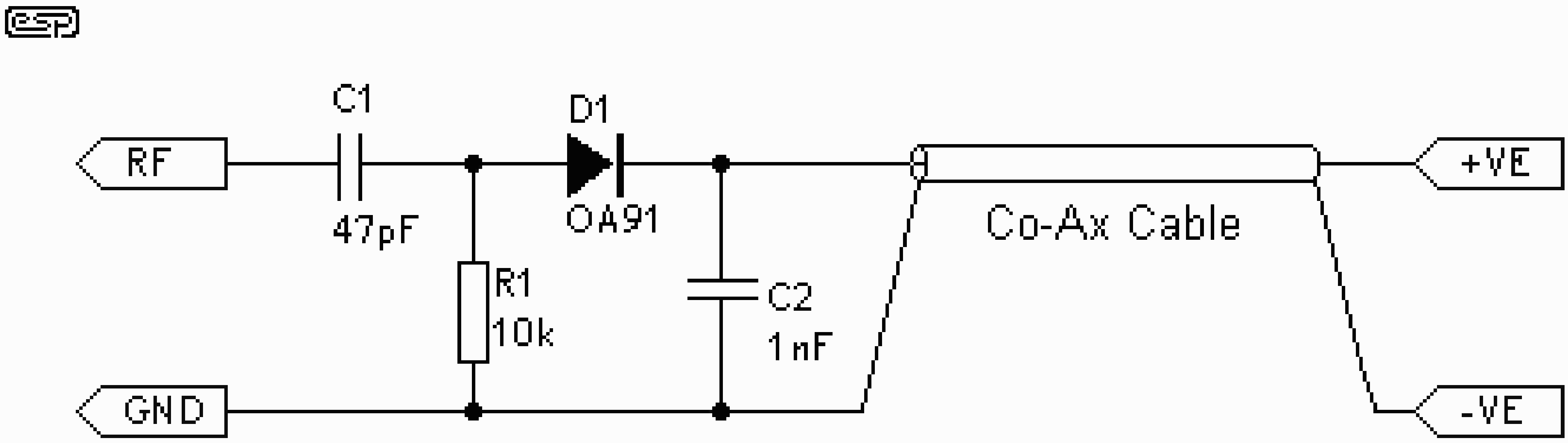
- The pen
- A 2-meter piece of coaxial test cable with a BNC connector on one end
- Epoxy adhesive
- One alligator clip
- Copper-plated nail — 0.75" (20mm) long, packed as "weather-stripping nail".
- 1 MΩ and 5 MΩ resistors


GB
Alligator Clips



www.learningtree.com


Tektronix 2445A
VOLTS/DIV
VOLTS/DIV


esp
C1
D1
RF
+VE
47pF
OA91
Co-Ax Cable
R1
C2
10k
1nF
GND
-VE

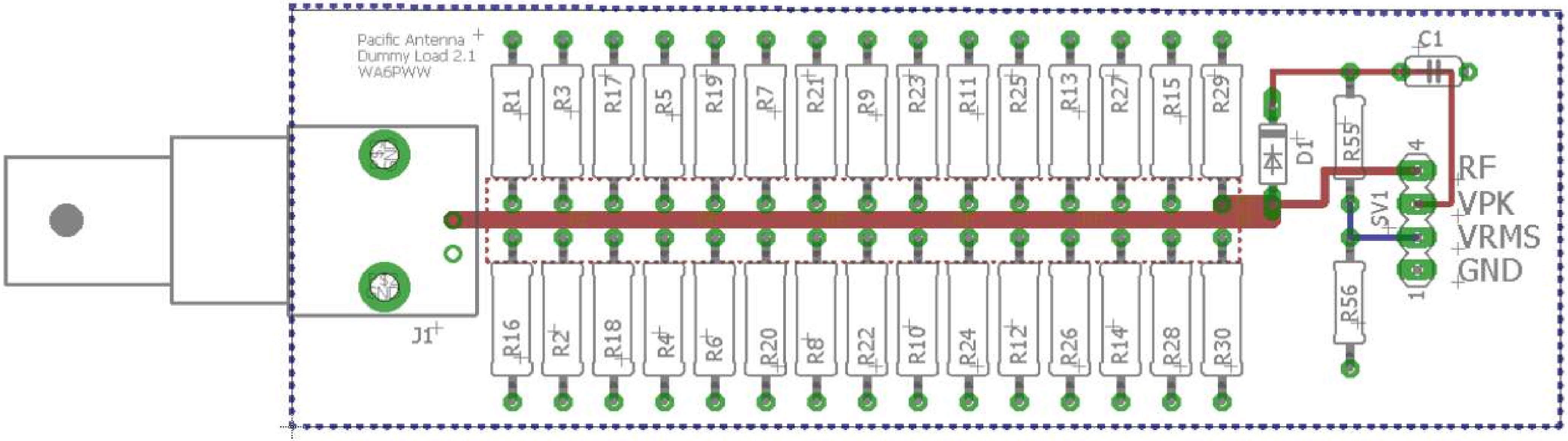
Pacific Antenna 15 Watt Dummy Load Kit

Inspection and Inventory

First, check the kit to be sure all parts are included. Should anything be missing, please contact us for a replacement.

30 – R1-R30, 1.5 K 1/2 watt resistors: Brown-Green-Red-Gold
1 – R55: 41.2K 1/4W, 1% resistor: Yellow-Brown-Red-Red--Brown
1 – R56: 100K 1/4W, 5% resistor: Brown-Black-Yellow-Gold
1 – D1: 1N4148 diode
1 – C1: 0.01uF monolythic capacitor, yellow, (marked 103)
1 – J1: BNC board mount connector
1 – SV1: 4 pin header
1 – Circuit board

Board Layout



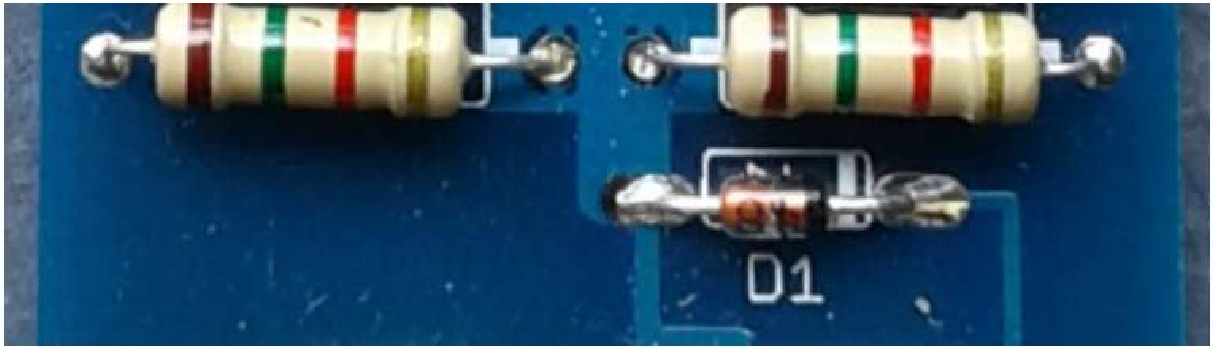
Assembly

Install R1- R30
These are the 1/2W. 1.5K ohm resistors and they go in the marked locations shown on the circuit board.

You may find it helpful to do one row of the resistors at a time to make soldering the leads easier.

First, pre-bend the leads near the resistor bodies and then insert them into the board.

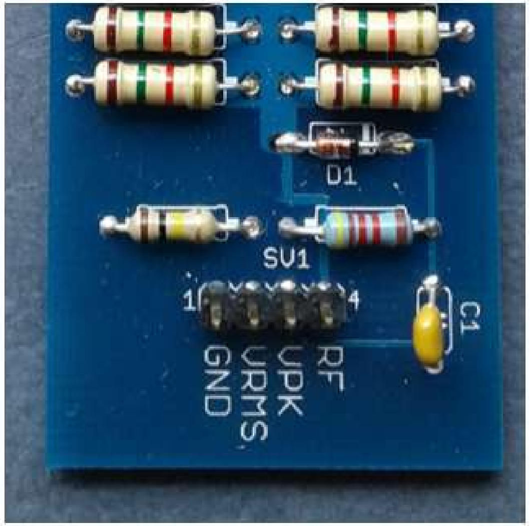
Install, solder and trim the leads of D1. Be sure to match the band end to the diagram above and the outline on the circuit board.



Install R55 the 41.2K ohm (Yellow-Brown-Red-Red—Brown) resistor in the marked location on the board

Install R56, the 100K resistor (Brown-Black-Yellow-Gold) in the marked location on the board.

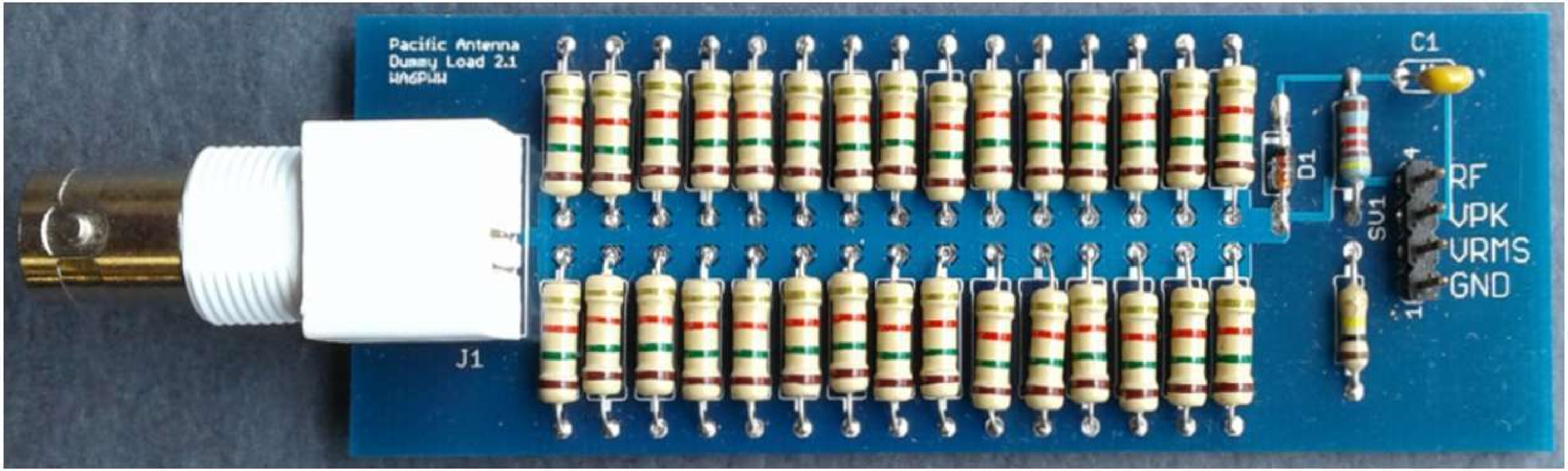
Install C1 the 0.01uF capacitor in the location marked on the board.



Now, solder the BNC connector, making sure to seat it fully into the board. Solder the two small wires and the two support pins.

The support pins may require longer time, increased temperature or a larger soldering iron to properly solder.

Congratulations, your dummy load kit is now complete!



Operation

The dummy load is easy to use. Simply connect your transmitter input to the BNC

To measure RF Power, connect your multimeter to pin 1 and Pin 2 or 3.

Pin 1 is ground and the DC output voltages appear on pins 2 and 3 of SV1.

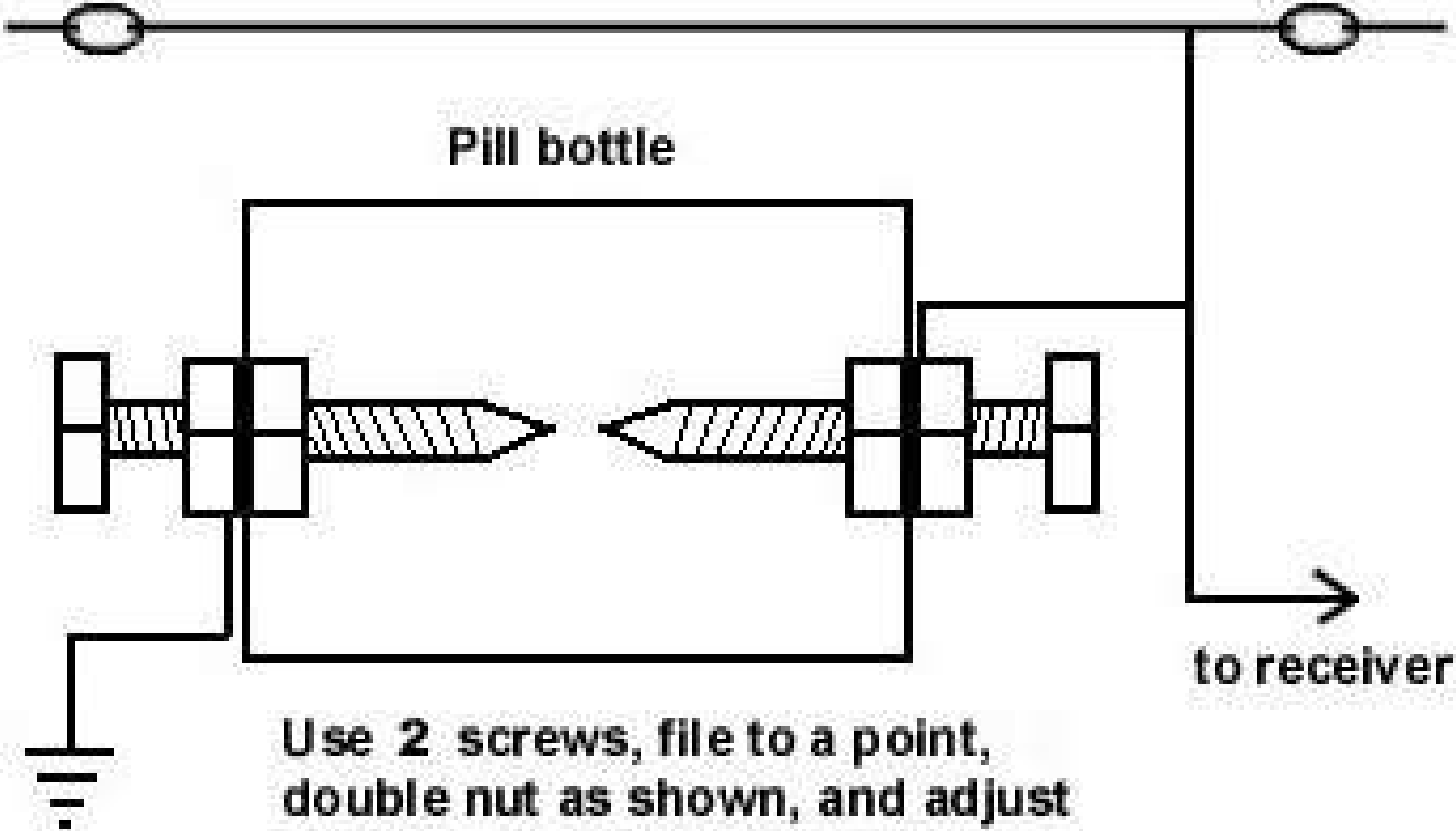
Pin 2 provides the RMS value of the RF voltage.

Pin 3 gives the Peak value of the RF voltage.

Pin 4 is direct RF voltage across the resistors.

RF power is calculated from this relationship: Power = (Vrms^2)/50

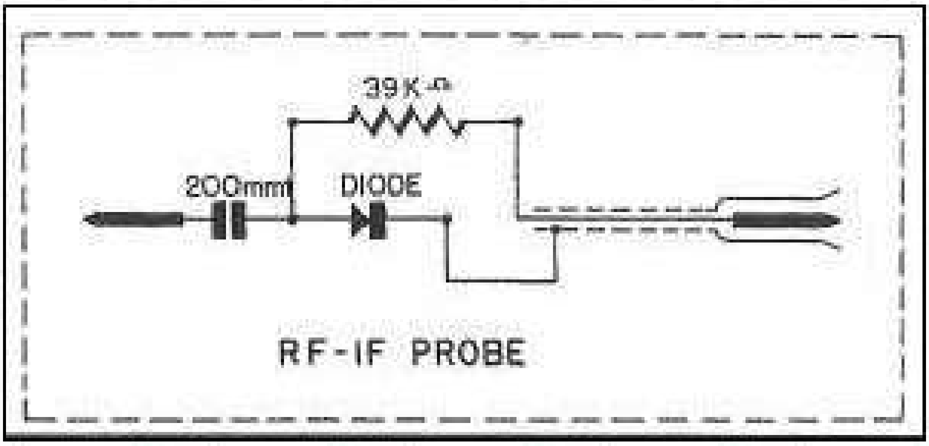
Note: The power input should be limited to 15W to avoid damaging the resistors and sense circuit components.



Use 2 screws, file to a point, double nut as shown, and adjust gap to about 1/4"


R.F. BANDS
R.F. BANDS
Signal Generator & Tracer
A.F. ATTENUATOR
PREAMP
OUTPUT

Accurate Instrument model 153 and its RF probe schematic courtesy of John Lescaud.



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- Separate R.F. and Audio Signal Probes

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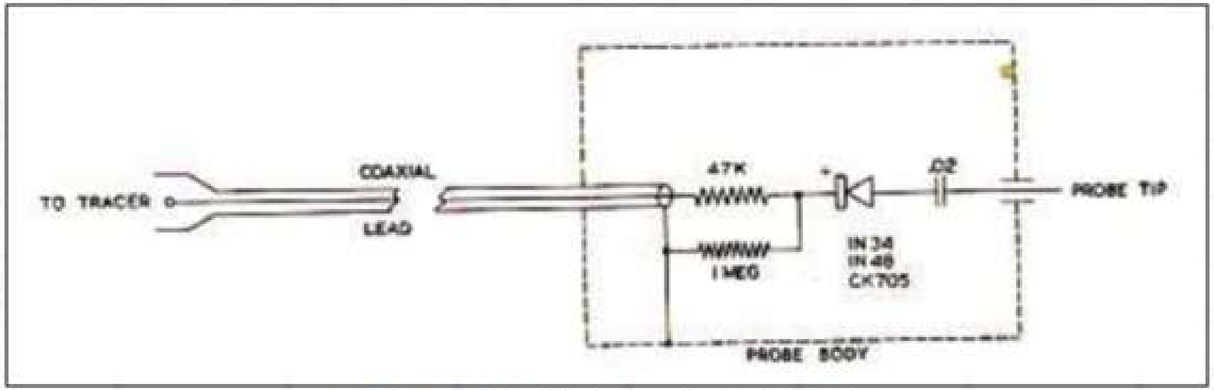
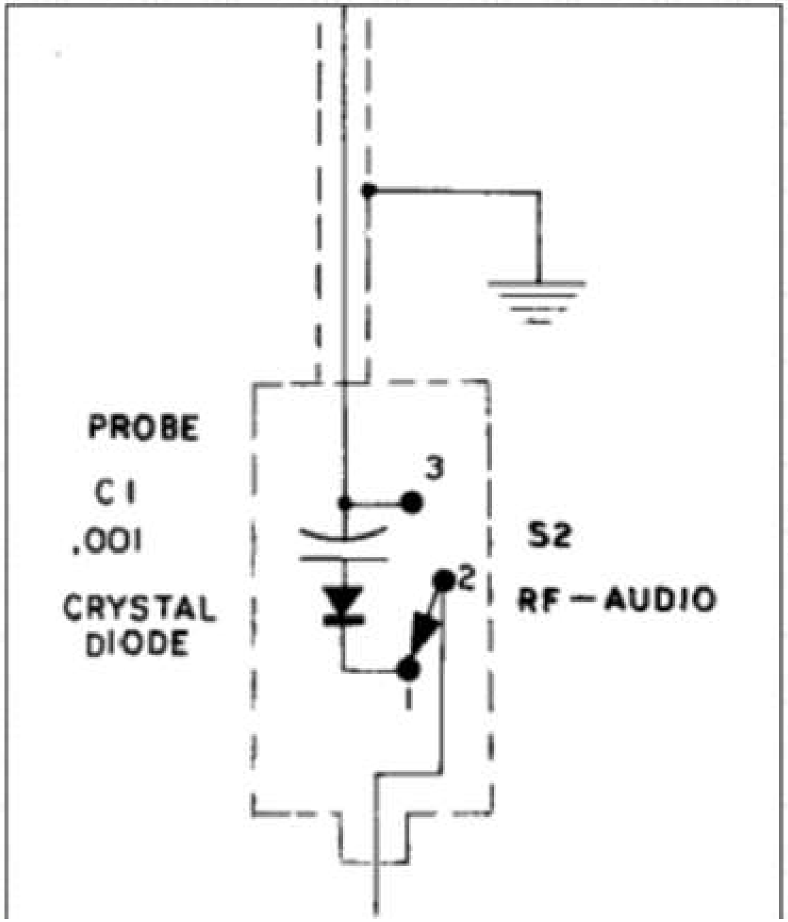
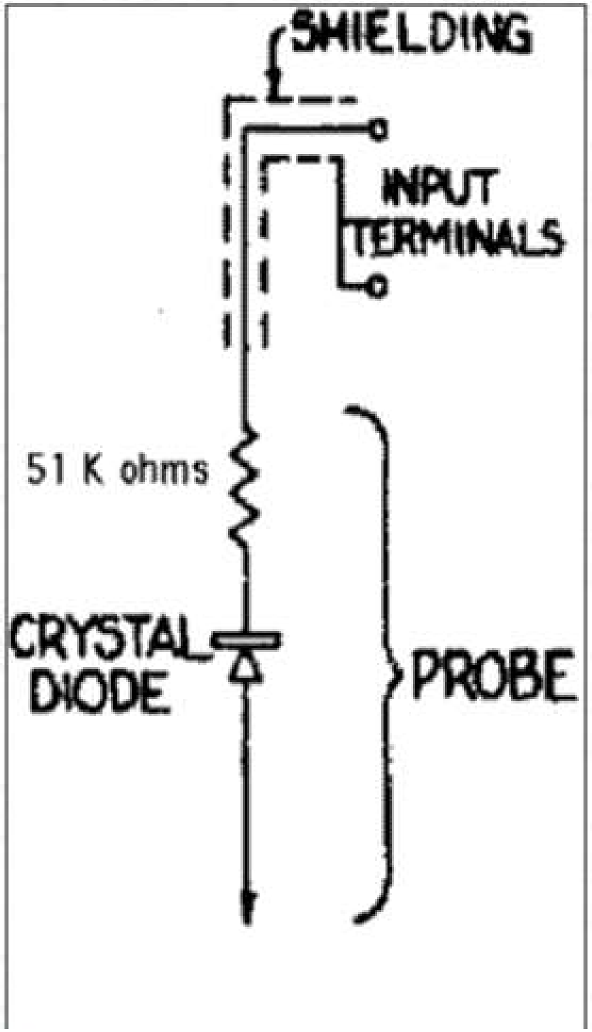
SPECIFICATIONS

ANGE: Band A: 250KC to 850KC; B: 850KC-3000KC; C: 3.0MC to 11MC; D: 11MC o 35MC; E: 35MC to 120MC; 400cps audio signal; modulation slide switch, F/AF attenuator and power switch; Signal output jack; AF input jack, 2 Preamp. utput jacks. 4½" alnico 5 speaker. Tubes: 5687, 6350, 6AG5 plus sel. rectifier.

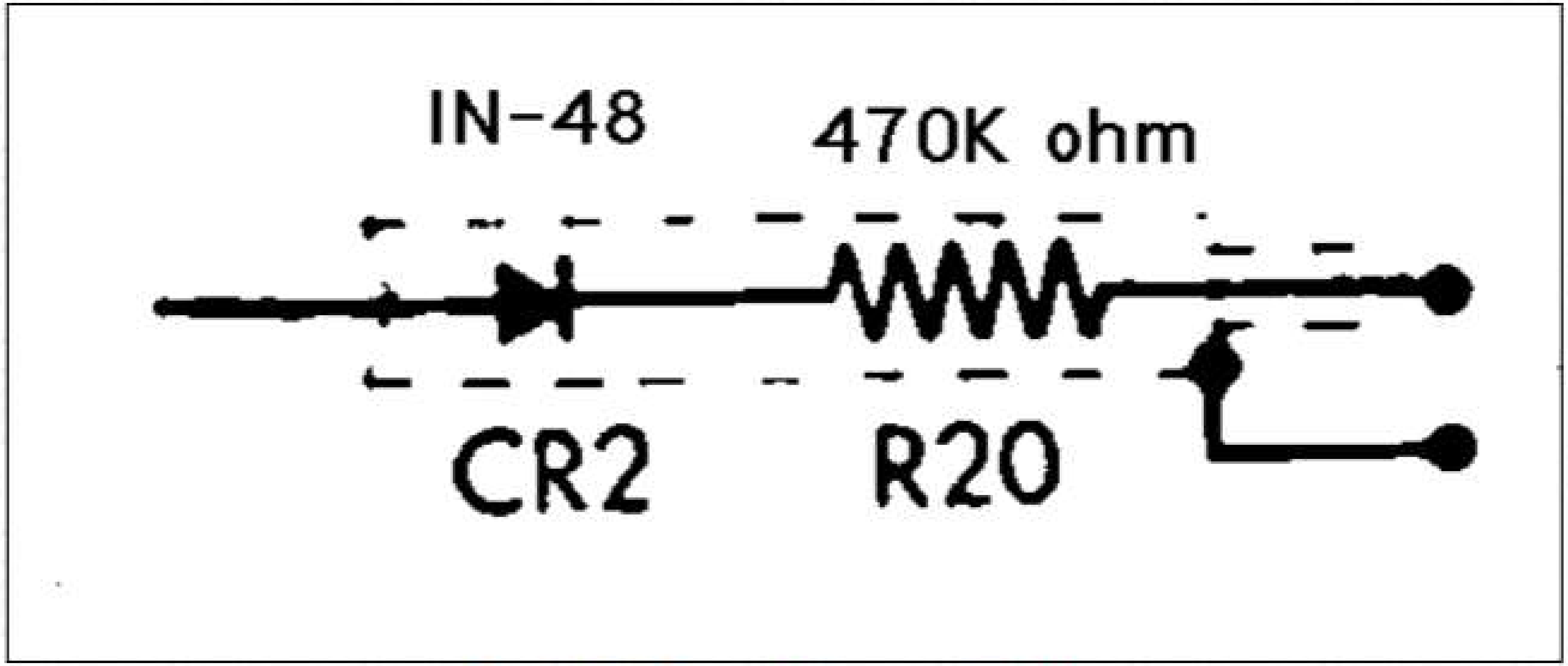


Heath T-3 signal tracer probe

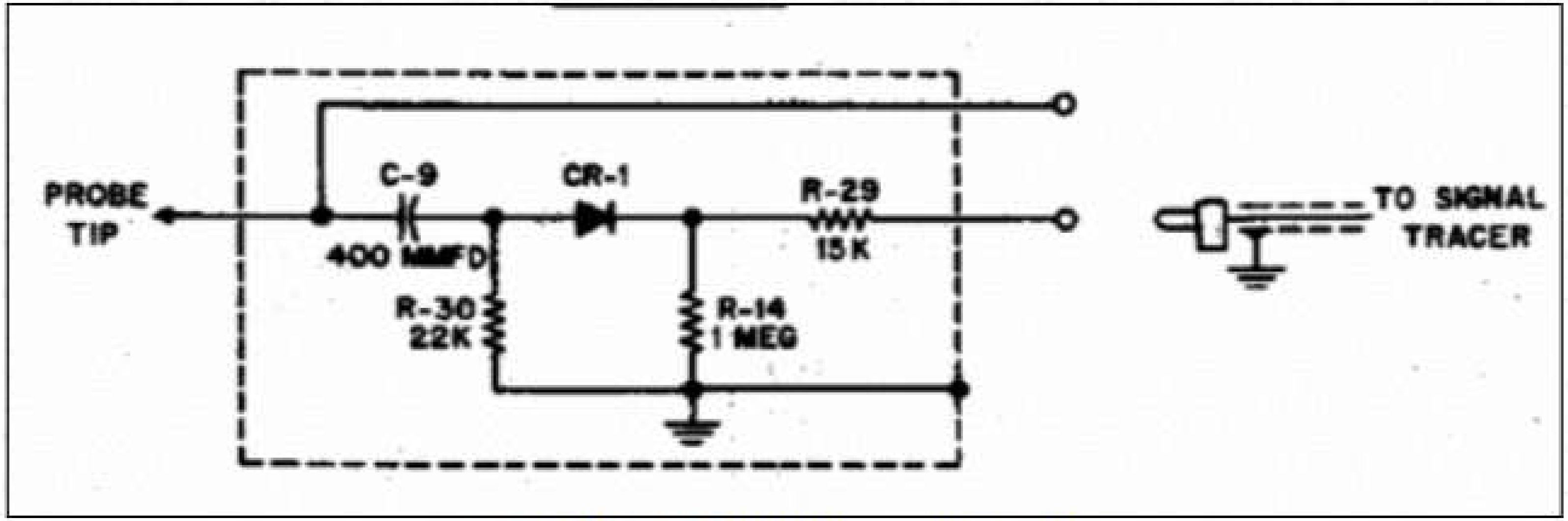




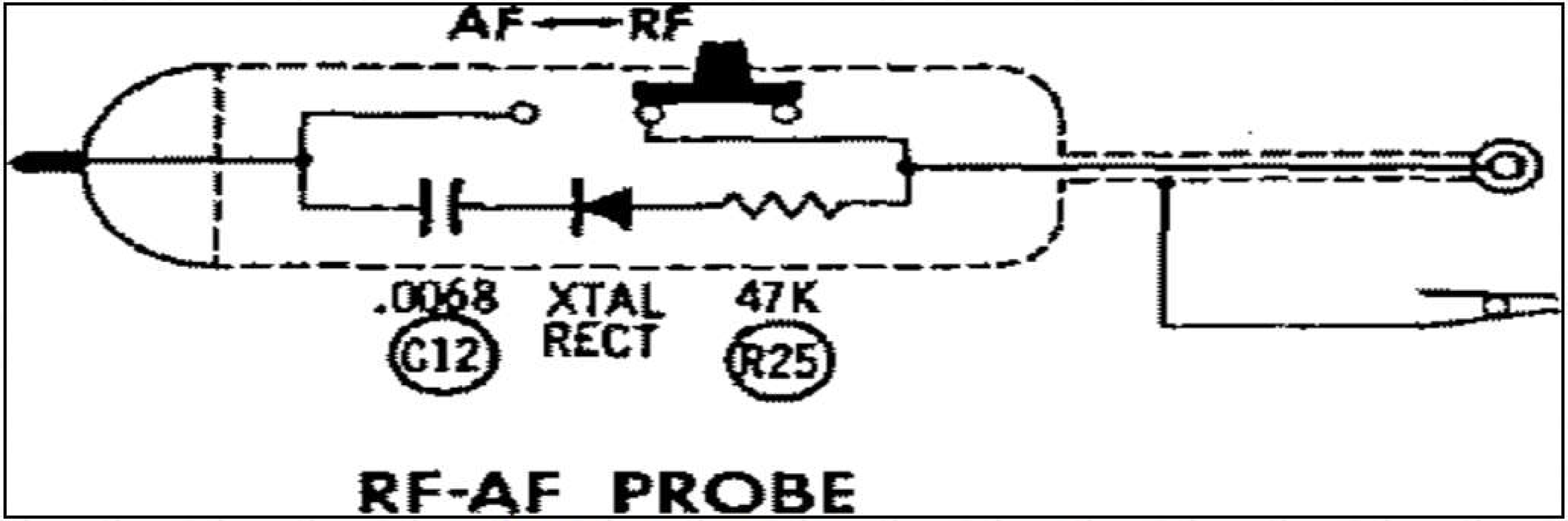
Heath T-4 or IT-12 signal tracer probe (left) - - - - Eico 145 signal tracer probe (right)



Eico 147a signal tracer probe

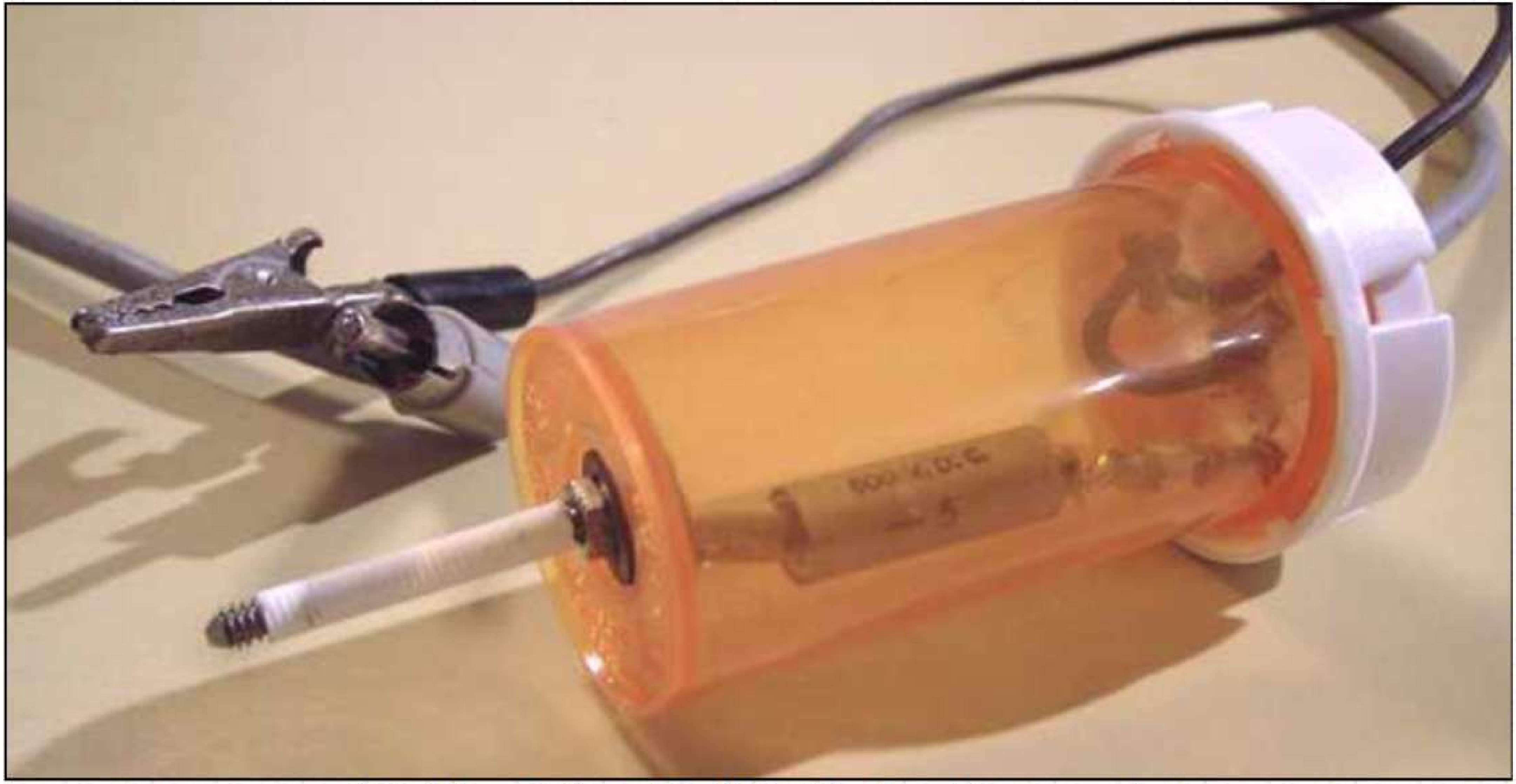


Knight-kit signal tracer probe



PACO Z-80 signal tracer probe

Pill bottle signal tracer probe



KIS (Keep It Simple) pill-bottle signal tracer probe

As you can see in figures 3 and 4, there is not much to this 120V$_{AC}$ to 12V$_{DC}$ adaptor.

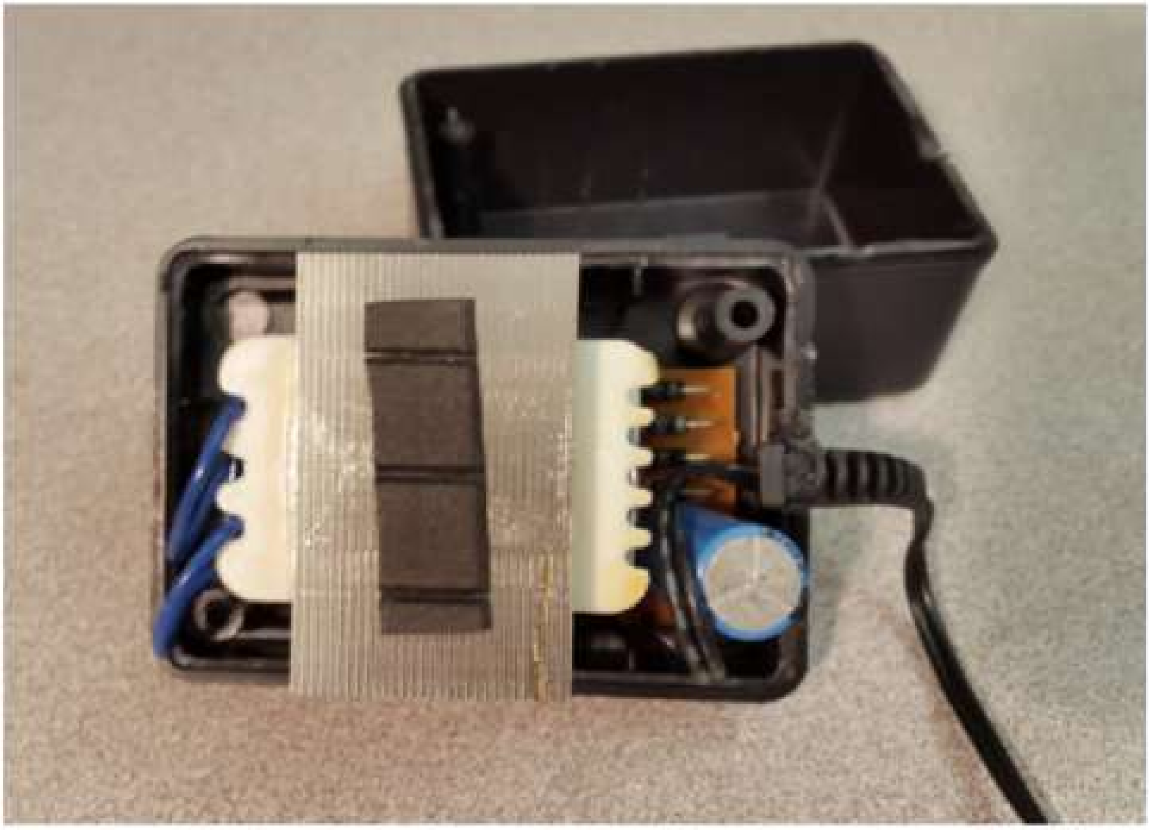


Figure 3. Top View of the Inside of the AC Adaptor

Figure 4. AC Adaptor Components Spread Out

The Bridge Rectifier

The next stage in the wall adapter is the bridge rectifier. This device takes the AC output of the transformer and converts it into a DC voltage. It does this using an arrangement of diodes that force the current to pass through the load in one direction only. Figure 8 shows the diodes in the adaptor along with a schematic representation of how the diodes are connected together.

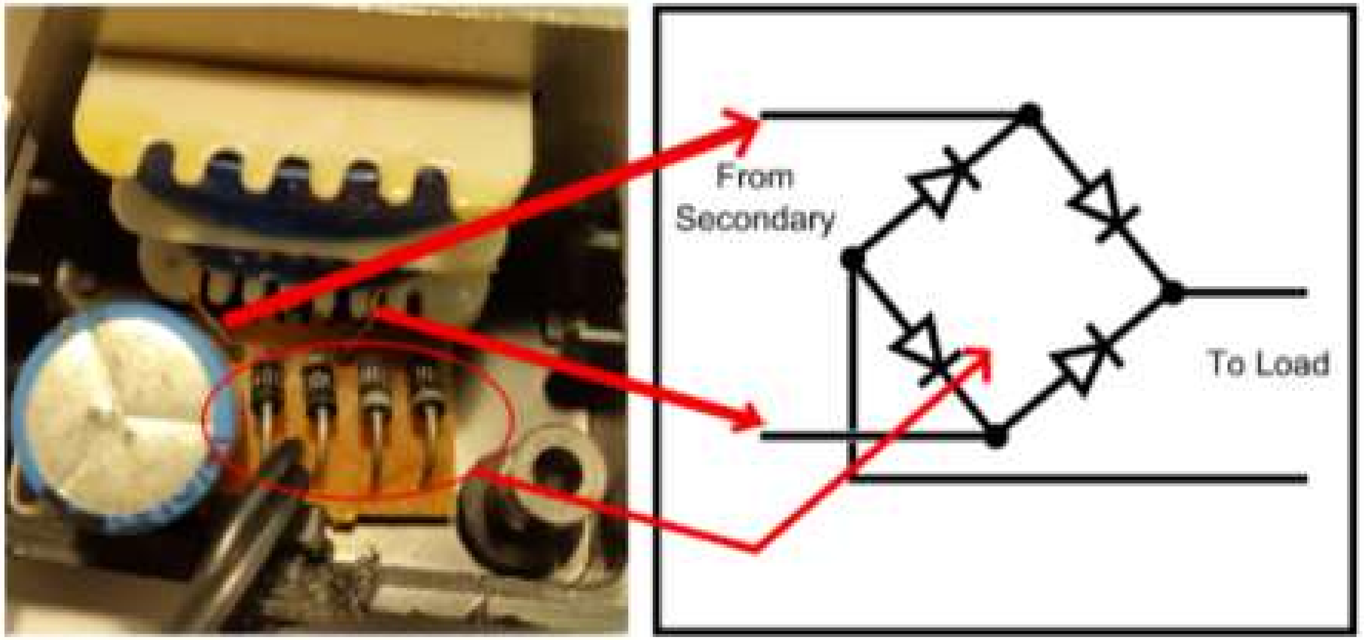


Figure 8. Full Bridge Rectifier Circuit and Schematic

The bridge rectifier in this wall adapter is made of four individual diodes (part number 1N4001), but sometimes the rectifier is a basic integrated circuit with the four diodes manufactured all in one device like in figure 9.

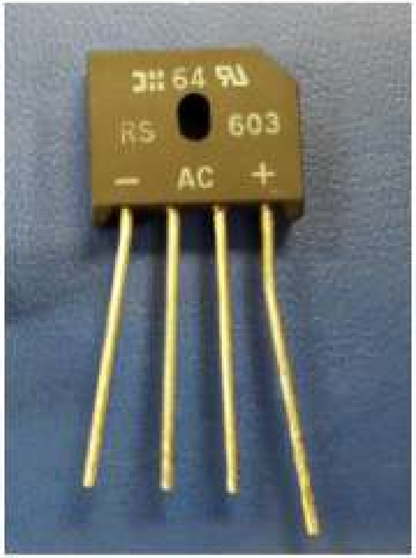


Figure 9. Bridge Rectifier in an IC

The output of the rectifier is only DC in the sense that current to the load is forced in one direction. The voltage is still varying a large amount as can be seen in figure 10. Effectively what the rectifier did was to take the negative portion of the voltage and flip it around to make it positive as shown in the figure below. The voltage still swings between 0V and the peak. Further processing must be done on the voltage to minimize the voltage swing and that is what the next stage does.

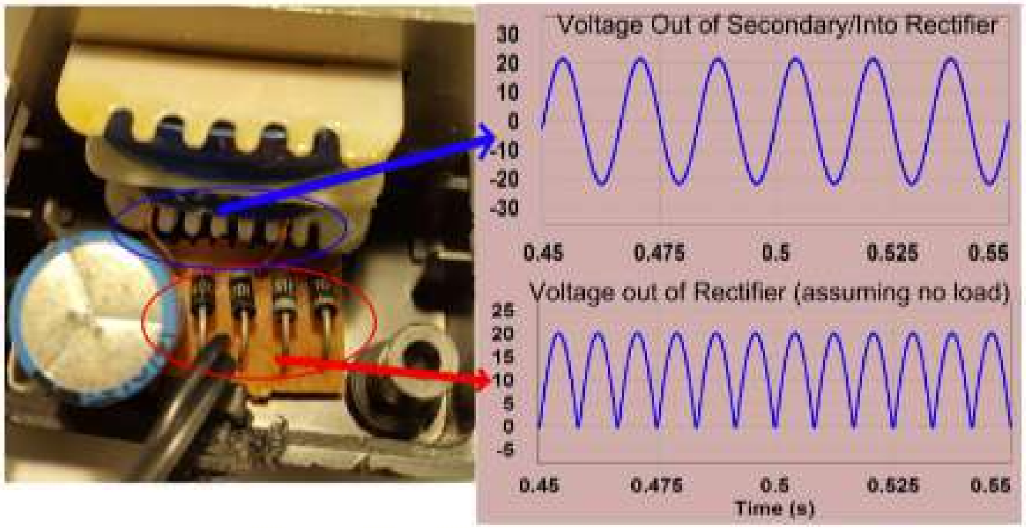


Figure 10. Rectifier Circuit Showing Input and Output Voltages.png

The Capacitor

The next problem to solve is how to take that varying voltage and smooth it out so that the load receives a more or less constant voltage. The main component in this fight against this ripple is the capacitor. The capacitor is the tall blue cylindrical component in figure 11 below:

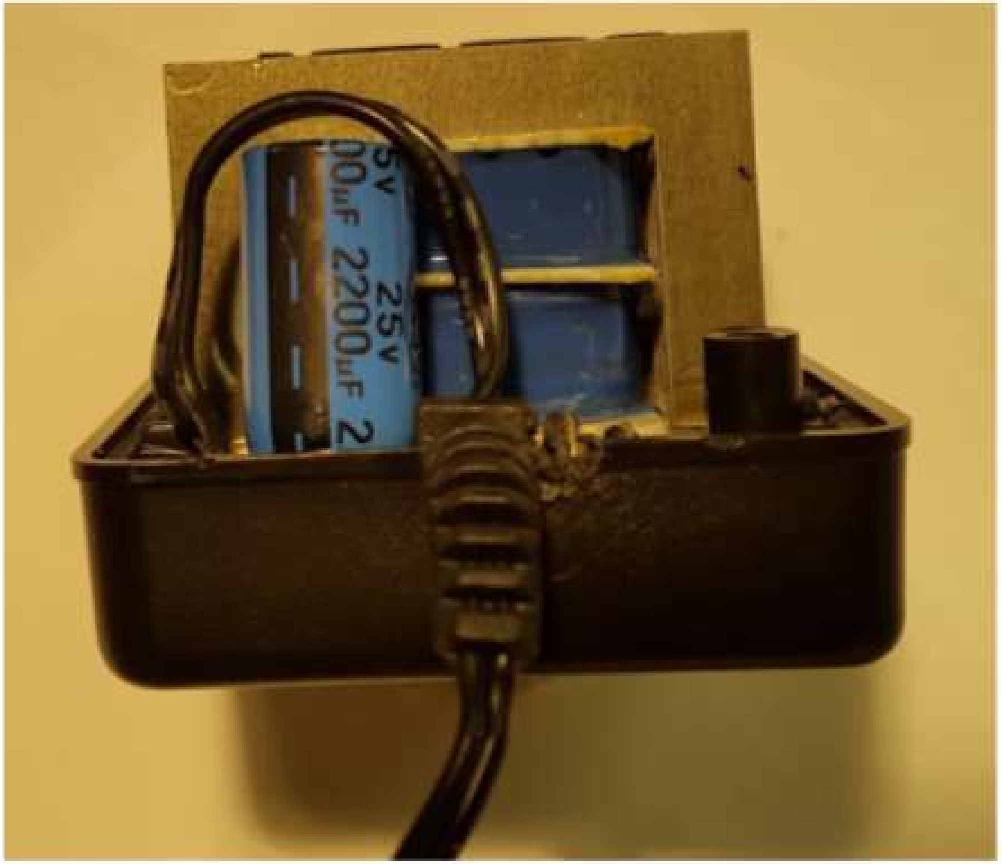


Figure 11. Capacitor in AC Adaptor

The capacitor in this wall adapter is a 2200 uF electrolytic capacitor. Electrolytic capacitors are typically used because it is possible to have a relatively high capacitance (100s or even 1000s of uF) and reasonable voltage tolerance (10's of volts) at an affordable price. For example, a quick search on an electronic component supplier's website shows me that a 2200 uF capacitor that can tolerate up to 50V is under $3 if it is an electrolytic capacitor and more than $250 if it is a film capacitor. The primary downside of electrolytic capacitors is that they have a much shorter life expectancy than film capacitors. In fact electrolytic capacitors are likely to be the component that fails first in any electronic system. Generally manufacturers

Transformer

Figure 5 shows the same adaptor seen from the side. The blue wires on the right are the inputs from the two-prong wall connection and they connect directly to the primary of the transformer. The output from the secondary can be seen at the lower left of the transformer as two small copper wires. The purpose of the transformer is to step the AC voltage down from the $120V_{RMS}$ from the wall outlet to a voltage that is closer to the required DC voltage.

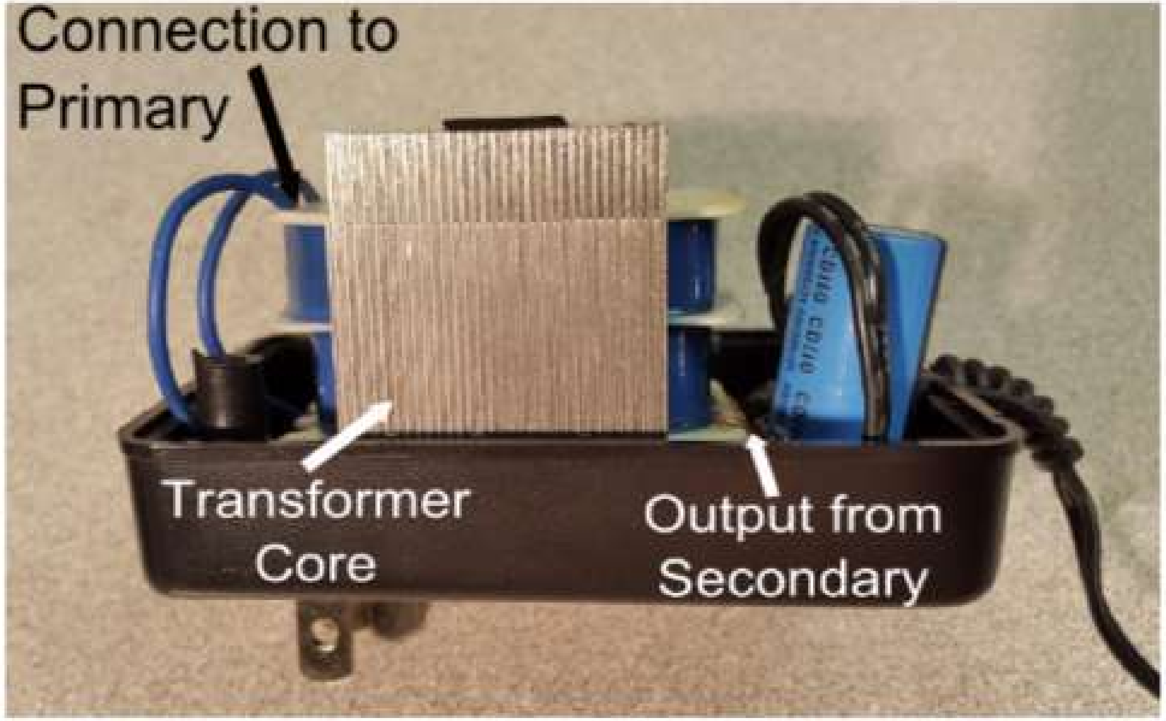


Figure 5. Side View of AC Adaptor with Transformer Labeled

If you ignore all of the non-ideal properties of transformers, they are very simple devices. The general idea is that there are two (usually large) coils of wire that are electrically isolated, but magnetically coupled together. The input side of the transformer is called the primary and the output side is called the secondary. Alternating current passes through the primary coil which creates an alternating magnetic flux in the transformer core. This alternating magnetic flux in turn induces a voltage in the coils of the secondary. The ratio of the number of loops in the primary coil to the number of loops in the secondary coil is equal to the ratio of the input AC voltage to the output AC voltage. In equation form this relationship is:

Full Circuit Recap

The preceding sections of this article show that the transformer, the rectifier and the capacitor are all that are required for a basic AC-DC converter. This final picture and schematic shows the end to end voltage processing done by the converter as it converts AC voltage into DC voltage.

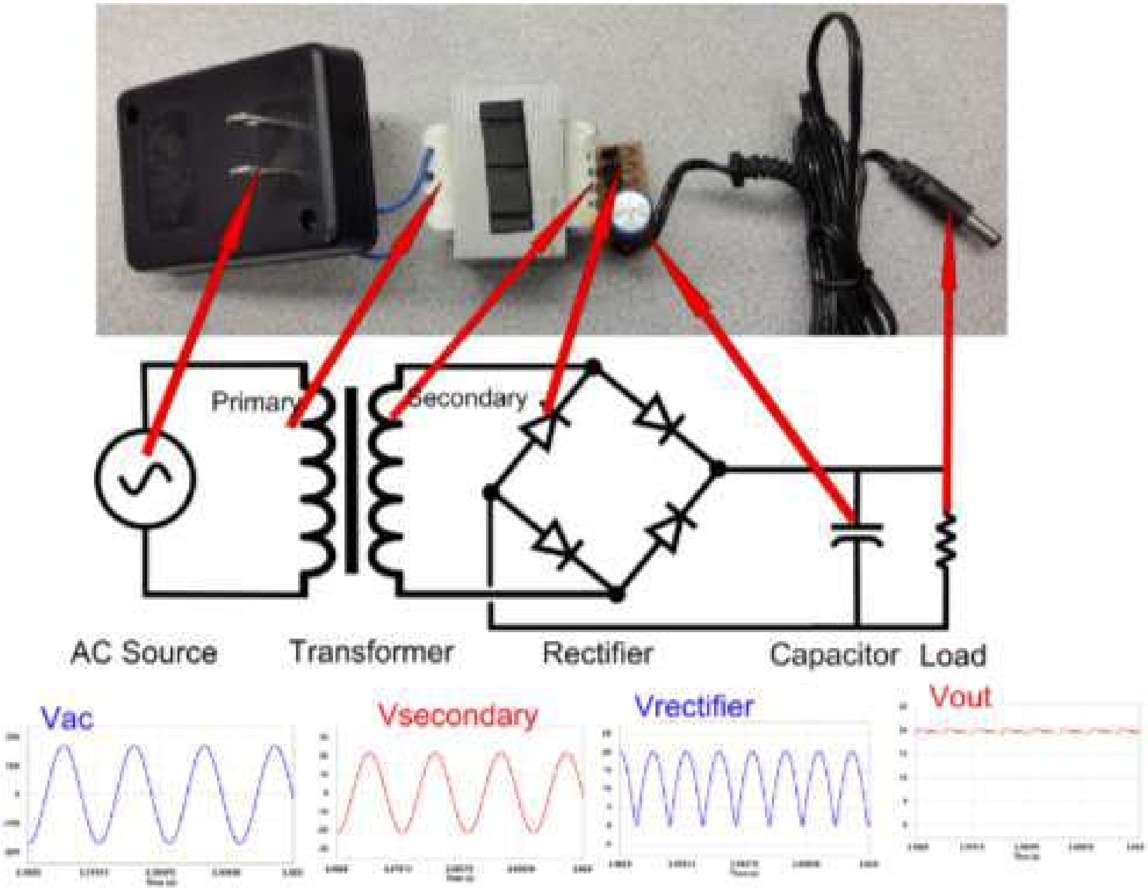
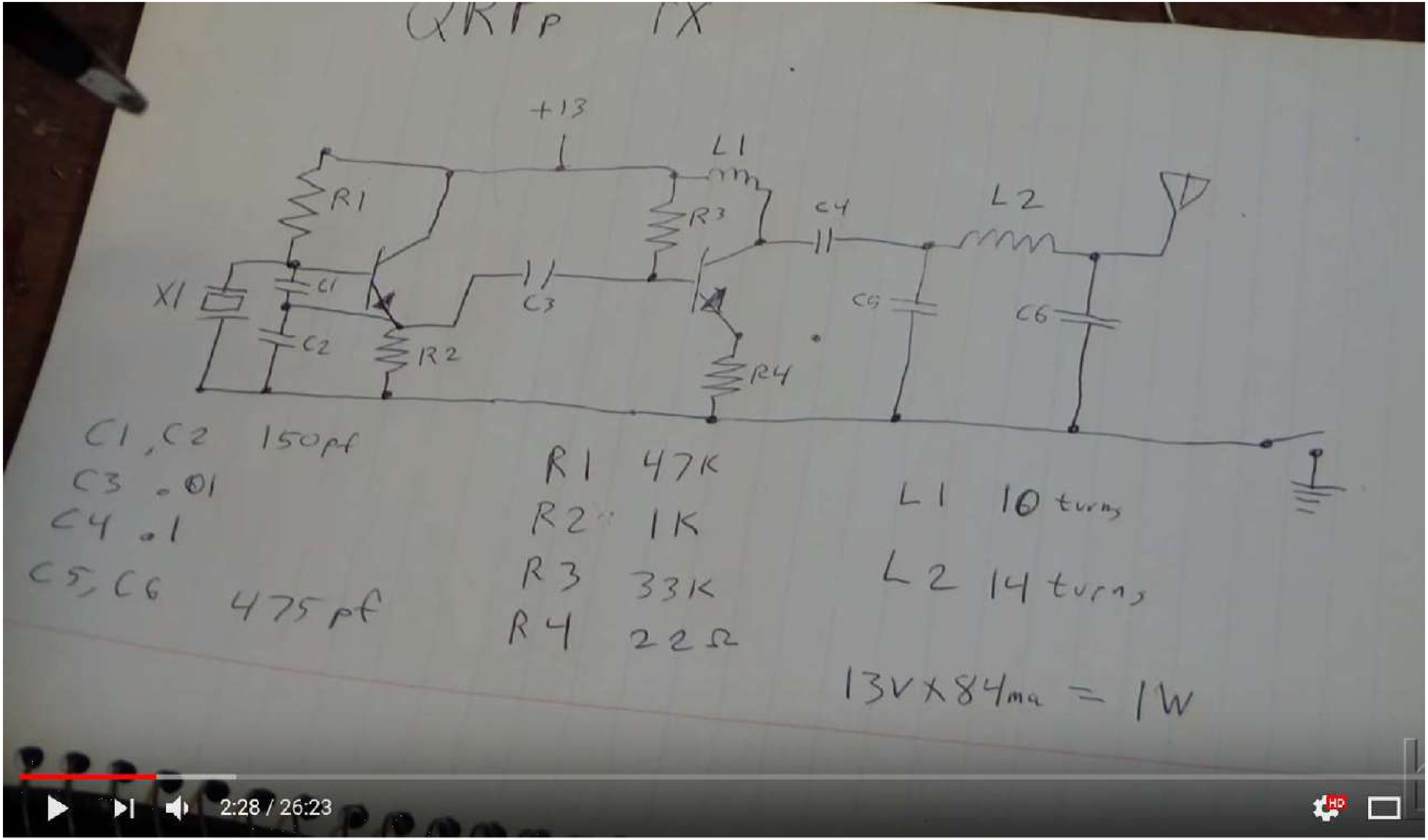
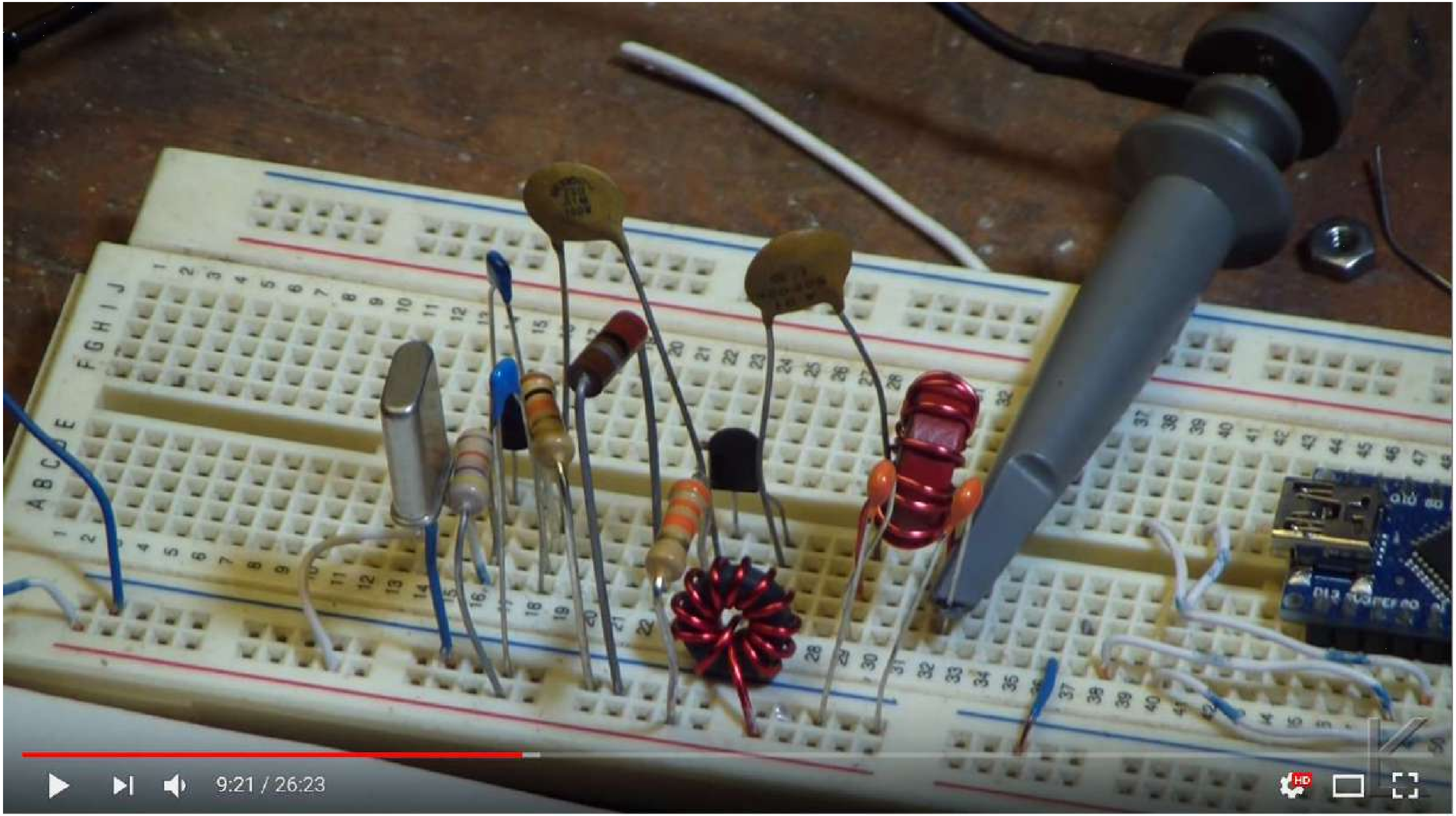


Figure 14. AC Adaptor, Schematic and Voltages

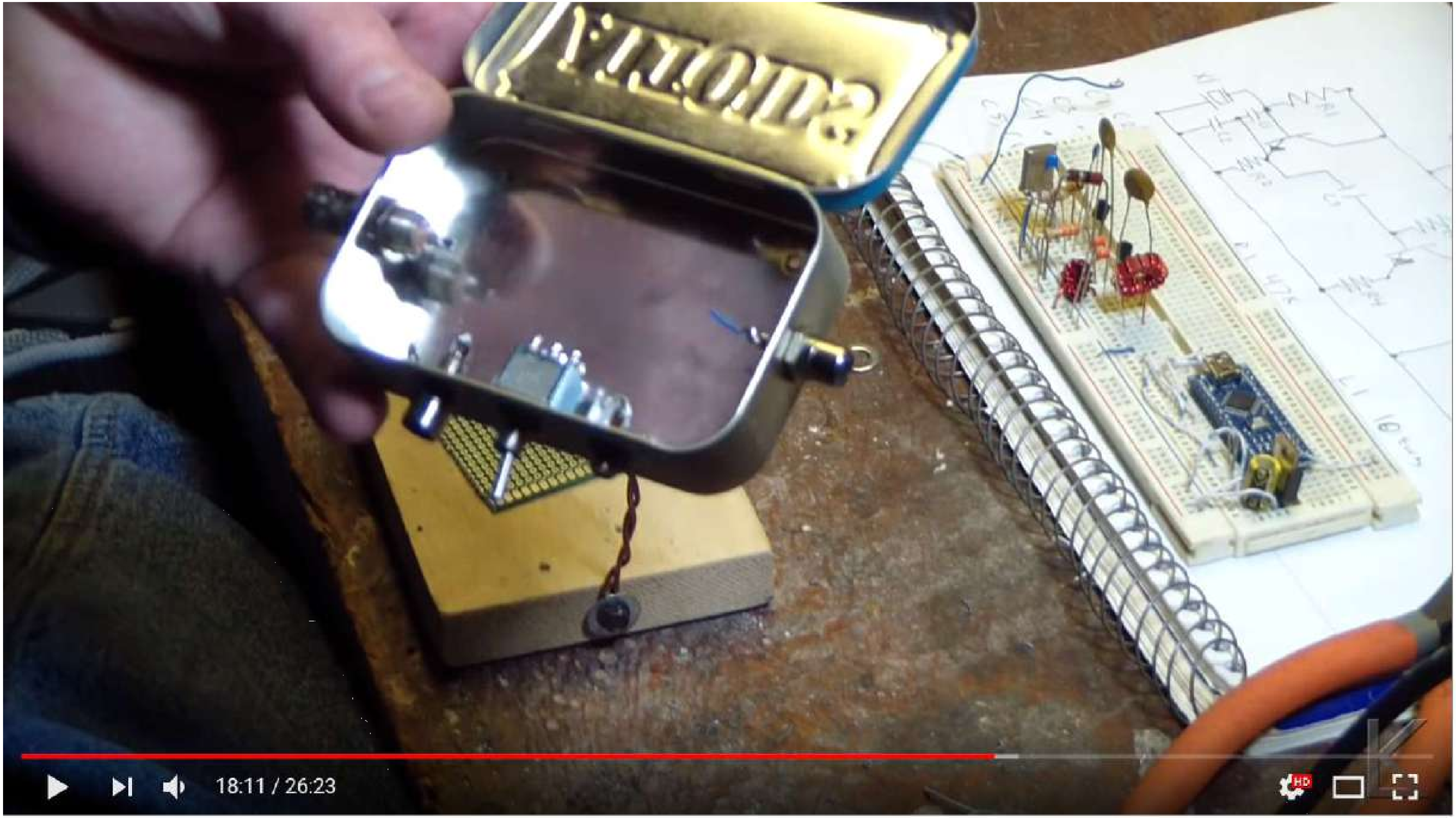
From this picture it looks like we get a reasonably steady DC output voltage given a $120V_{RMS}$ AC input voltage (note that the output is unregulated, so with no load, the DC voltage is actually higher than the rated 12V). For this 20 watt AC-DC converter, as long as the voltage ripple is meeting your specifications, there is not much more that you need to worry about. However, as mentioned earlier, there can be problems at higher powers due to the large in-rush current to the capacitor as it is recharged. These problems will be analyzed in part 2 of the rectifier investigation.

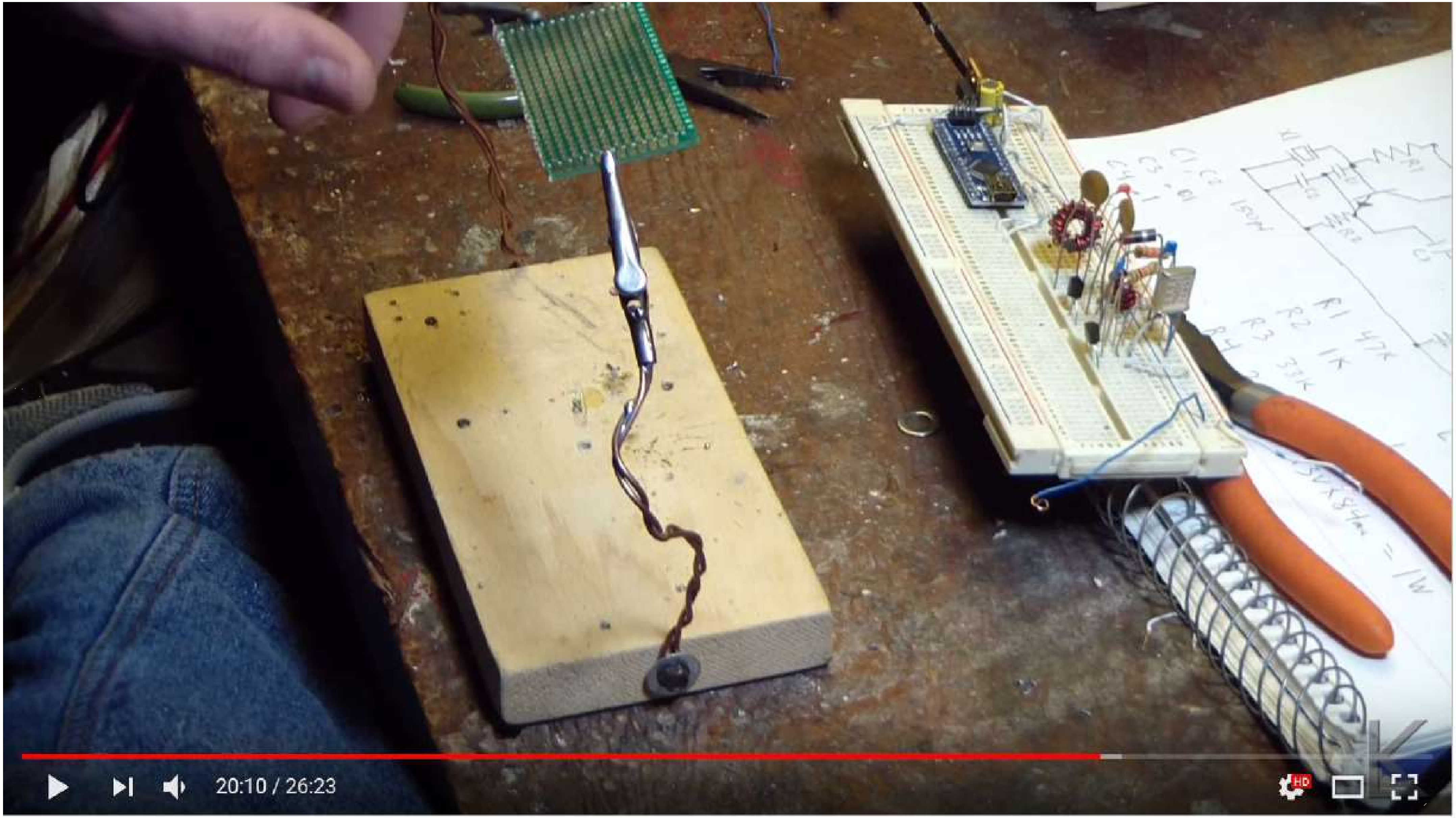


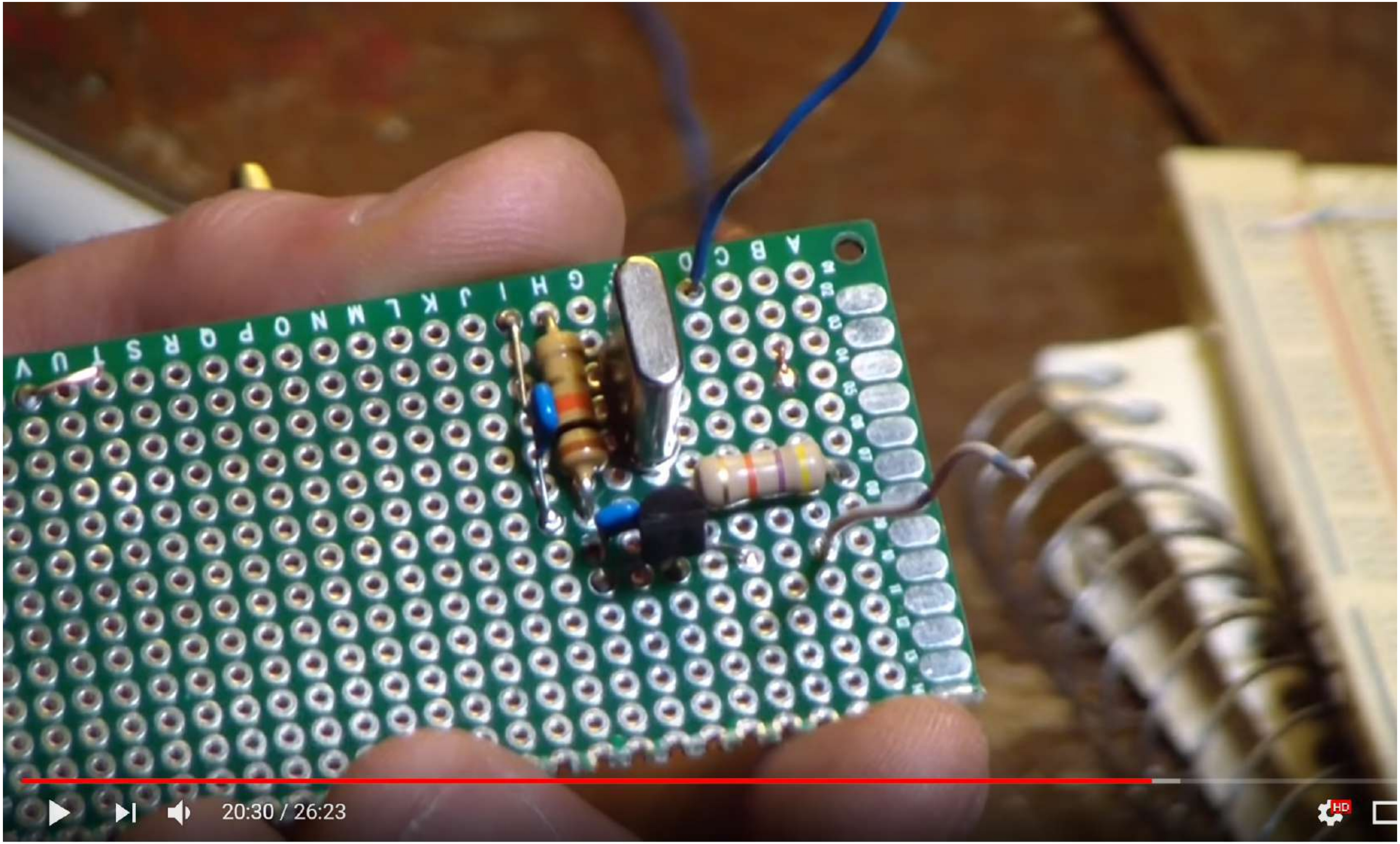
Ham Radio - Build your own QRPp CW transmitter


9:21 / 26:23


QRPp TX
+13
L1
R3
C3
R2
R1 47K
R2 1K
R3 33K
R4 22Ω
1W
14:20 / 26:23


Altoids
18:11 / 26:23


20:10 / 26:23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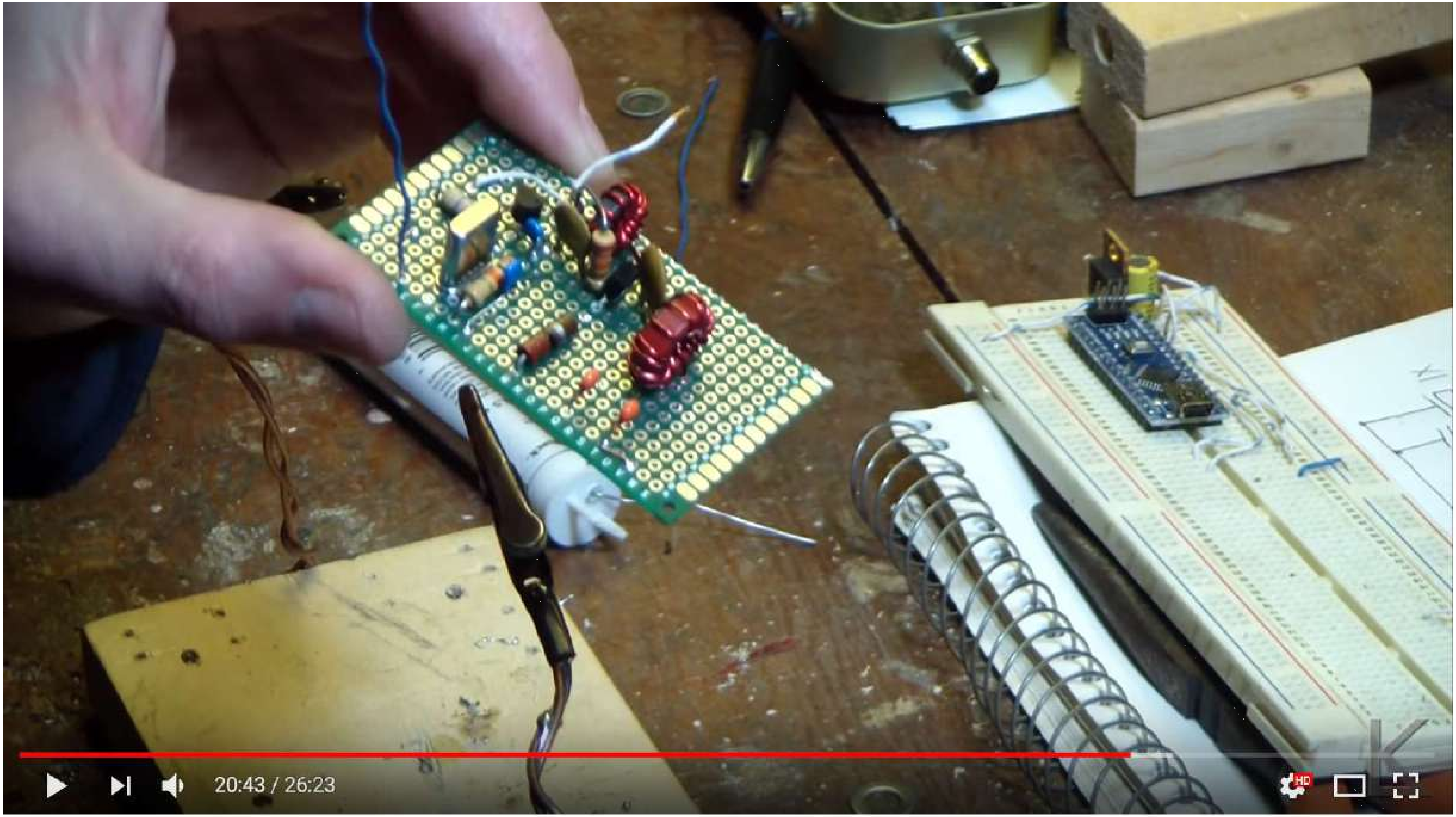
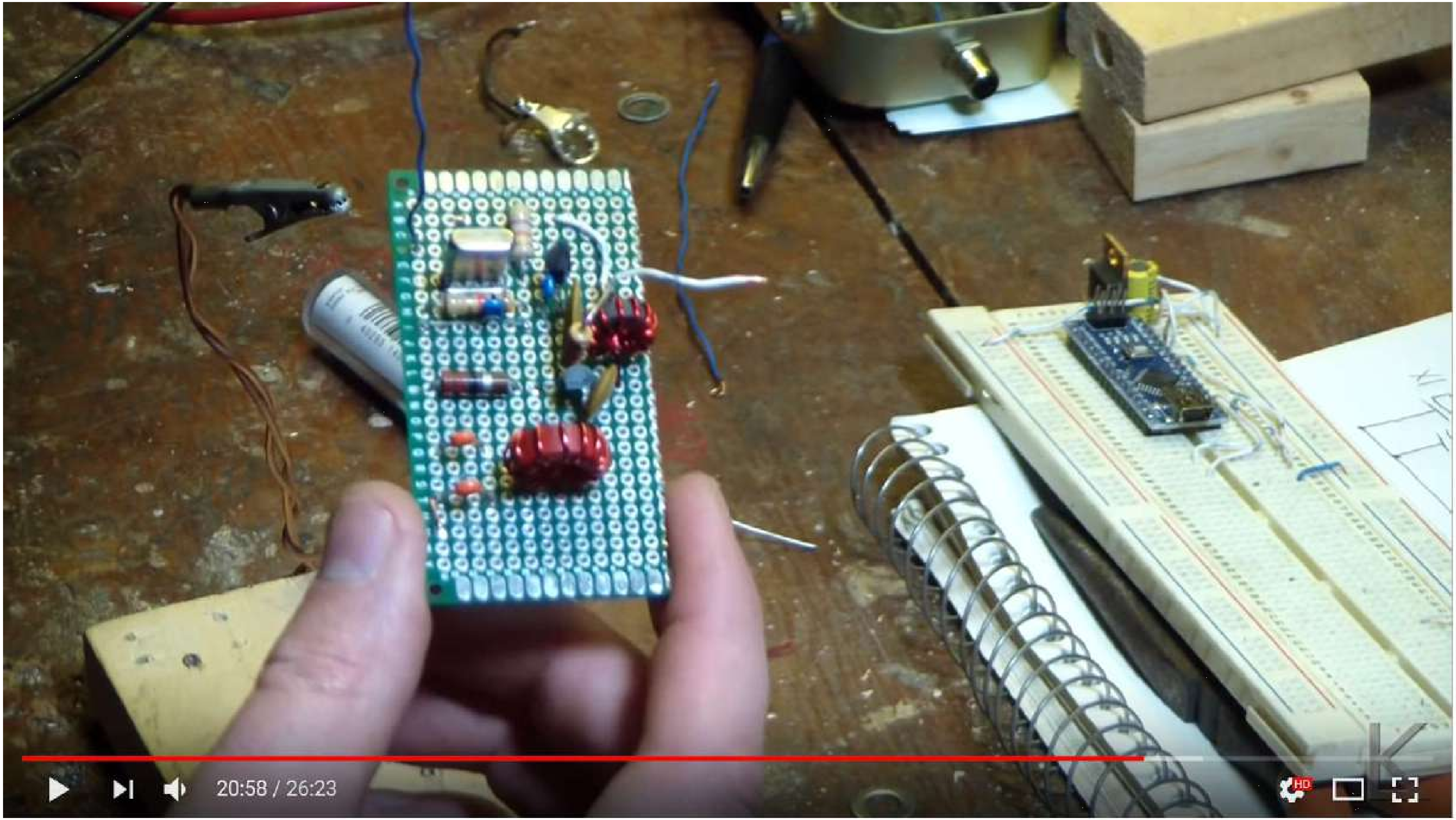
HD


20:43 / 26:23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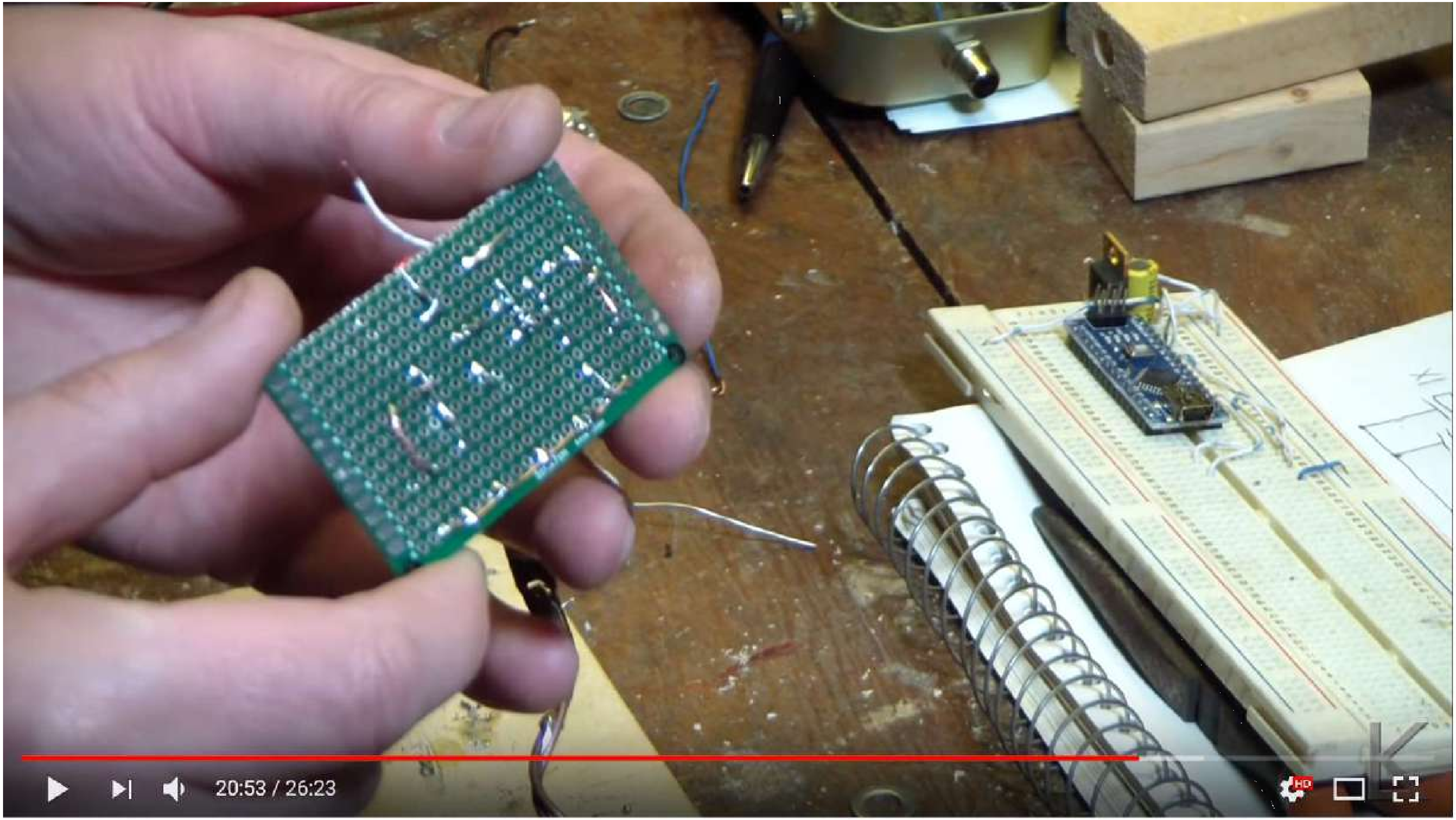
HD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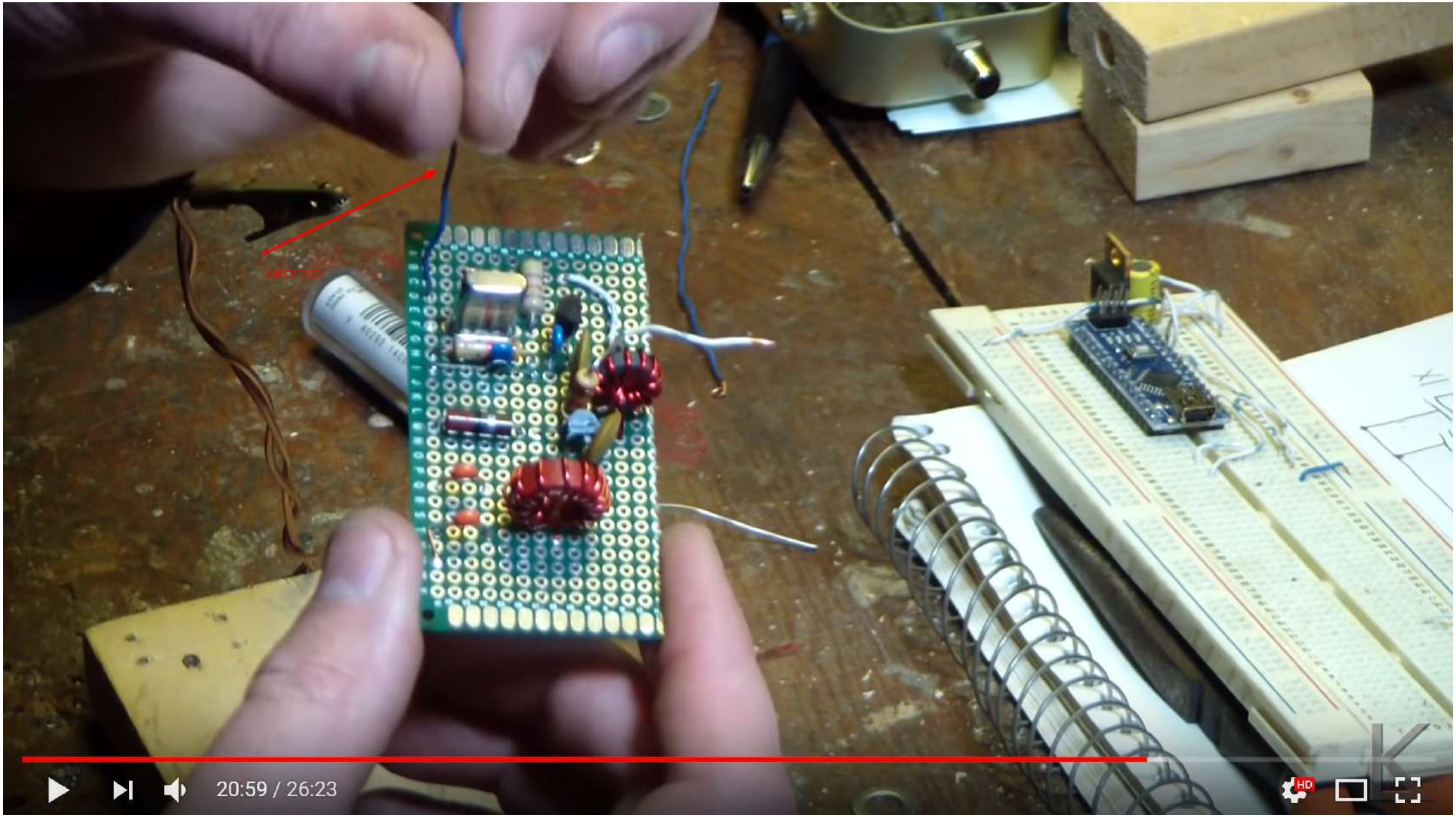
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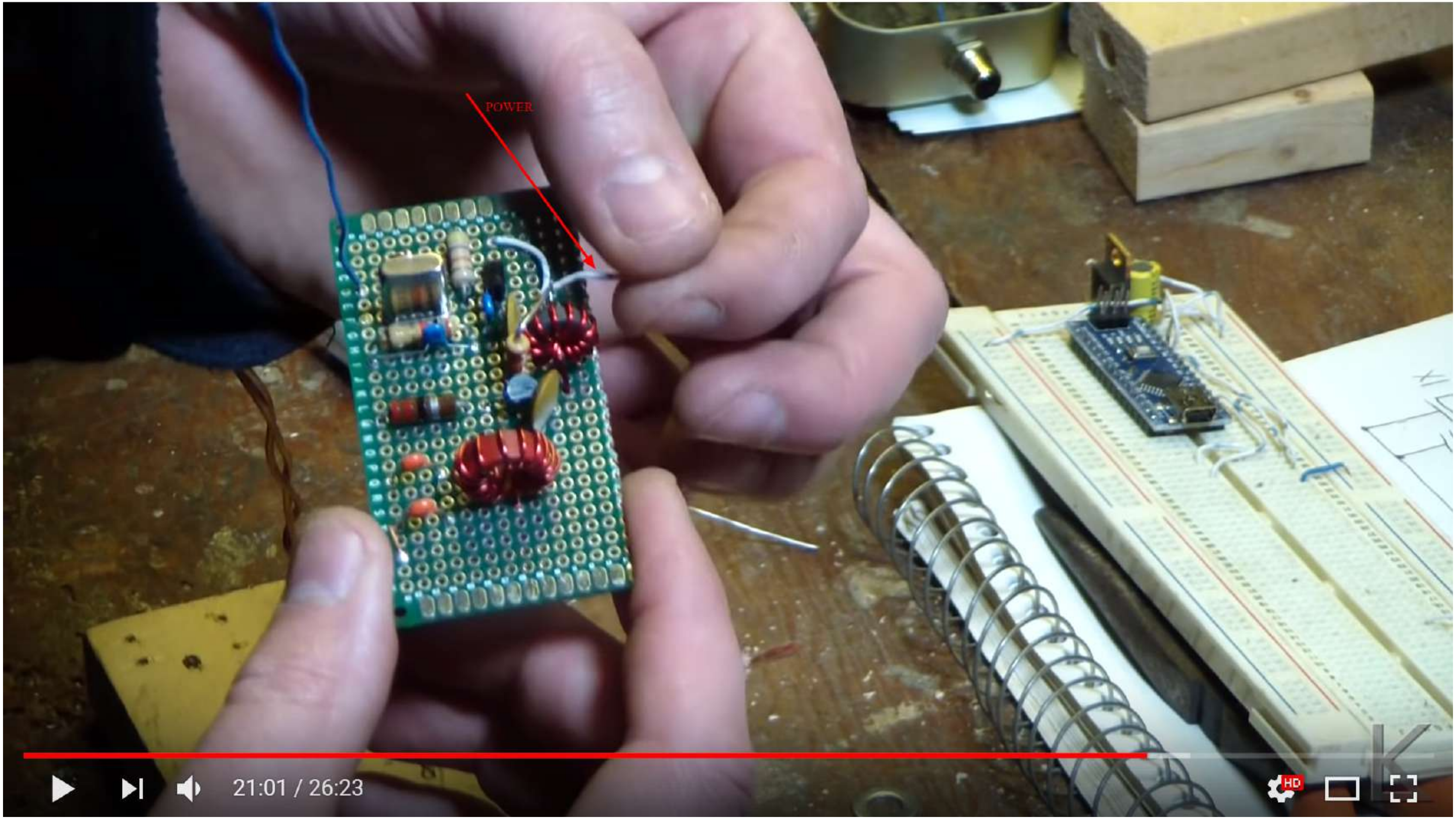
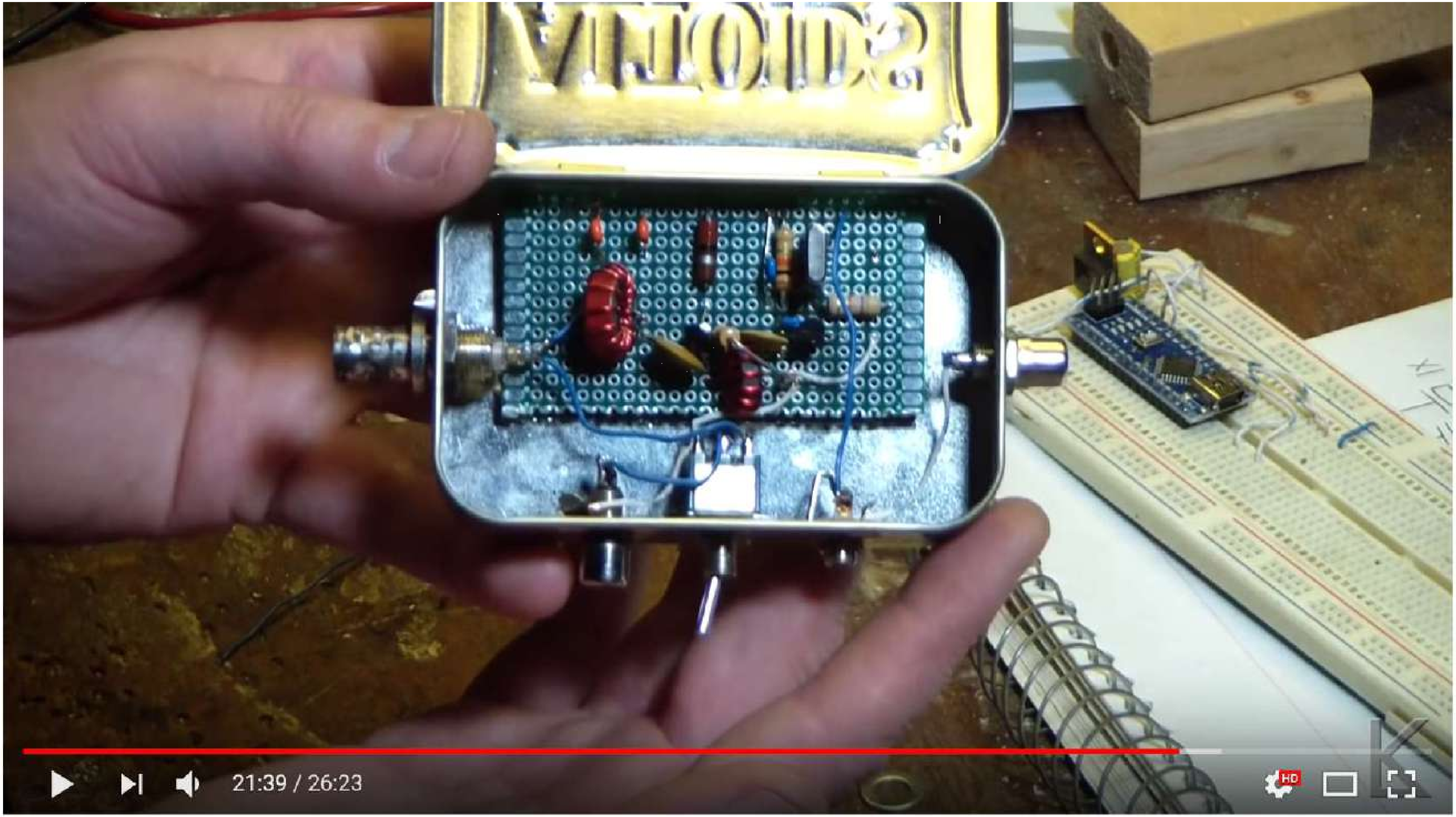
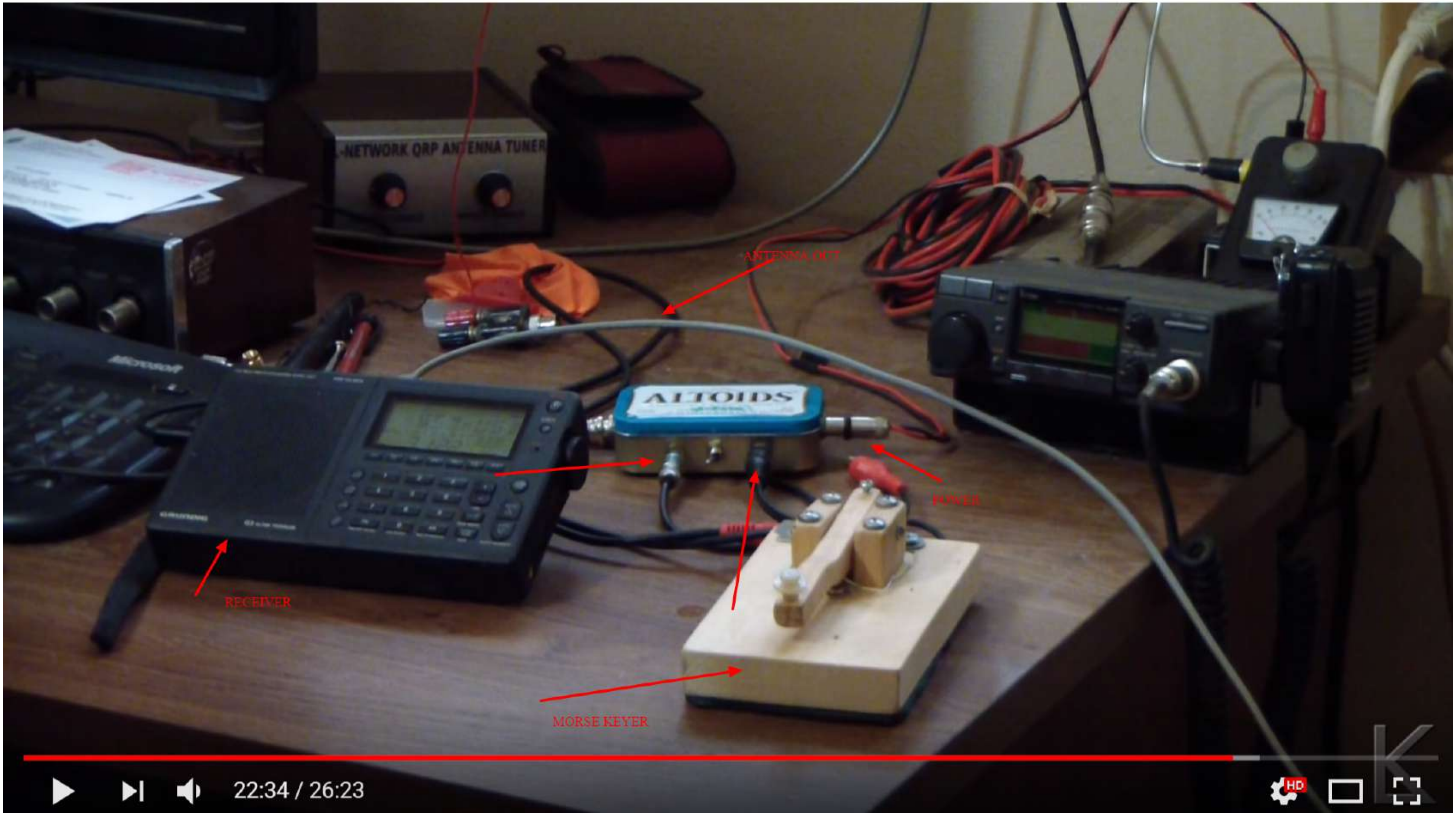

POWER
21:01 / 26:23

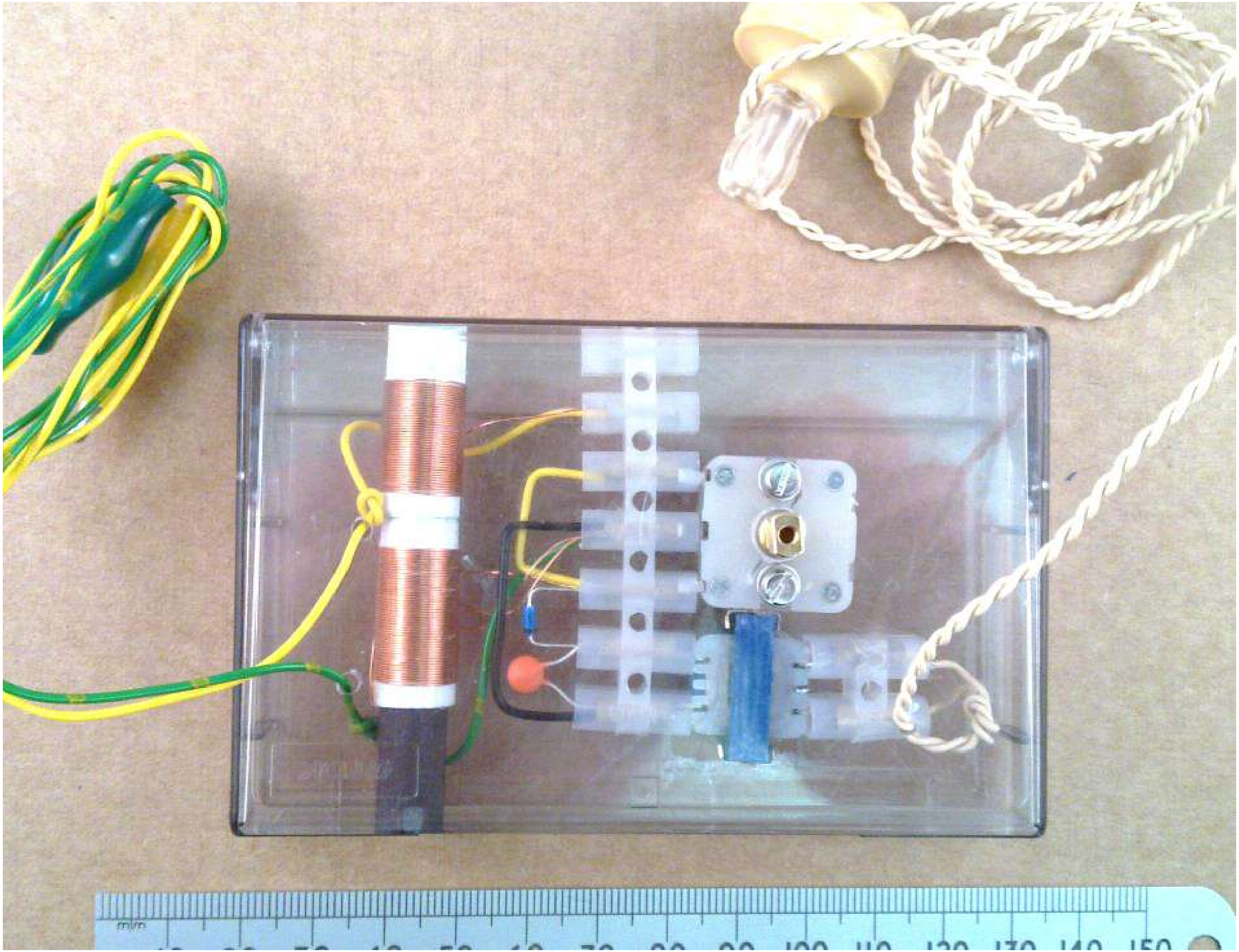
ANTENNA LEAD
21:35 / 26:23

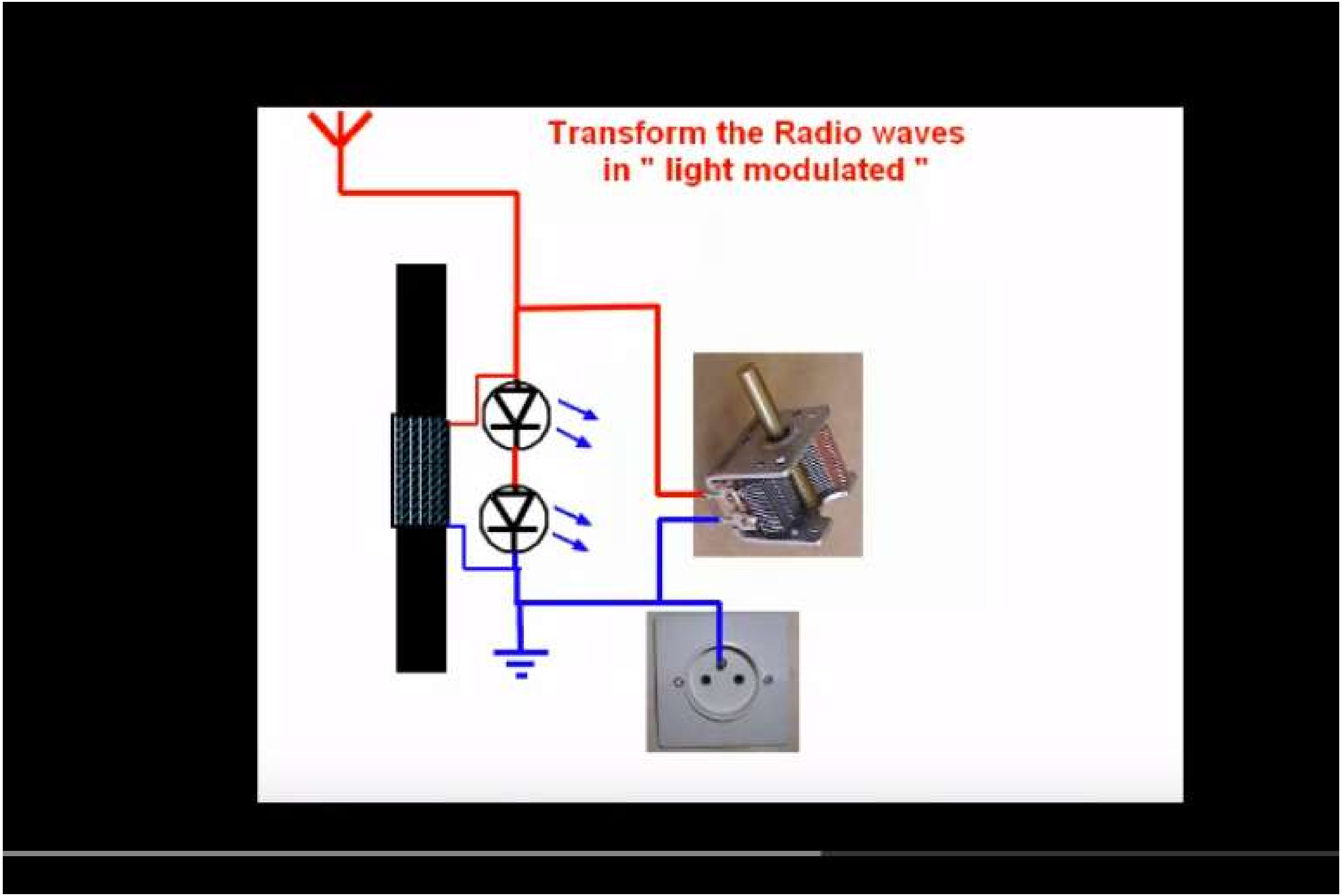

ALTOIDS
21:39 / 26:23
HD


OUTPUT ANTENNA
POWER
RECEIVE ANTENNA
KEYJACK
21:34 / 26:23


ANTENNA OUT
POWER
RECEIVER
MORSE KEYER
ALTOIDS
22:34 / 26:23
HD


OSCILLATOR 7.1225 MEGAHERTZ
ALTOIDS
146.910
TUNED TO 7.1225 MEGAHERTZ
23:59 / 26:23
HD

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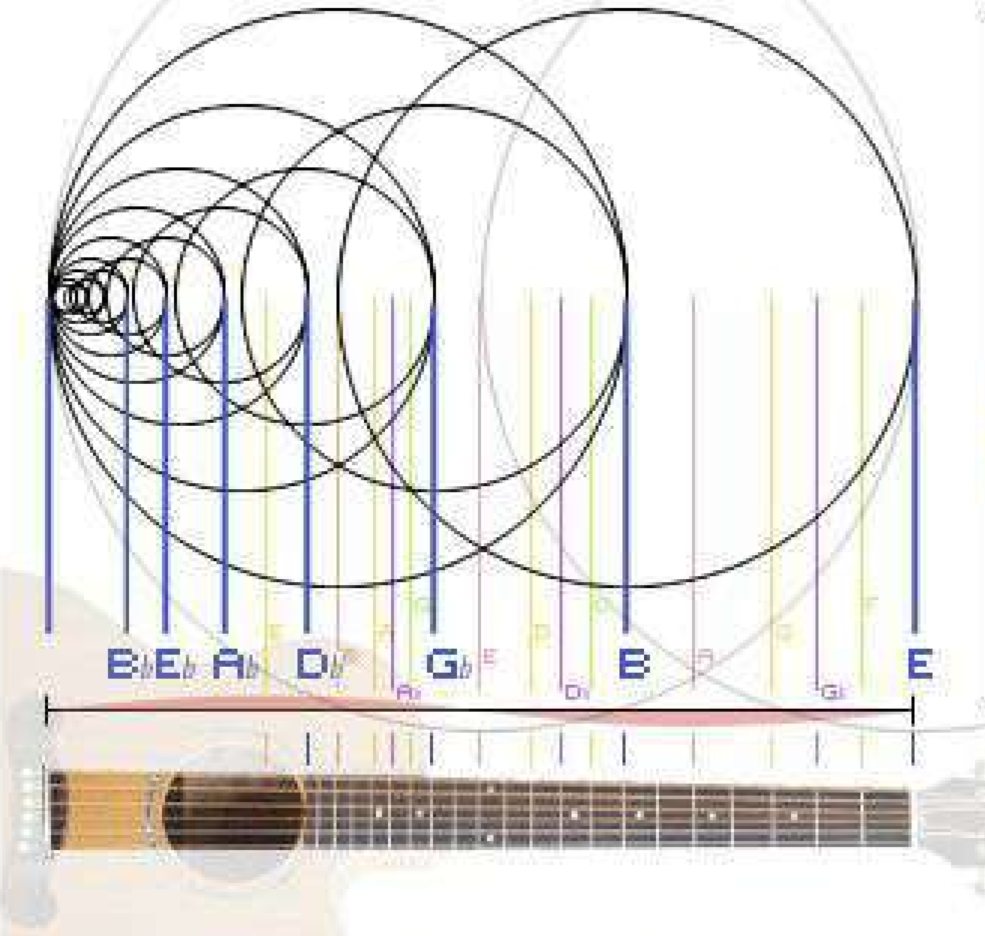
G♭ B E A D G C F B♭ E♭ A♭ D♭ G♭ B

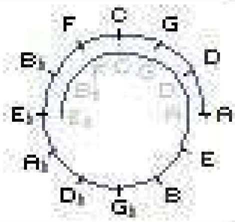


IF YOU PLUCK A TENSIONED STRING HALFWAY BETWEEN THE END POINTS OF ANY GIVEN TONE, YOU WILL GET THAT SAME TONE, ONE OCTAVE HIGHER.

SHOWN TO THE LEFT:

- BASE TONE
- 1/2 (+1 OCTAVE)
- 1/4 (+2 OCTAVES)
- 1/8 (+3 OCTAVES)
- X2 (-1 OCTAVE)

THE CONDENSED FRET-BOARD IS CREATED BY THE BASE TONES, PLUS OCTAVING (HALFING OR DOUBLING THE LENGTHS)



SOME INTERESTING GEOMETRIC THINGS TO NOTE:

IT DOESN'T MATTER WHAT NOTE OF THE CIRCLE OF FIFTHS YOU START ON... FOR THIS EXAMPLE I CHOSE TO MAKE THE BASE TONE 'E' FOR COMPARISON WITH GUITAR

THE OCTAVE ABOVE IS 'E' WHICH IS EXACTLY 1/2 THE LENGTH OF THE TONIC.
THE FIFTH ABOVE IS 'B' WHICH IS EXACTLY 2/3 THE LENGTH OF THE TONIC.
THE FOURTH ABOVE IS 'A' WHICH IS EXACTLY 3/4 THE LENGTH OF THE TONIC.
THE THIRD ABOVE IS 'A FLAT' WHICH IS EXACTLY 4/5 THE LENGTH OF THE TONIC.

THESE TONES ARE THE MOST CONSONANT (MOST HARMONIC) WITH THE TONIC 'E' AND ARE ALSO THE PLACES ON THE GUITAR WHERE PLAYING 'HARMONICS' WORKS BEST.

THE TONES / DISTANCES IN THE CHROMATIC SCALE FALL ON INTERSECTION POINTS OF THE EXPANDING VESICA PISCES CIRCLE FORMATIONS.

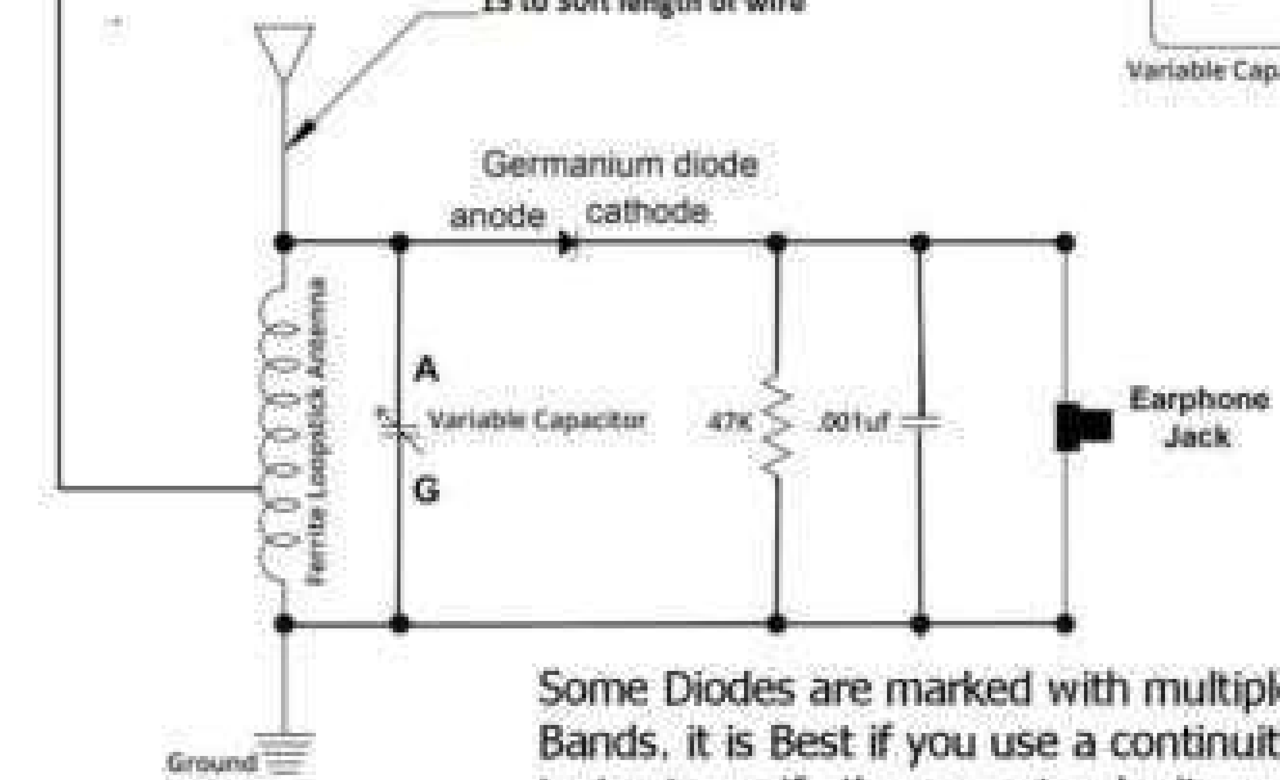

1.RF radio frequency
2.Seven led photon lights
3.Sonic & Vibrations
4. Face Lift skin tighten
5. Skin rejuvenation
Purple Light (590nm-600nm)
Detoxification ,make the skin more healthy

Our GI Receiver

You should only use either a long or a short antenna, but not both.

Simple Crystal Radio

3 Wire Coil



Some Diodes are marked with multiple Bands. it is Best if you use a continuity tester to verify the correct polanity. Maximum volume will be acheived if the diode is Oriented correctly AS SHOWN IN THE DIAGRAM.

Parts List
1 - Ferrite Loopstick Antenna
1 - Variable Capacitor
1 - Germanium Diode
1 - .001uf Capacitor
1 - 47K Resistor
1 - 20 Million Ohm Ceramic Earphone
Antenna and Ground wire not include with parts

If you have a kit with a 3 wire coil.
Many users have reported that cuting the connection between the diode and antenna, and moving the anode to the center tap of the coil improved performce significantly.
In addition sliding the coil over to one end of the core may help too.

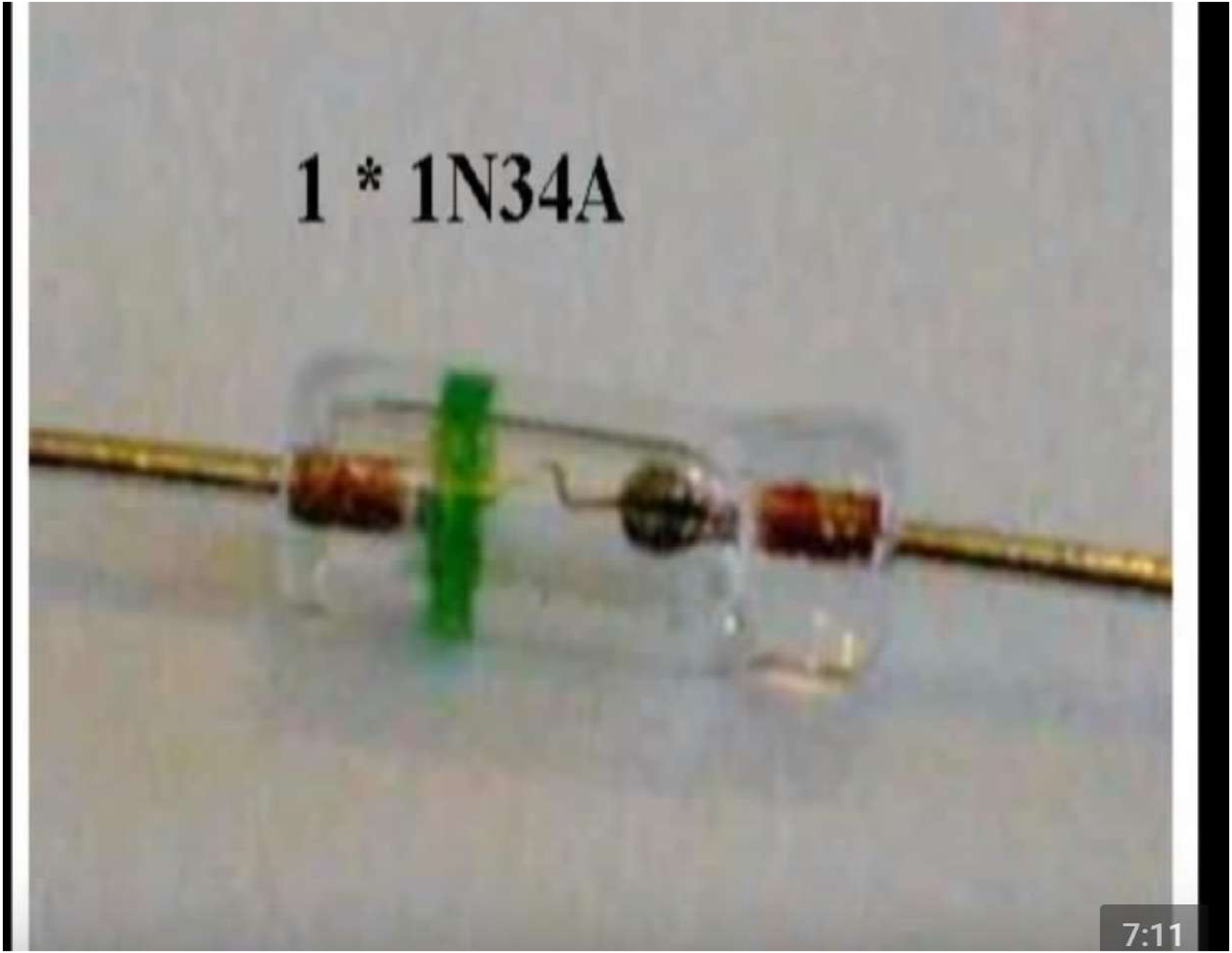
For short antenna connect a 15 to 30ft length of wire. It is best to use a long wire antenna of 40 to 100ft. A good ground may be required if so run a wire for ground to the nearest ground source. If you are not using the long antenna connection do not cut off the center coil wire. Doing so will cause the coil not to work.

Germanium Diode

47K Ohm Resistor

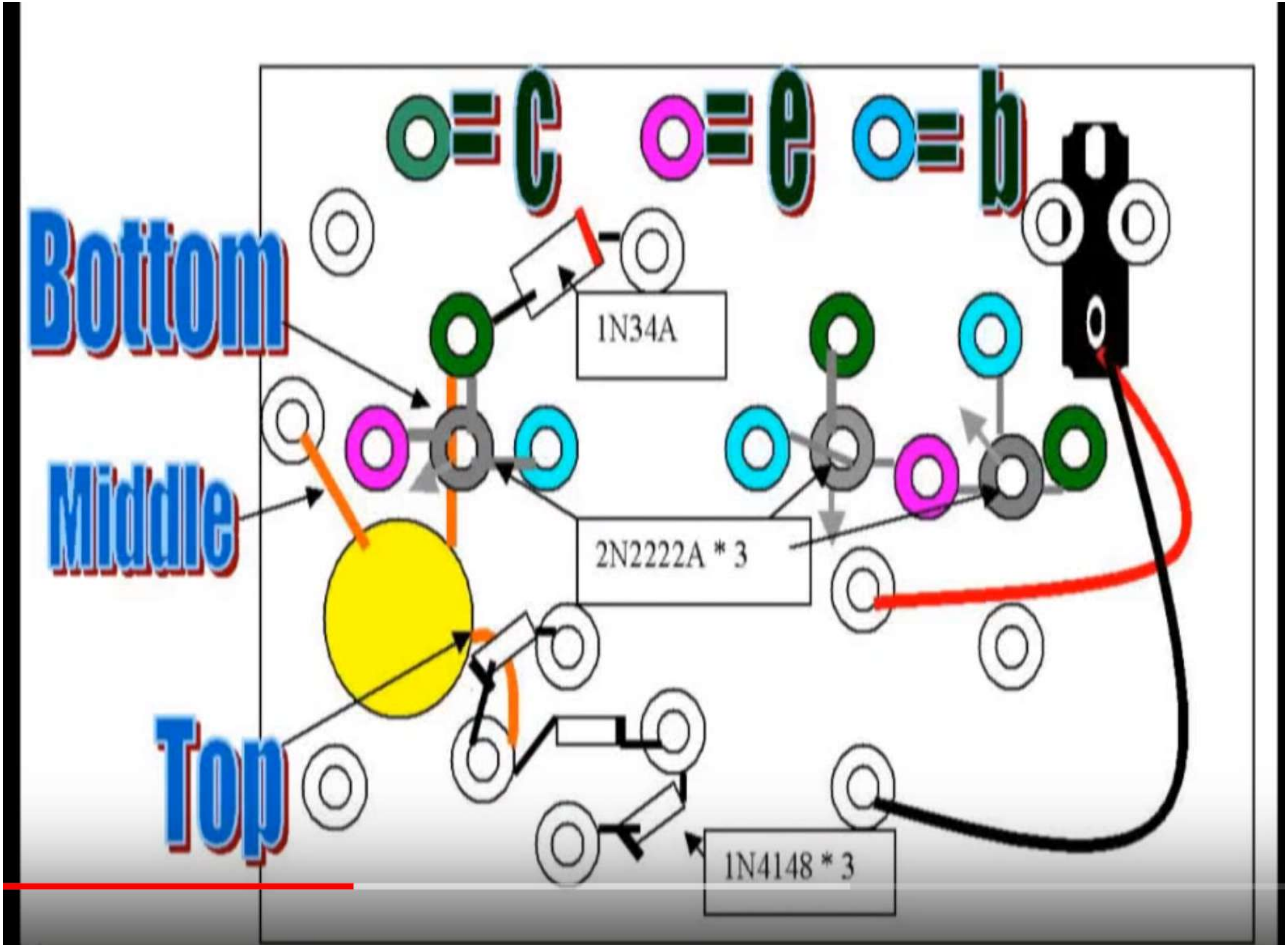
Making a Shortwave Radio (How to make a Shortwave Radio)

3 * 1N4148

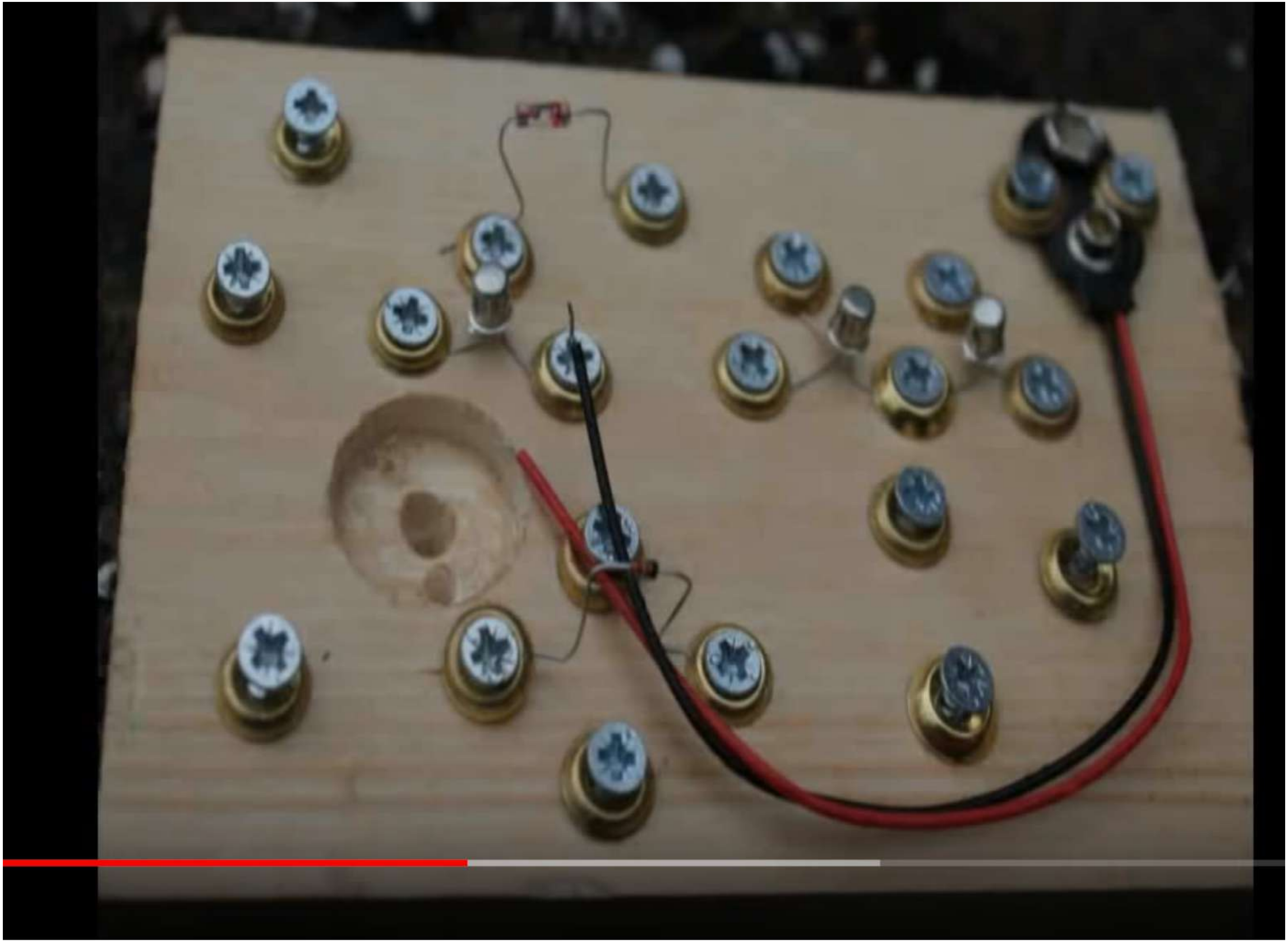

1 * 1N34A
7:11

3 * 2N2222a

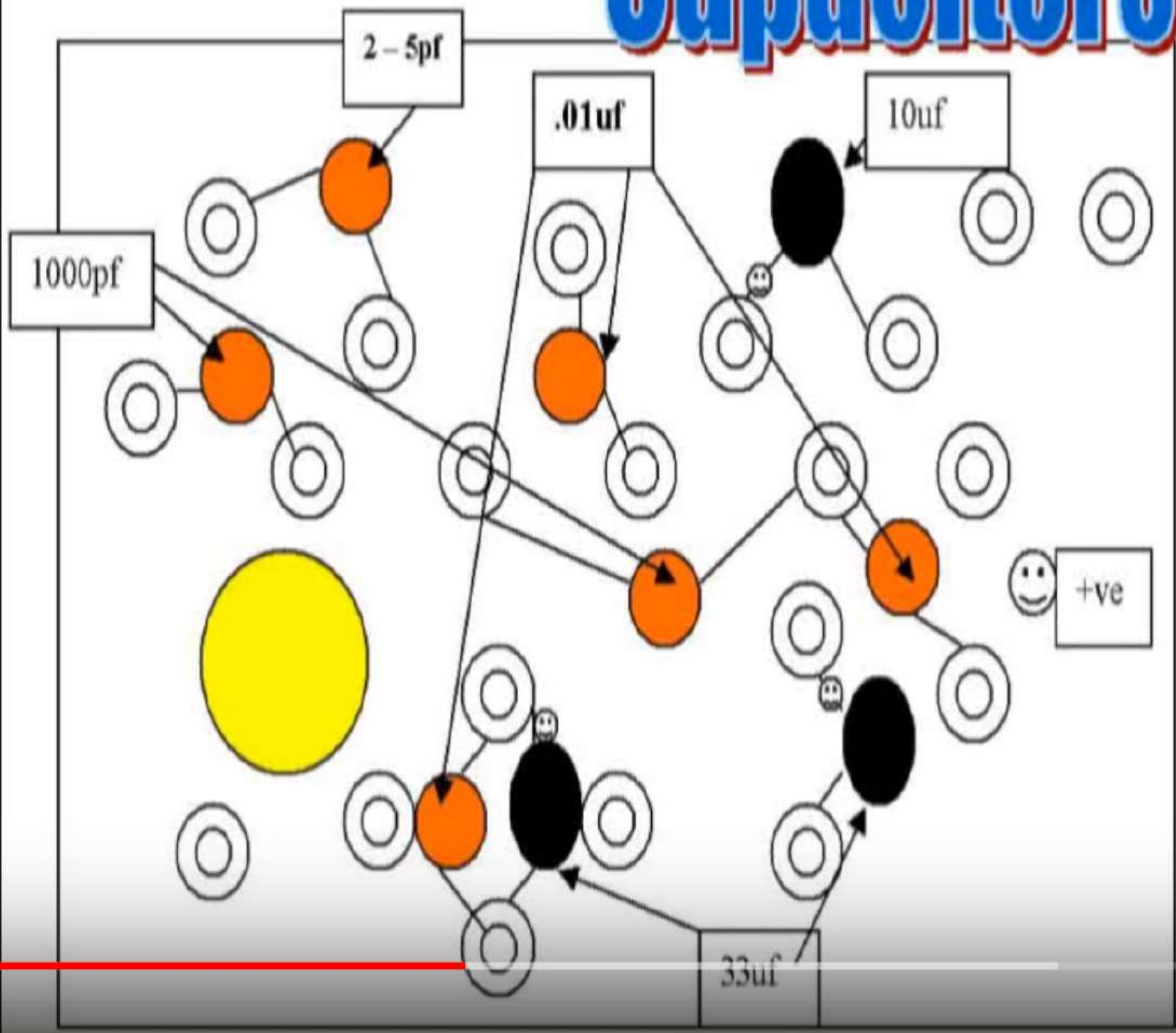

middle 2n2222a has
base bent
backwards

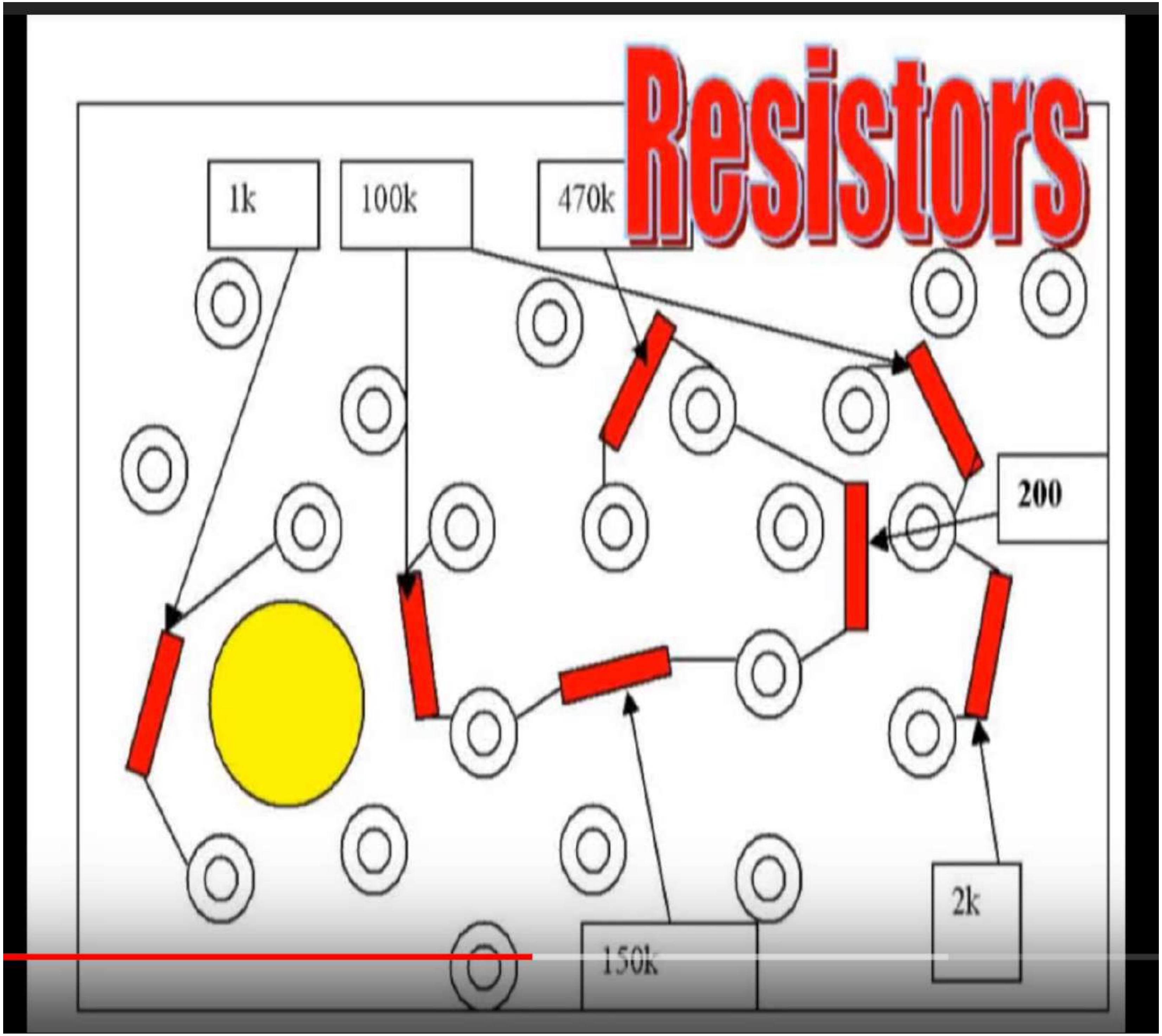


= C
= e
= b
Bottom
1N34A
Middle
2N2222A * 3
Top
1N4148 * 3

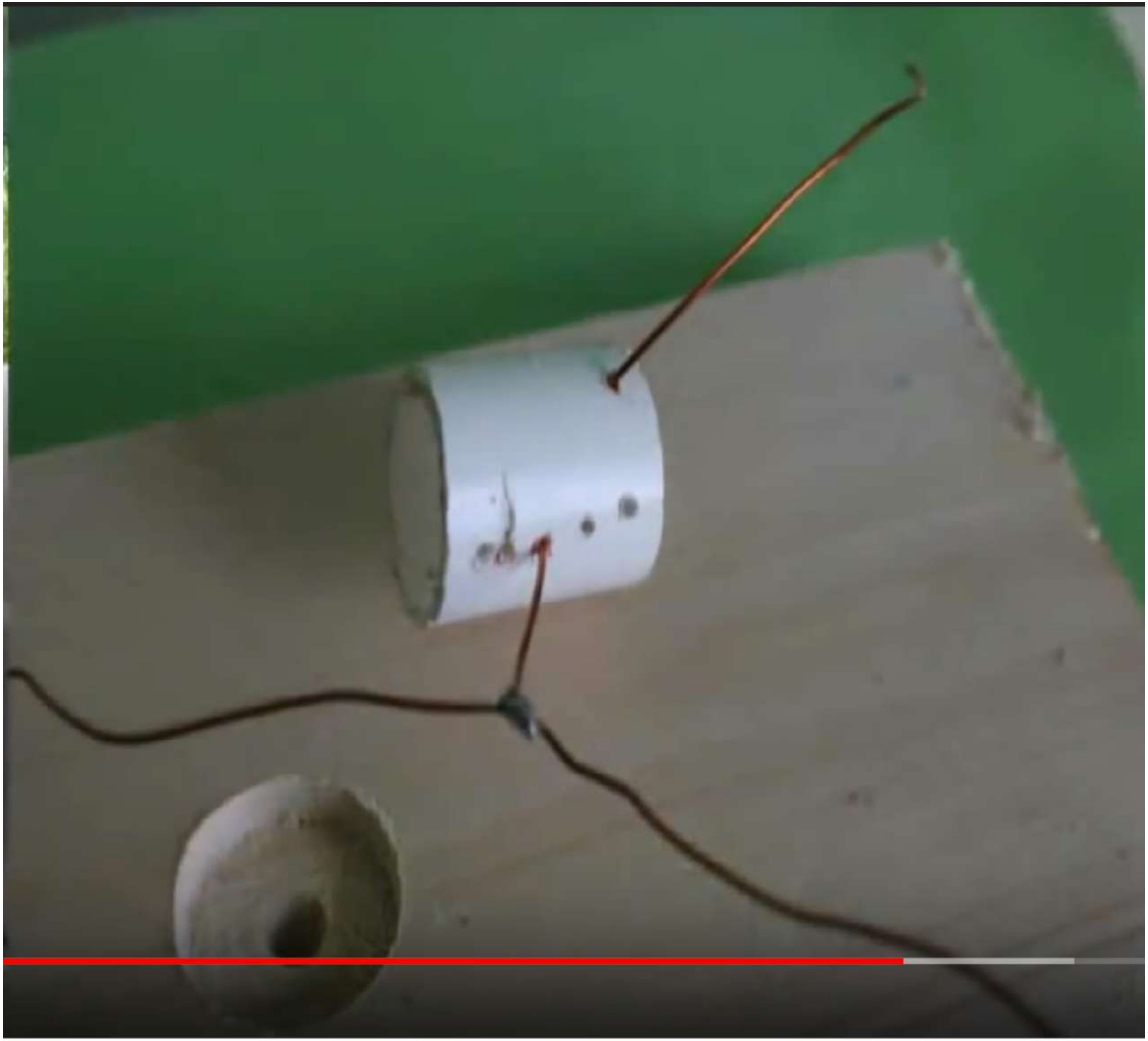


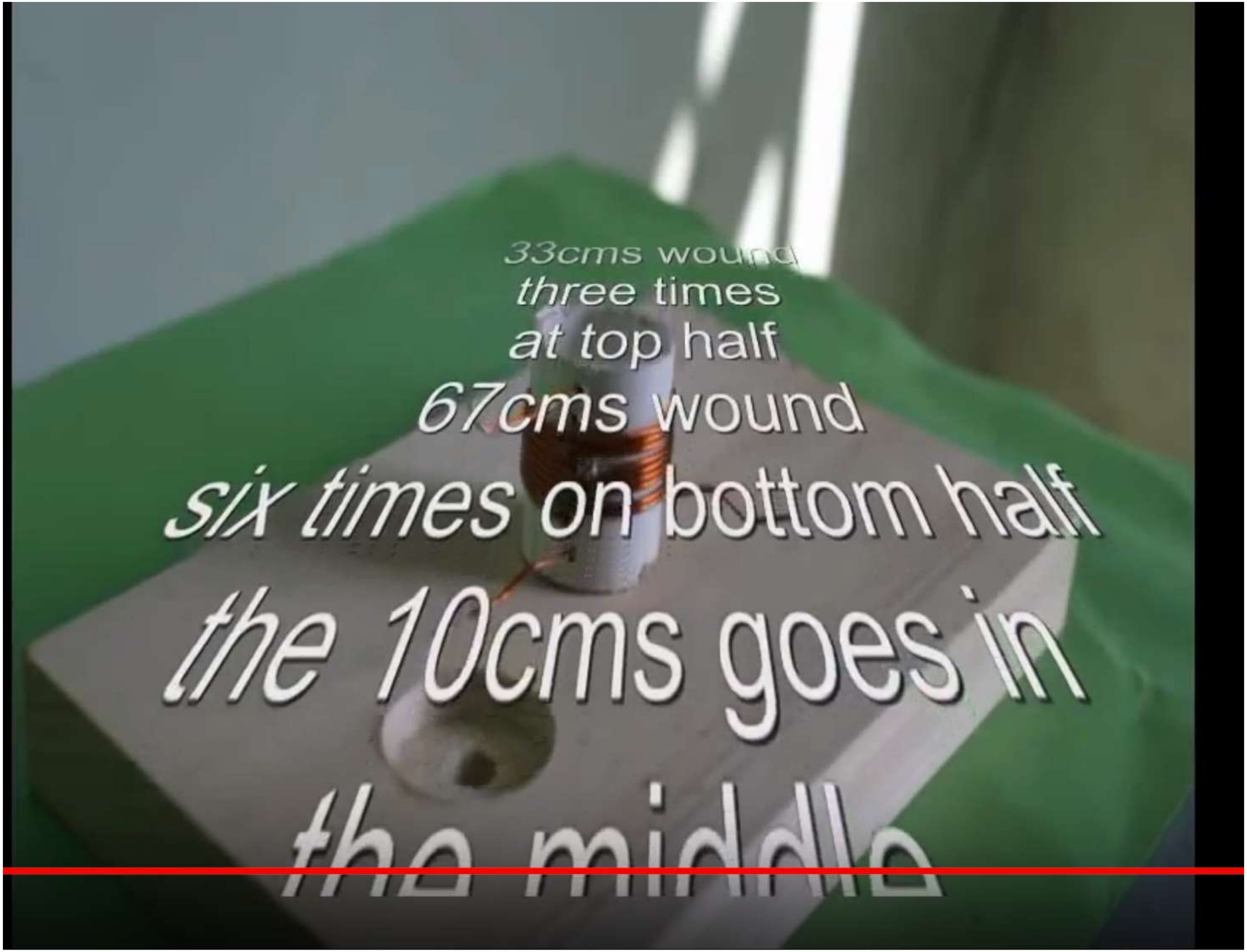
Capacitors





Resistors
1k
100k
470k
200
2k
150k

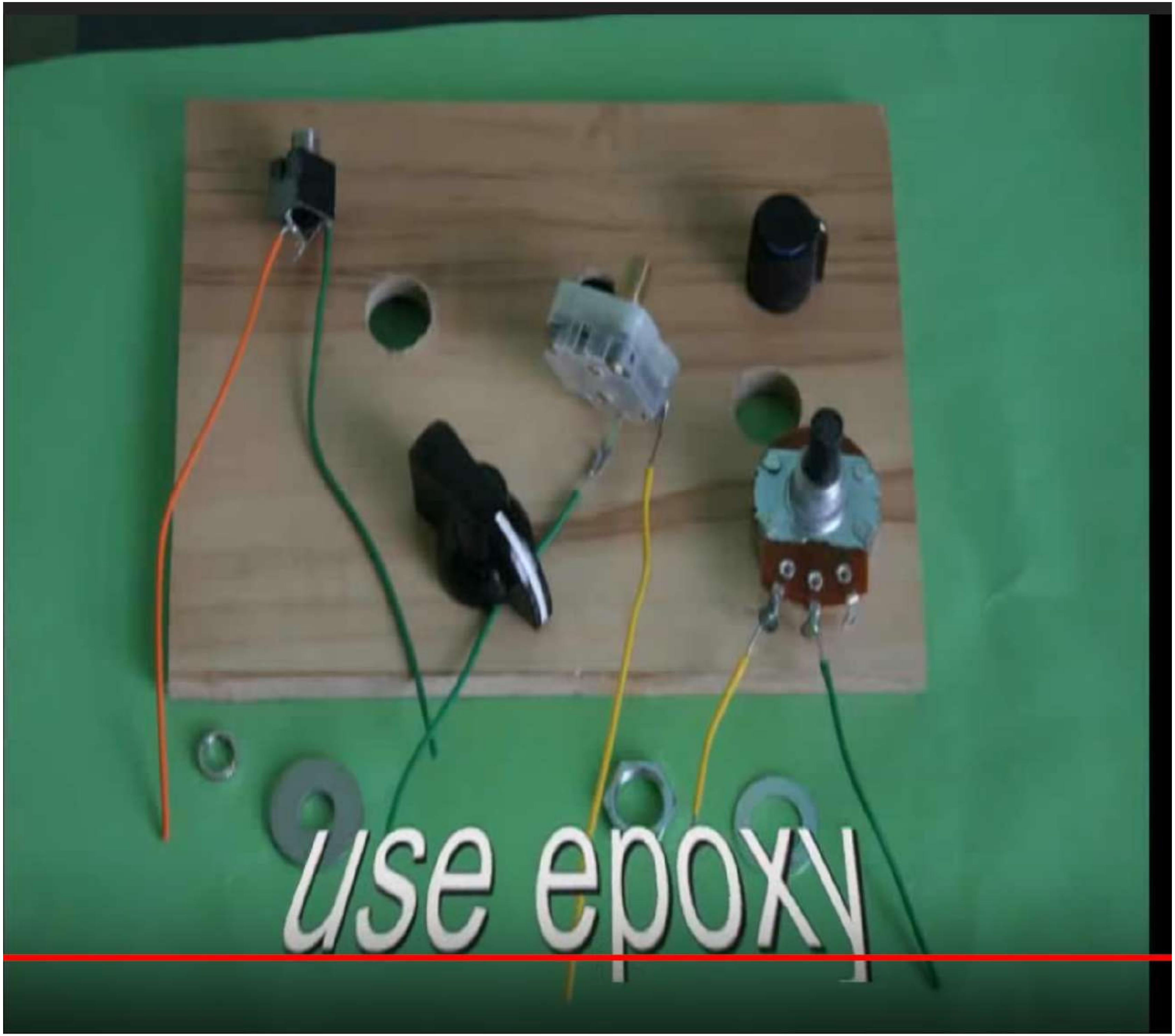


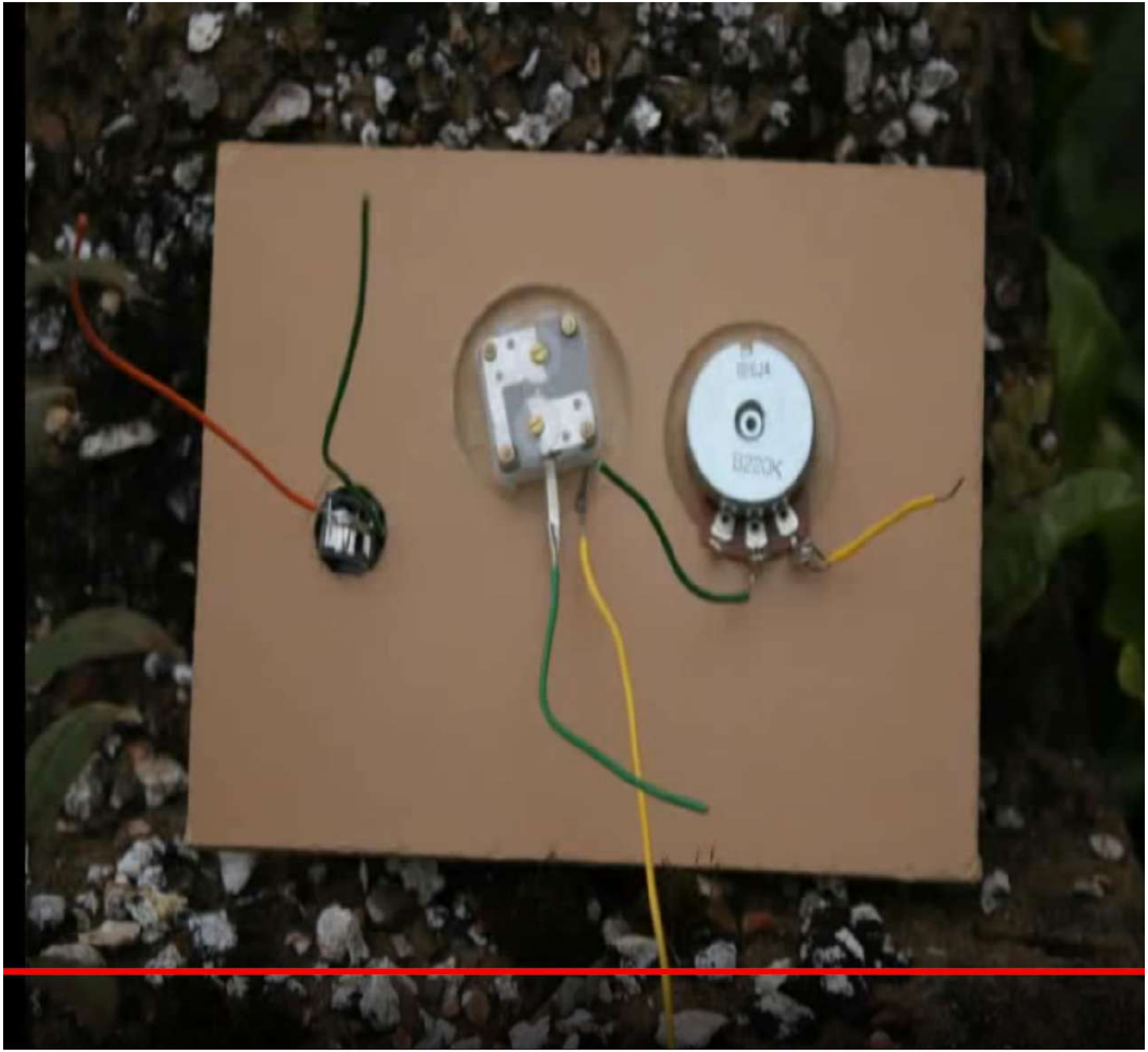

33cms wound
three times
at top half
67cms wound
six times on bottom half
the 10cms goes in

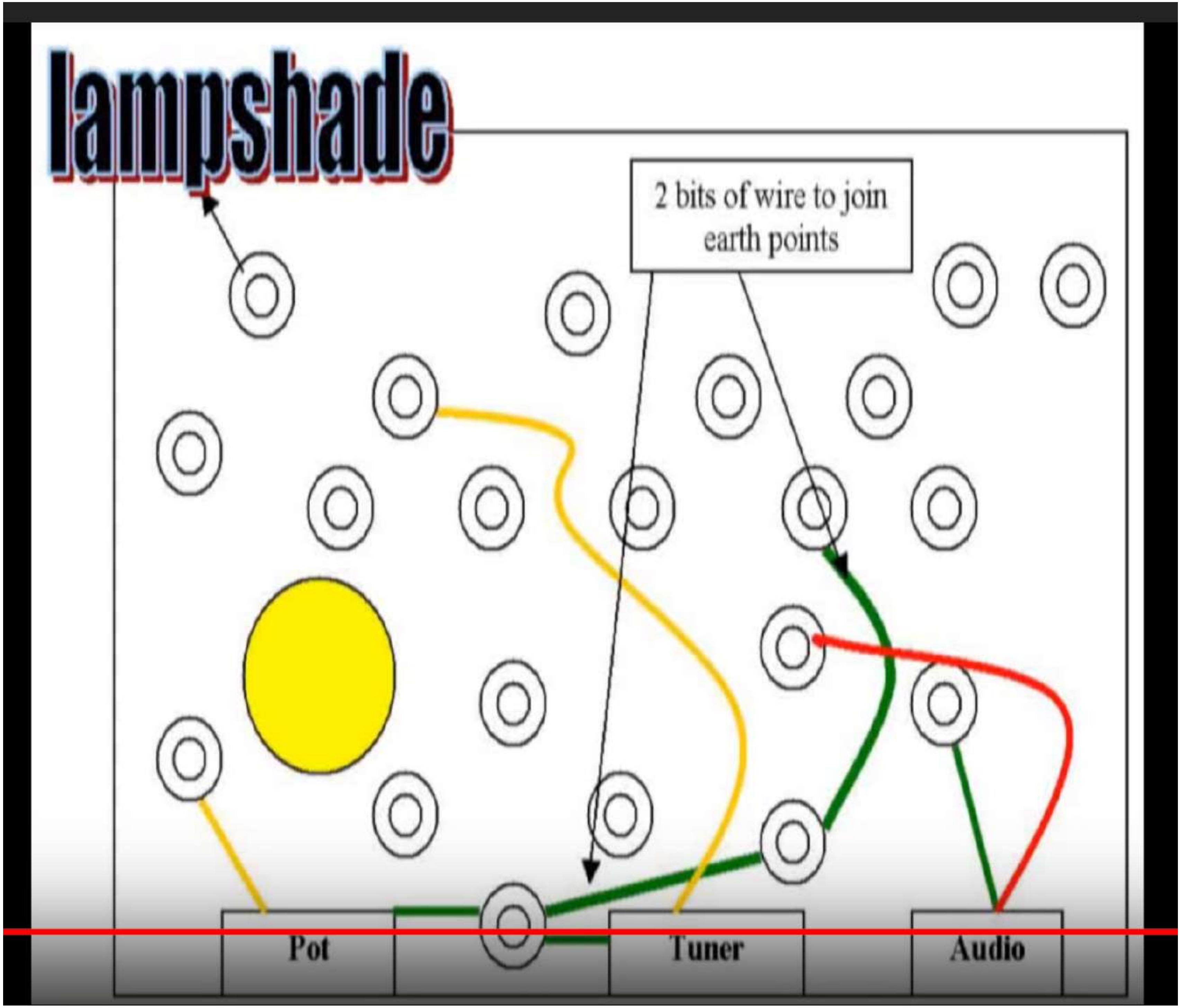

Rapidonline.com
minature tuning
capacitor 50v

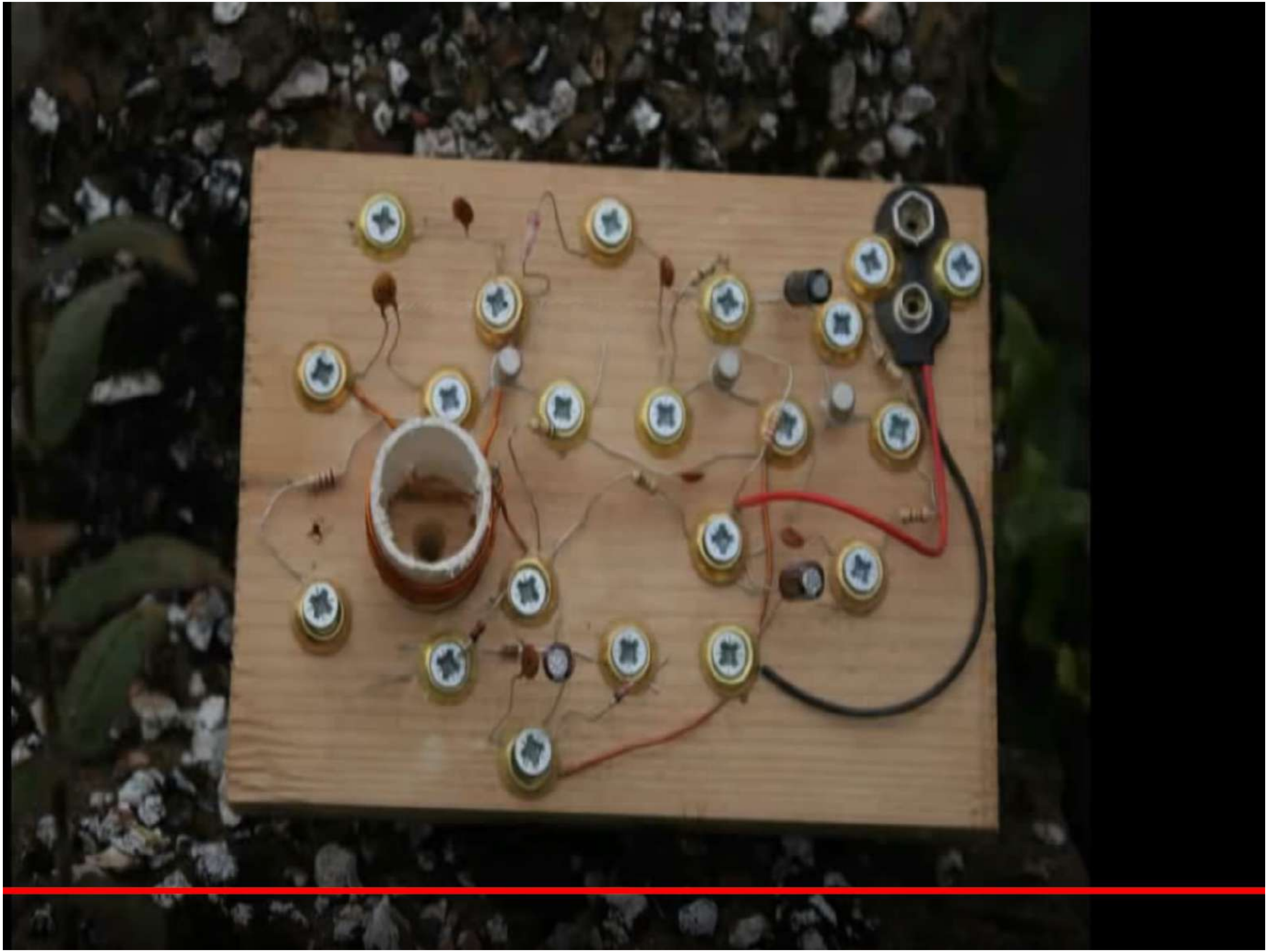

220k
potentiometer

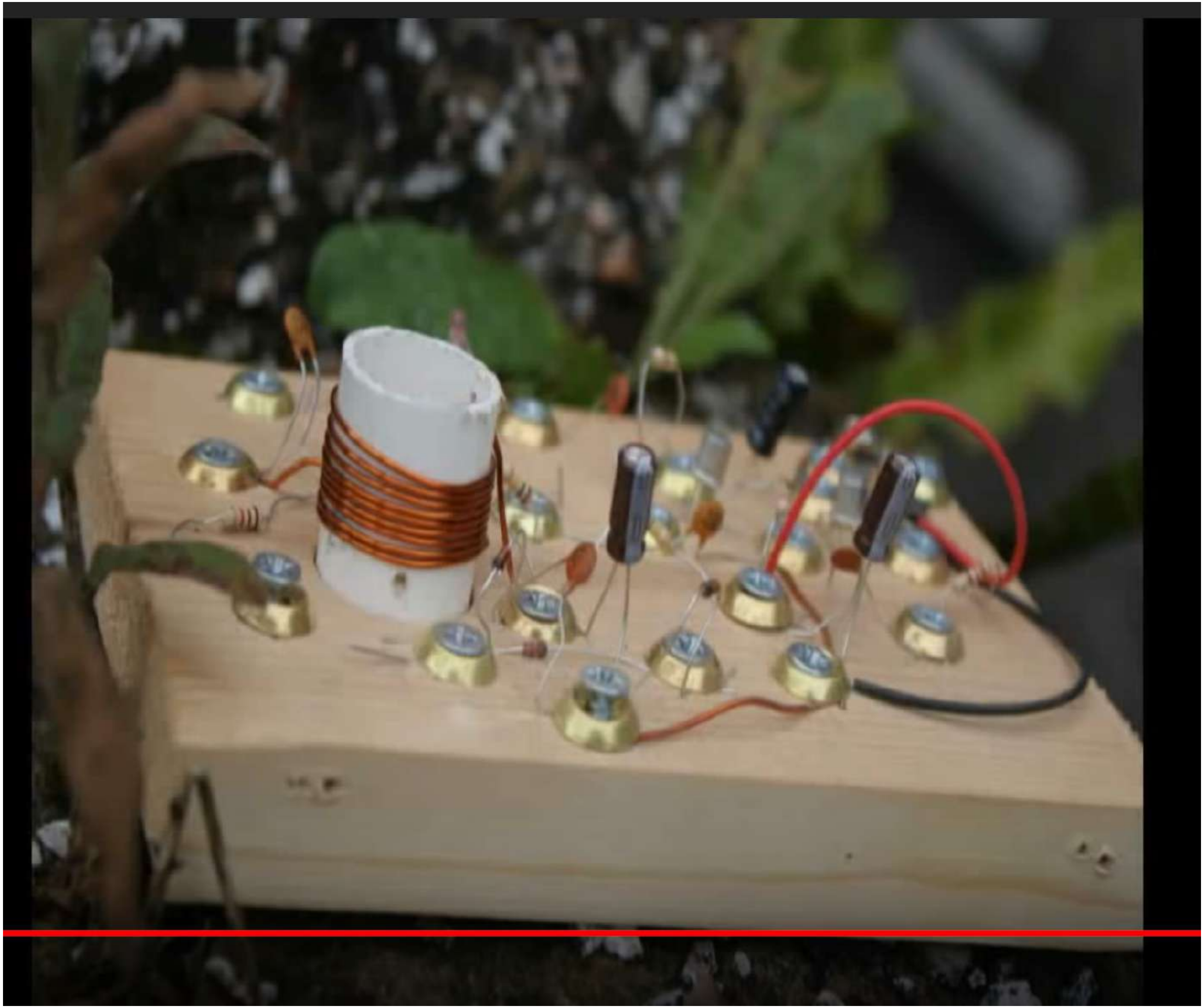

3.5mm audio
socket
left/right channel
soldered together
to give mono

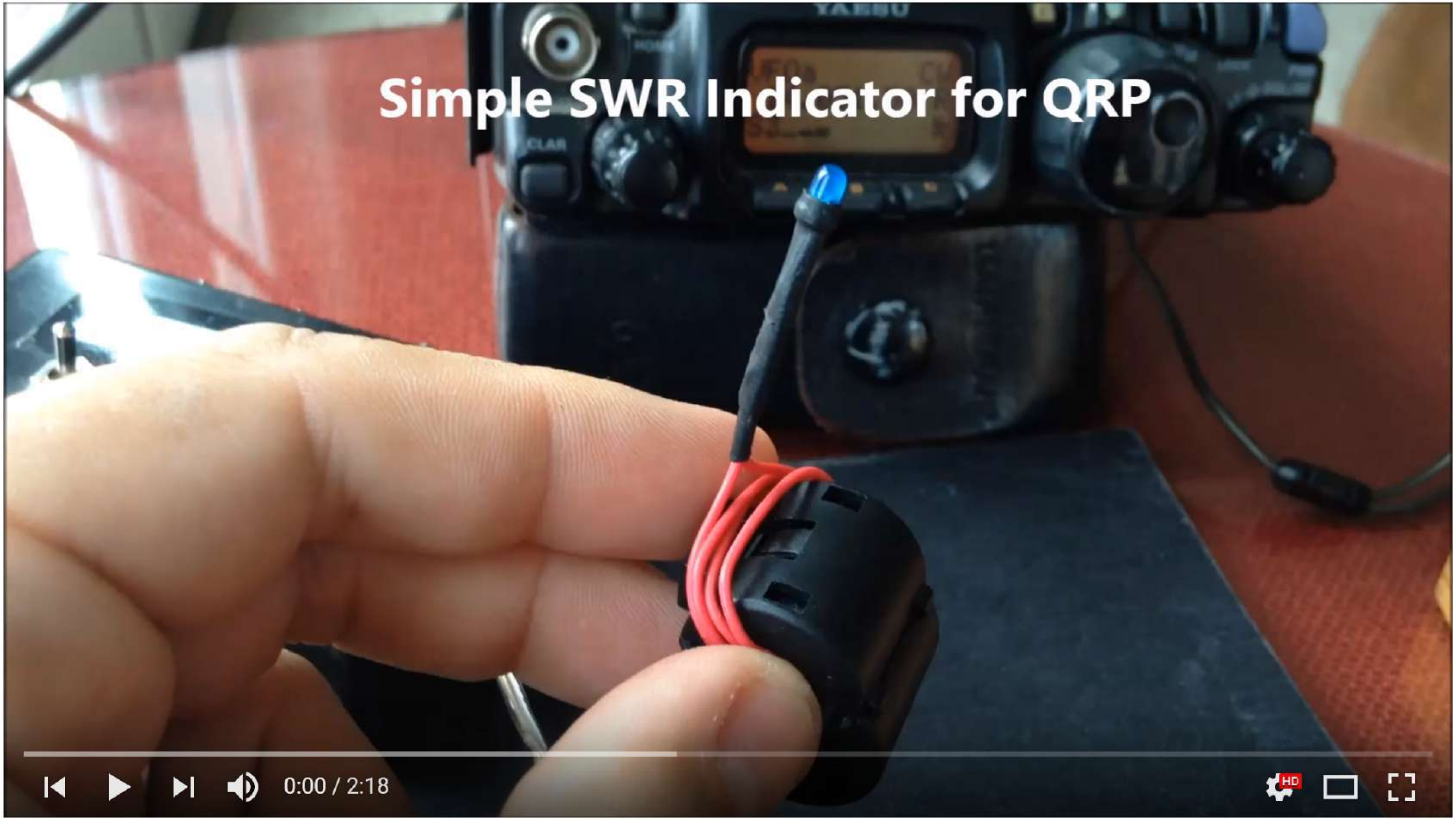

use epoxy


B220K


lampshade
2 bits of wire to join earth points
Pot
Tuner
Audio







Simple SWR Indicator for QRP

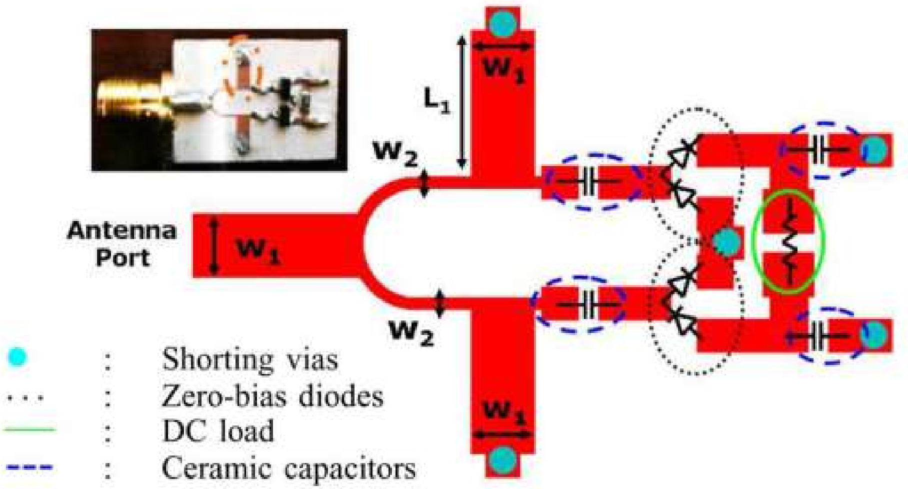
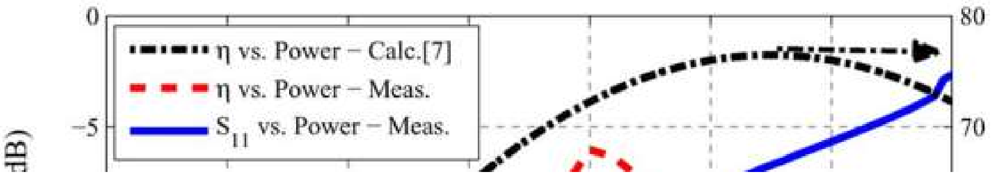


Fig. 3. Layout of the rectifier prototype, printed on RO3206. $w_1 = 72$ mil, $w_2 = 15$ mil, and $L_1 = 171$ mil. Fabricated sample is shown in top left, and the impedance matching stub is encircled.



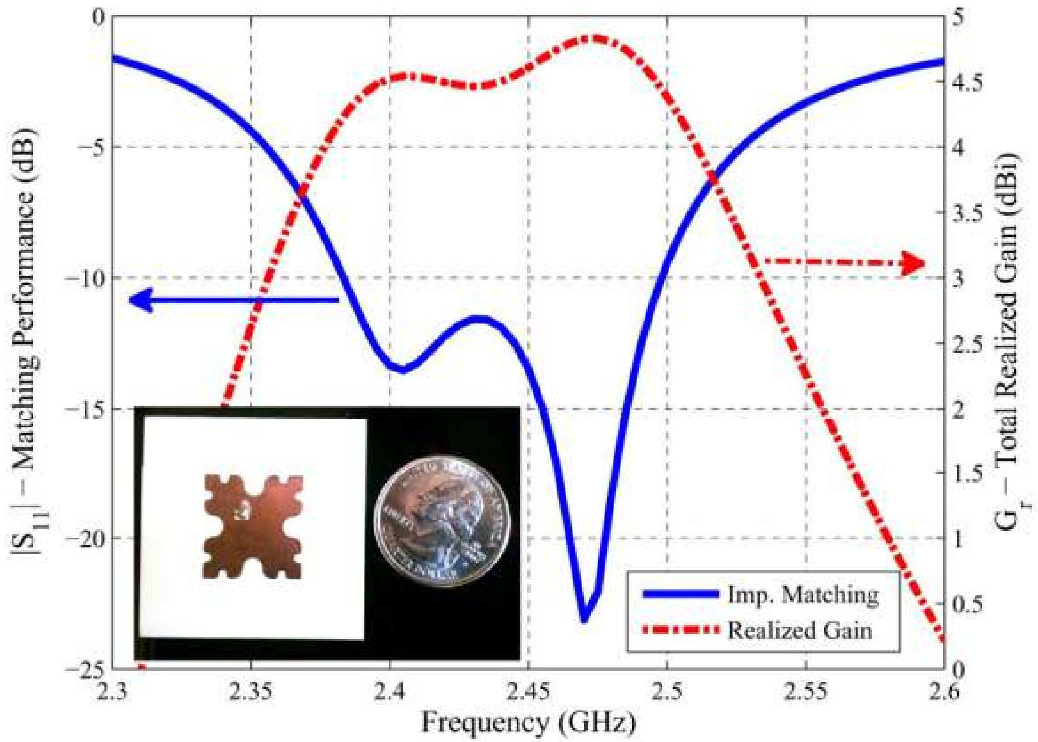
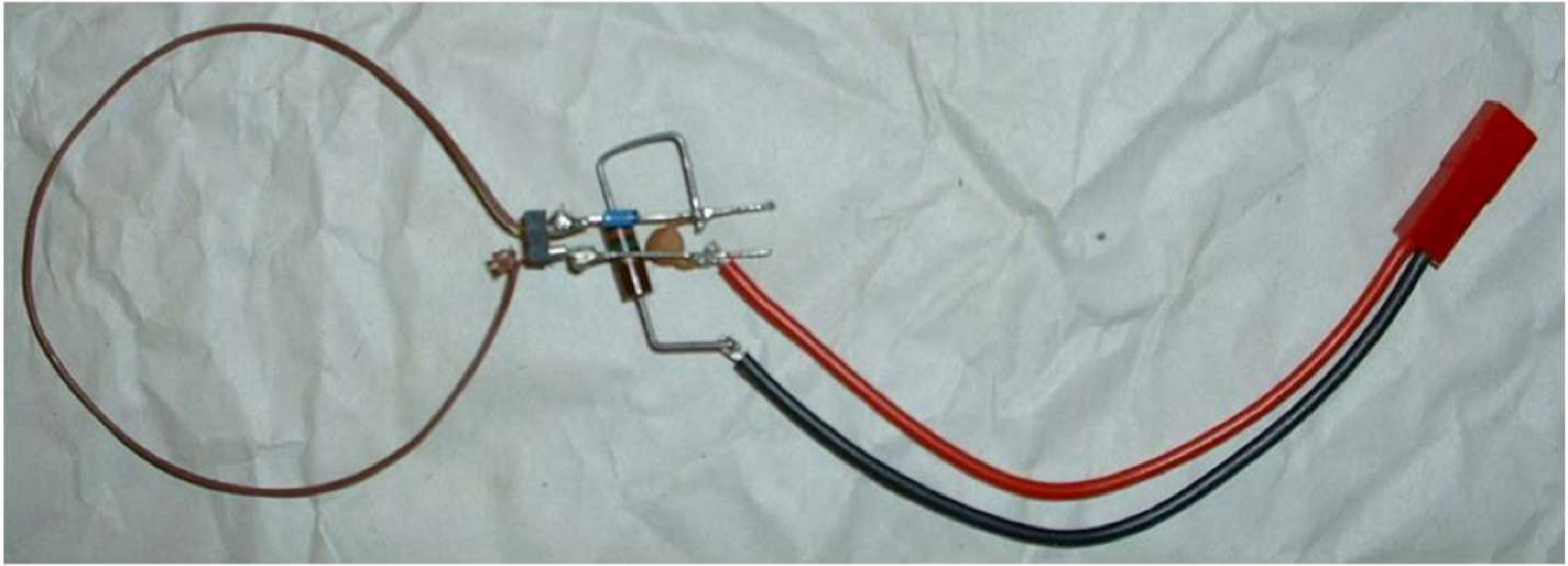
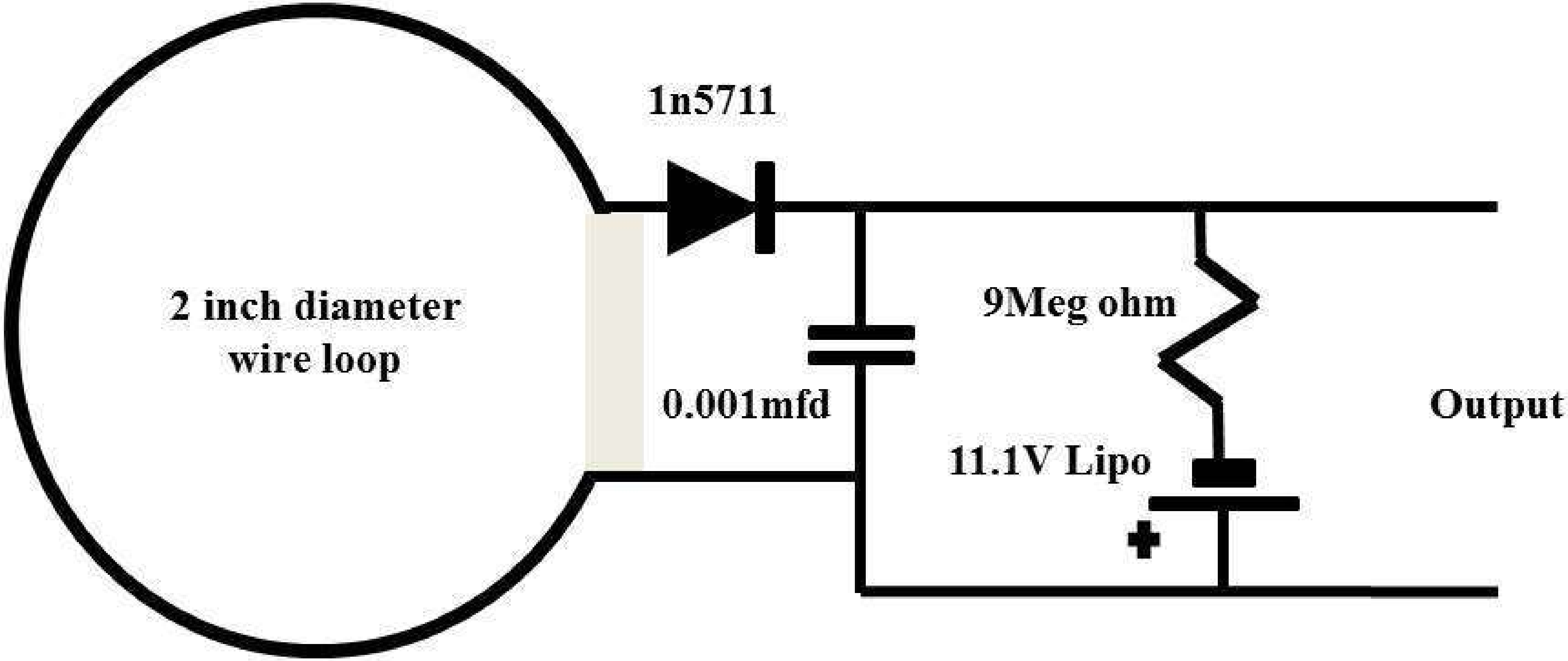


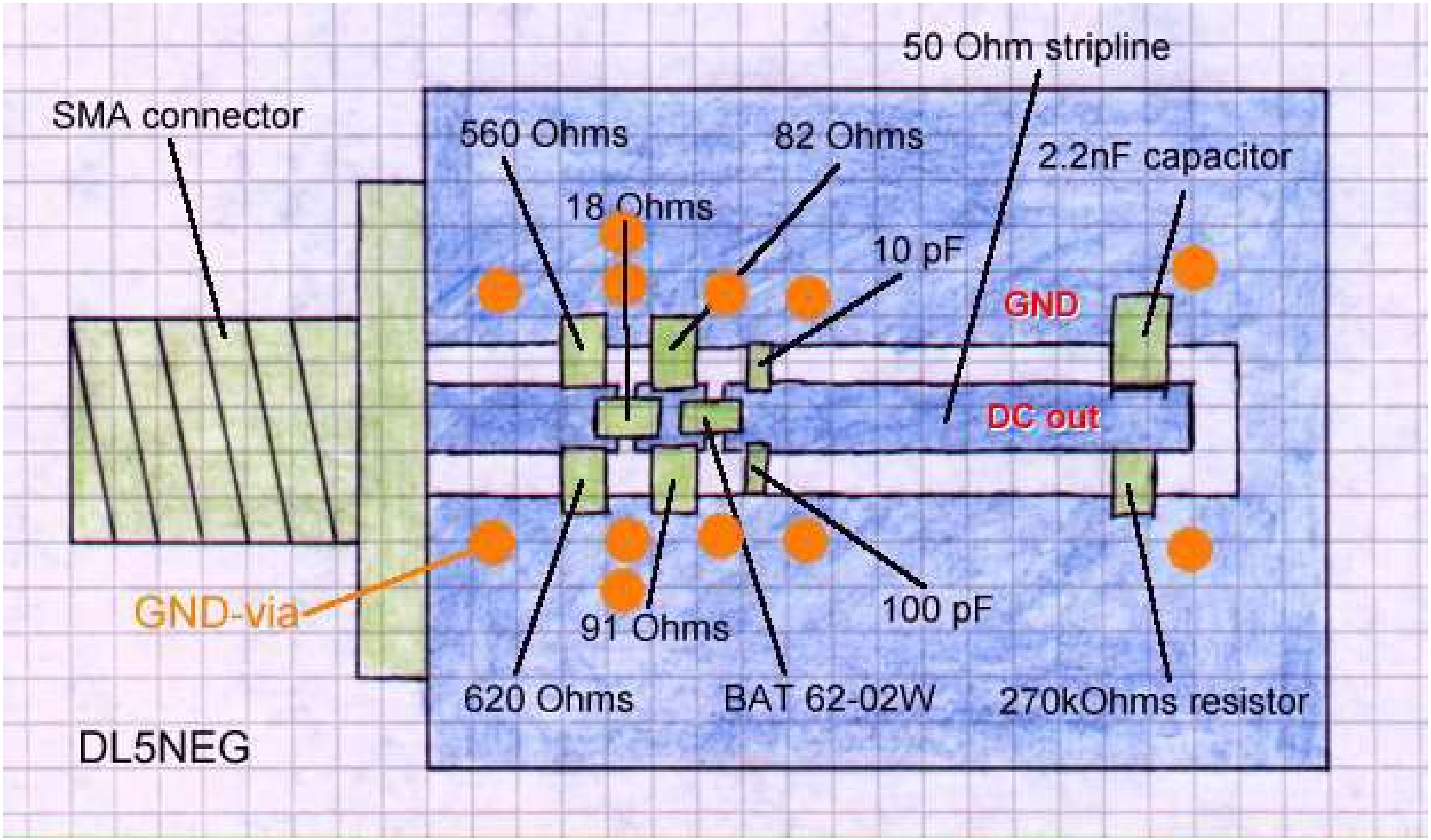
Fig. 5. Measured $|S_{11}|$ performance and total realized gain (at boresight) of the proposed antenna. Fabricated sample is shown in bottom left.





A more sensitive rf field strength meter (especially for 2.4Ghz)
by Flying-llama (extending dave1993's design)

WARNING: Output can range from about negative 0.15V (little or no signal detected)
to positive volts (large signal detected)


50 Ohm stripline
SMA connector
560 Ohms
82 Ohms
2.2nF capacitor
18 Ohms
10 pF
GND
DC out
GND-via
91 Ohms
100 pF
620 Ohms
BAT 62-02W
270kOhms resistor
DL5NEG

AN RF AMMETER

James Brett G0TFP says that by looking back to the time when 'Aerial current' was used as the indicator for antenna system efficiency, instead of an s.w.r. meter, you could improve your station.

There was a time, before coaxial cable feeder was generally used in Radio Amateur stations, when output power and general antenna system efficiency were gauged by the amount of r.f. current flowing in the antenna circuitry.

In the early days of radio 'aerial current' was an important measurement to be observed. Just look at Second World War military equipment, the ammeter used for this purpose was often an hot wire type, with the antenna system current flowing through a short section of thin wire within the ammeter.

Mechanical Instrument

Such a mechanical instrument as the hot wire ammeter, shown in **Fig. 1** and hot wire thermocouple ammeters are not now generally available. The design presented here, is based on the technique of a current transformer, feeding a moving coil meter, calibrated to read root mean square (r.m.s.)* current, via a rectifier.

(The r.m.s. value of a sinewave is the mathematical derivation of the effective d.c. voltage that produces the same power in the load as a sinewave with a known peak voltage.* **Editor**)

The heat generated by the actual current flowing, caused the length of the wire to extend slightly. This slight extension was magnified via a pointer, and used on a scale, as an indication of the r.f. current passing into the feeder system and so to the antenna.

Consider what this current flow can show. In tuning up and loading antennas, it follows that the more current flowing into it the better. More current means a stronger magnetic field and hence potentially more signal radiated.

The r.f. ammeter can also be used for transmitter power output measurements. Working in to a matched dummy load or tuned and correctly matched antenna, which can be also considered as a pure resistance, measurement of the current will indicate the power.

For example with a 50Ω load and a with a measured current of 0.5A flowing, power (given by $I^2 R$) is 12.5W. Interestingly a current of 1A flowing in a 50Ω load, represents a power 50W.

With the lower h.f. bands and antennas that were often random length, measurement of current in the antenna was the easiest overload. The old hot wire instruments were very easily burnt out and even a moderate overload would alter the characteristic of the hot wire making it very inaccurate.

The design uses a current transformer with a ratio of 50:1. So, for a current of 1A flowing in the primary circuit, the secondary current will be 20mA. The secondary r.f. current is rectified by the diode bridge, D1-D4, and used to drive the

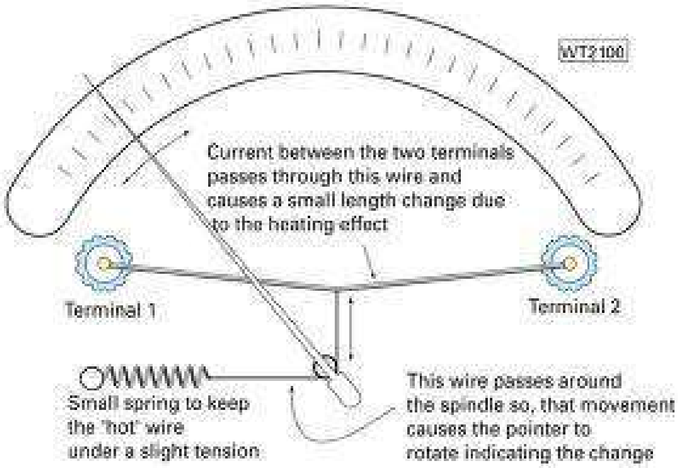


Fig. 1: A skeleton view of a hot wire current meter, an instrument that reads a.c. (r.m.s.) or d.c. current with the same scale. See text for more details.

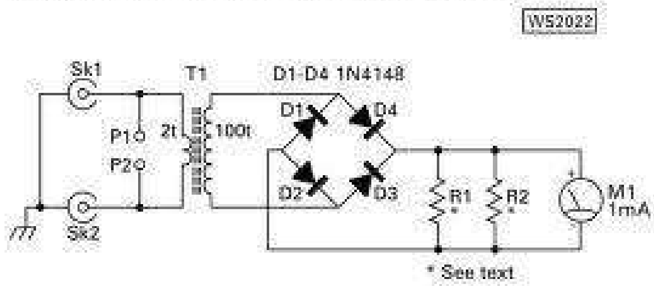


Fig. 2: The circuit diagram of G0TFP's r.f. current meter. See text for more detail.

solution to maximising output. Using the r.f. current ammeter this approach can be repeated and other experiments with long wire antennas made.

Circuit Diagram

The circuit diagram of my current meter, is shown in **Fig. 2**. One big advantage of this approach is its tolerance to shunted moving coil meter M1.

The peak value of a sinewave is 1.414 times (√2) its r.m.s. value (either current or voltage). But in a meter the value indicated in not the r.m.s. but the value of the mean voltage (or current). Like all moving coil meters, the displayed value of the rectified a.c. is the mean value of the a.c. voltage's peak level. And so, this must be taken

into when calibrating the meter.

Mean Value

The mean value of a sinewave is 0.636 times the peak level. Hence the meter will not indicate the r.m.s. value, but the lower, mean value. Let's assume we wish to measure a primary current of 1A r.m.s.. The 20mA r.m.s. in the secondary must be shunted to display the mean value of this value at full scale. We must bypass some of the secondary current with low value resistors, shown as R1 and R2 in the circuit diagram of Fig. 2.

The peak value of a 20mA current is 28.28mA so, the meter must be shunted to show a full scale reading with the mean of this current. To calculate the mean value of 28.28, multiply it by the mean conversion ratio of 0.636. So, 0.636Y28.28 = 17.98mA or more practically 18mA full scale, corresponding to a primary current of 1A r.m.s..

If you know the internal resistance of the milliammeter, then it's quite easy to calculate the actual value of the shunt. But I've found that the best way to make up the shunt is by trial and error using several low value resistors connected in parallel. In my prototype, this worked out as a shunting resistance made from one 15Ω and two 10Ω resistors in parallel, giving 3.75Ω in parallel with the 1mA meter.

Construction Simple

Construction of the current meter is simple, as shown in the photographs. Just remember to keep leads short and layout as compact as practically possible, **Fig. 3**. The toroidal current transformer is wound as a single layer with 100 turns of 0.2mm (36s.w.g.) enamelled wire and two turns of 1 x 0.24 plastic covered hook up wire.

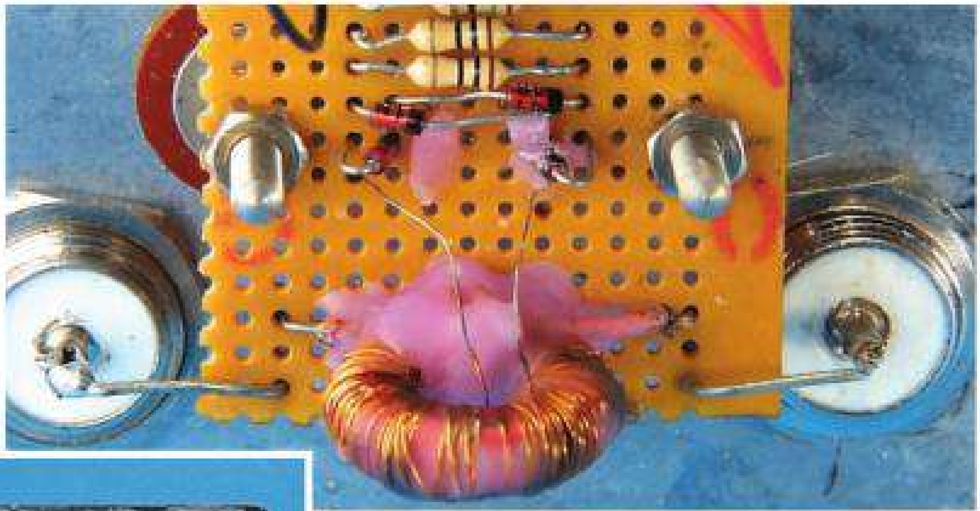


Fig. 3: All components are mounted on a small piece of Perf-board mounted between the two coaxial sockets.

Fig. 4: A close up of the simple layout of the current sensing transformer, rectifiers, and loading resistors.

I find that a convenient way to wind 100 turns on the toroid is to take a little over two metres of the enamelled wire and thread one end on to a darning needle. Pass half the wire through the toroid, held in a bulldog clip, and restrain the wire.

Use the needle to feed the wire through the middle of the toroid, as you wind 50 turns evenly over the free half of the toroid. Next rotate the toroid, so that the wound half is held in the bulldog clip, then again using the needle, thread the remaining half length of wire through the toroid to wind a further 50 turns.

You should now have a single winding with 100 turns evenly wound on the toroid. A small dab of glue at each end will hold this winding in place. Then wind the primary two turns onto the toroid, leaving the ends free.

Circuit Board

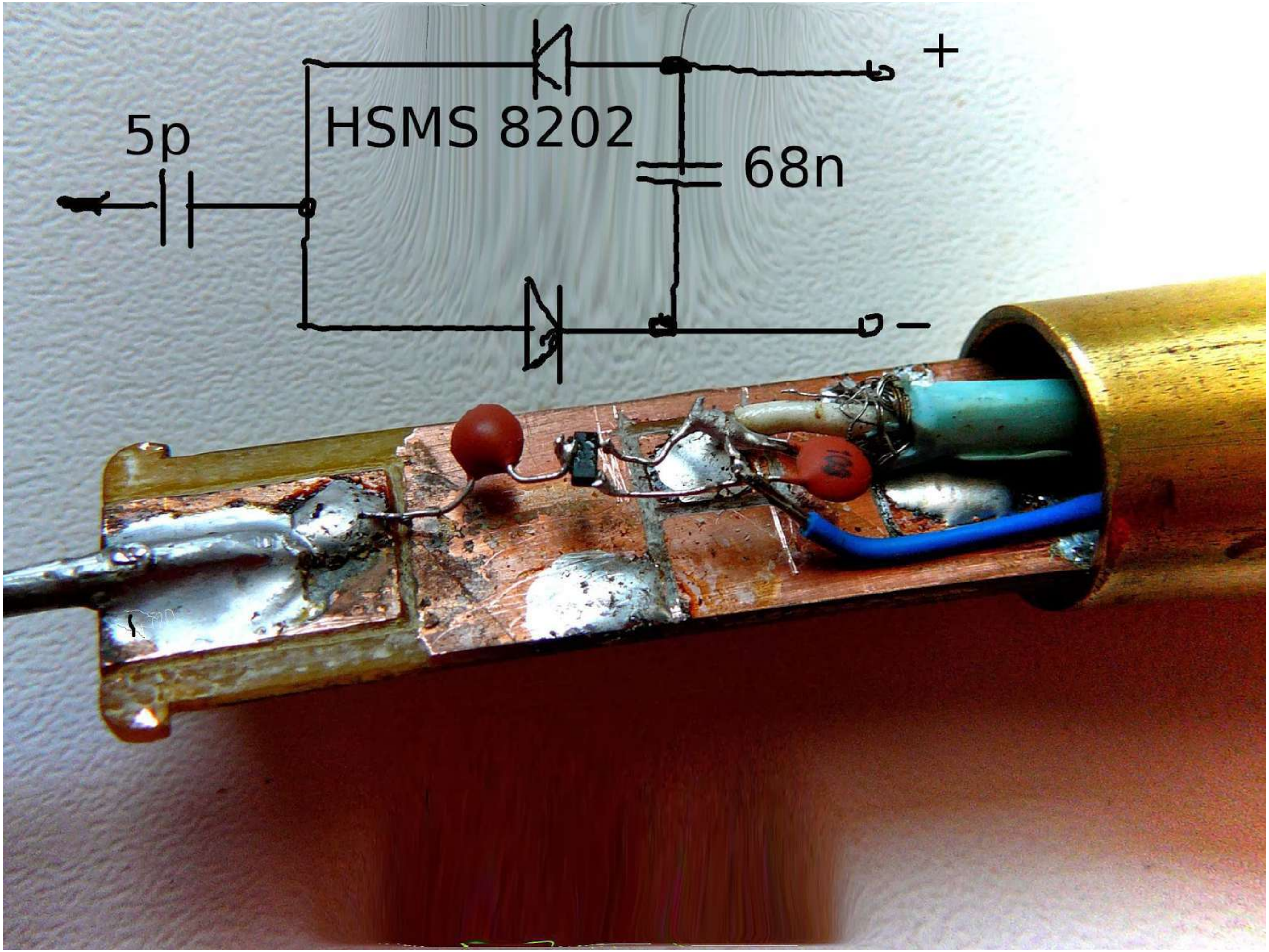
My circuit board is assembled and can be positioned so that direct connection to the terminals can be made, **Fig. 4**. This will also support the circuit board. Cut unwanted tracks and ensure that the terminal nuts are not making any unwanted short circuits. The toroid is supported by the primary winding and held in place by dropping melted candle wax on to the toroid and circuit board.

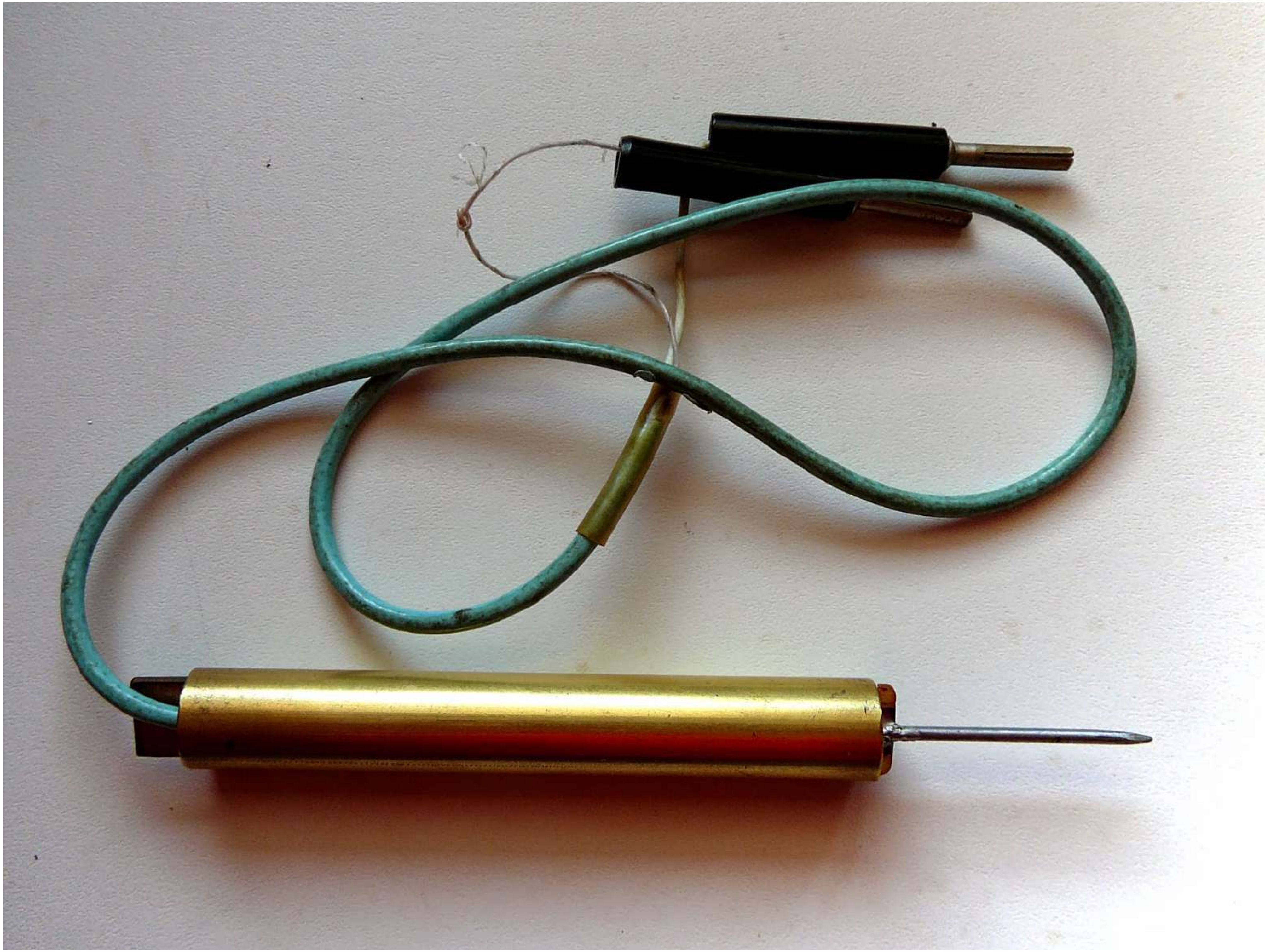
After checking that all is well the ammeter is ready to use. The prototype was checked using a transmitter and dummy load. Calculation of power from current measurements showed good correlation with the selected power levels from the transmitter.

Now you can begin testing out all your antenna systems, and you have a reading of the real power passing up into the antenna system. You never know - you might dispense with the s.w.r. meter all together! *PW*

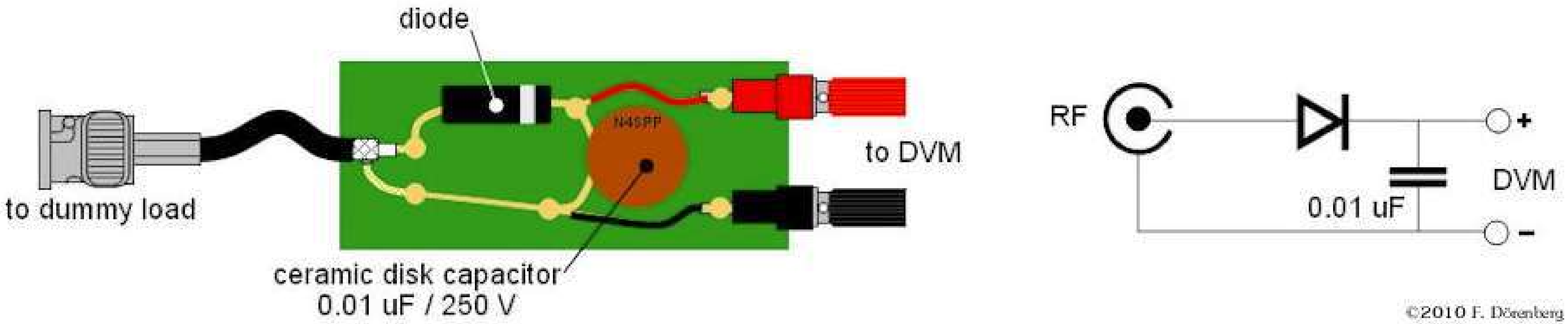
COMPONENT LIST

To make the r.f. ammeter, you will need the following items:
A 1mA moving coil meter, four diodes (typically IN4148 or IN914), one T68-2 toroid (Micrometals), several low value resistors for shunt (see text), two panel sockets, two terminals, a die cast box (depth to suit meter) and finally, a small piece of Veroboard or Perfboard.


+
HSMS 8202
5p
68n
–



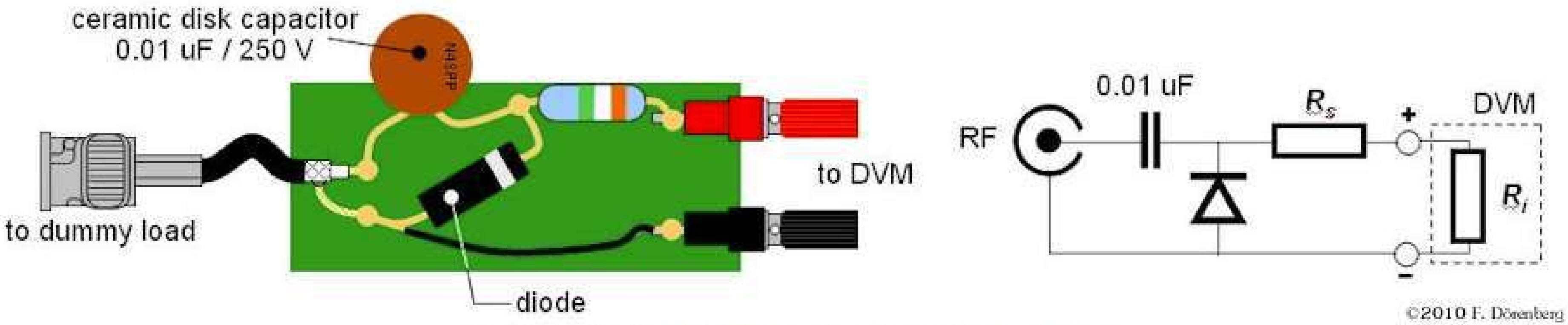
Here is a simple standard circuit:



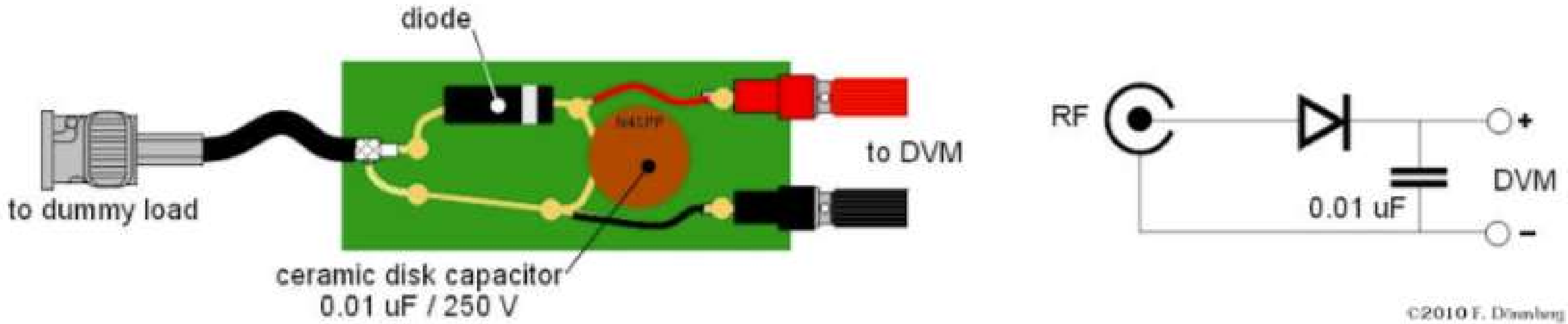
A simple RF-probe

Obviously, this circuit will be fooled by a DC-offset on the RF signal. We can fix this by swapping the diode and the capacitor. Note that this is not necessary if you measure an RF voltage via a transformer, such as a directional coupler.

We can also make life a little easier by including a voltage divider with a scaling factor that is equal to the reciprocal of √2. Then the output voltage will be the RMS value that we are interested in. We can make a voltage divider where one resistor is the input impedance of the DVM. My DVM has a published input resistance of 10 MΩ. The second resistor should be 4M14 Ω,since 10 / (10+4.14) = 1 / √2). So 3M9 + 220k = 4M12 would be a good choice. This approach is shown below. Note that the resistor should be non-inductive (e.g., bulk-metal-foil or carbon).



RF-probe with DC-block and peak-to-RMS scaling



A simple RF-probe

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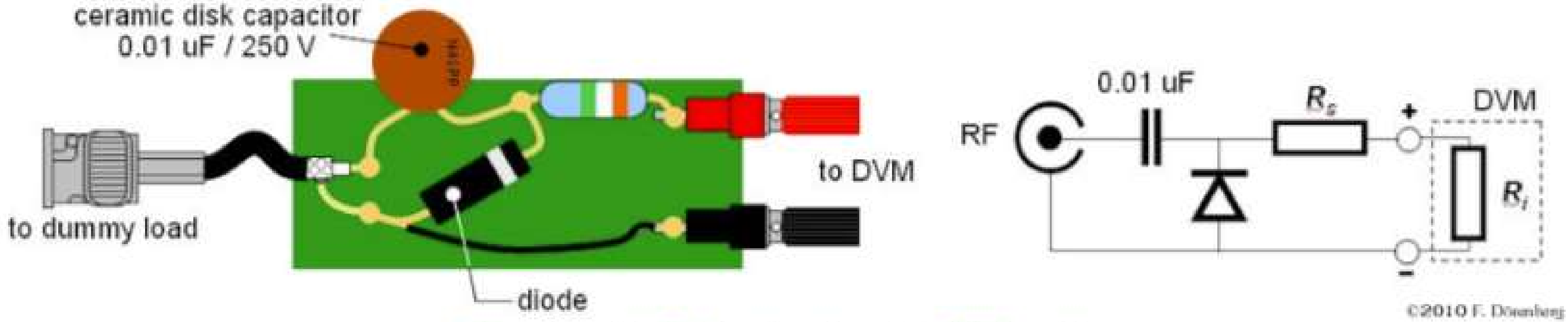
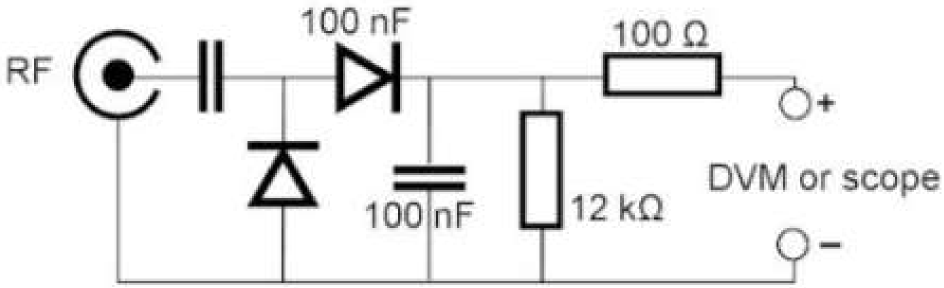
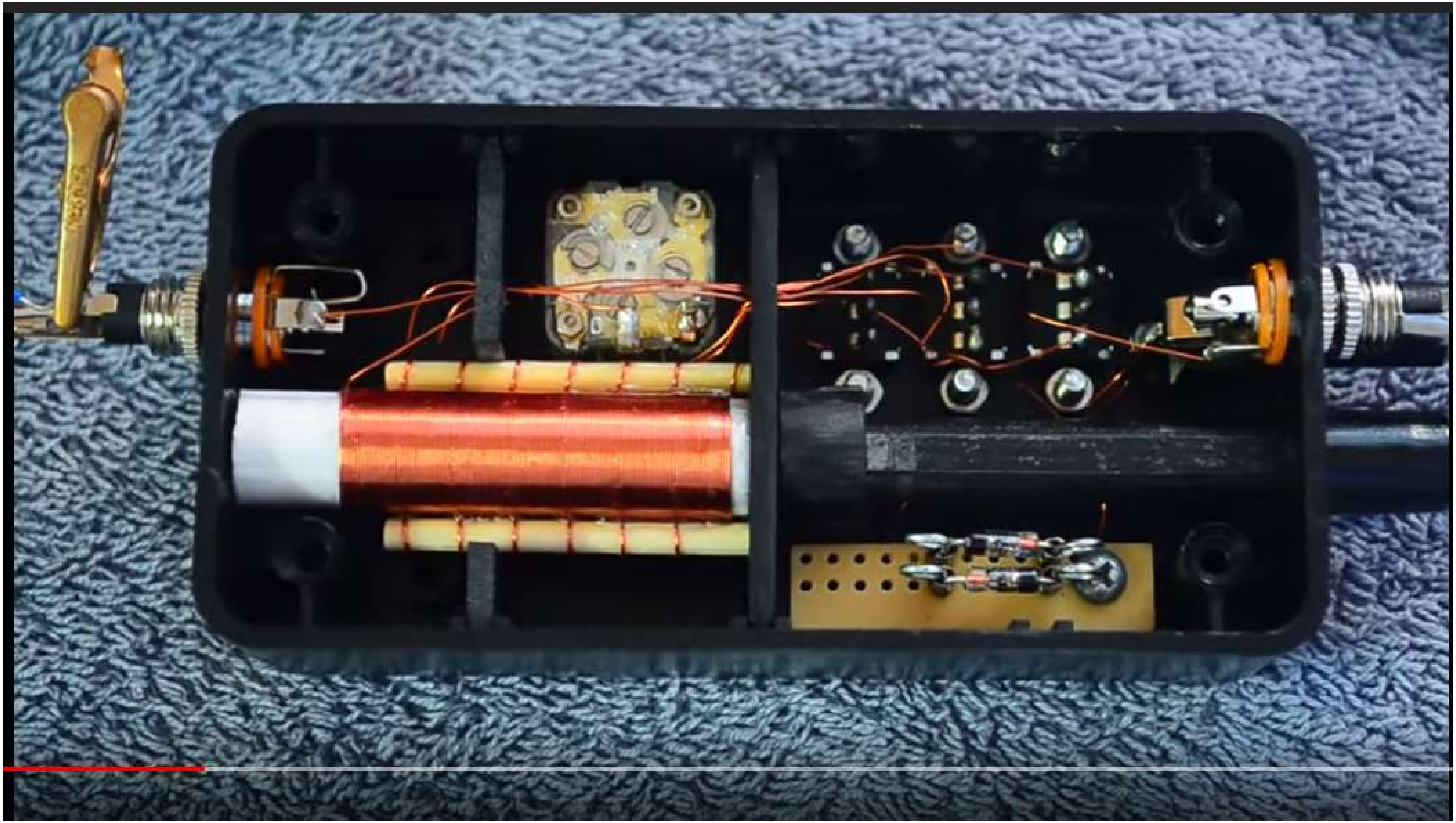


RF-probe with DC-block and peak-to-RMS scaling

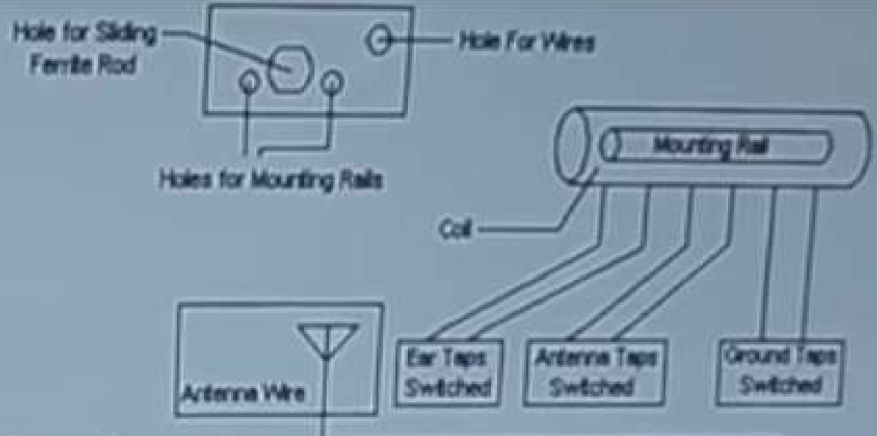
A variation on this, with a full-wave rectifier, is shown below:

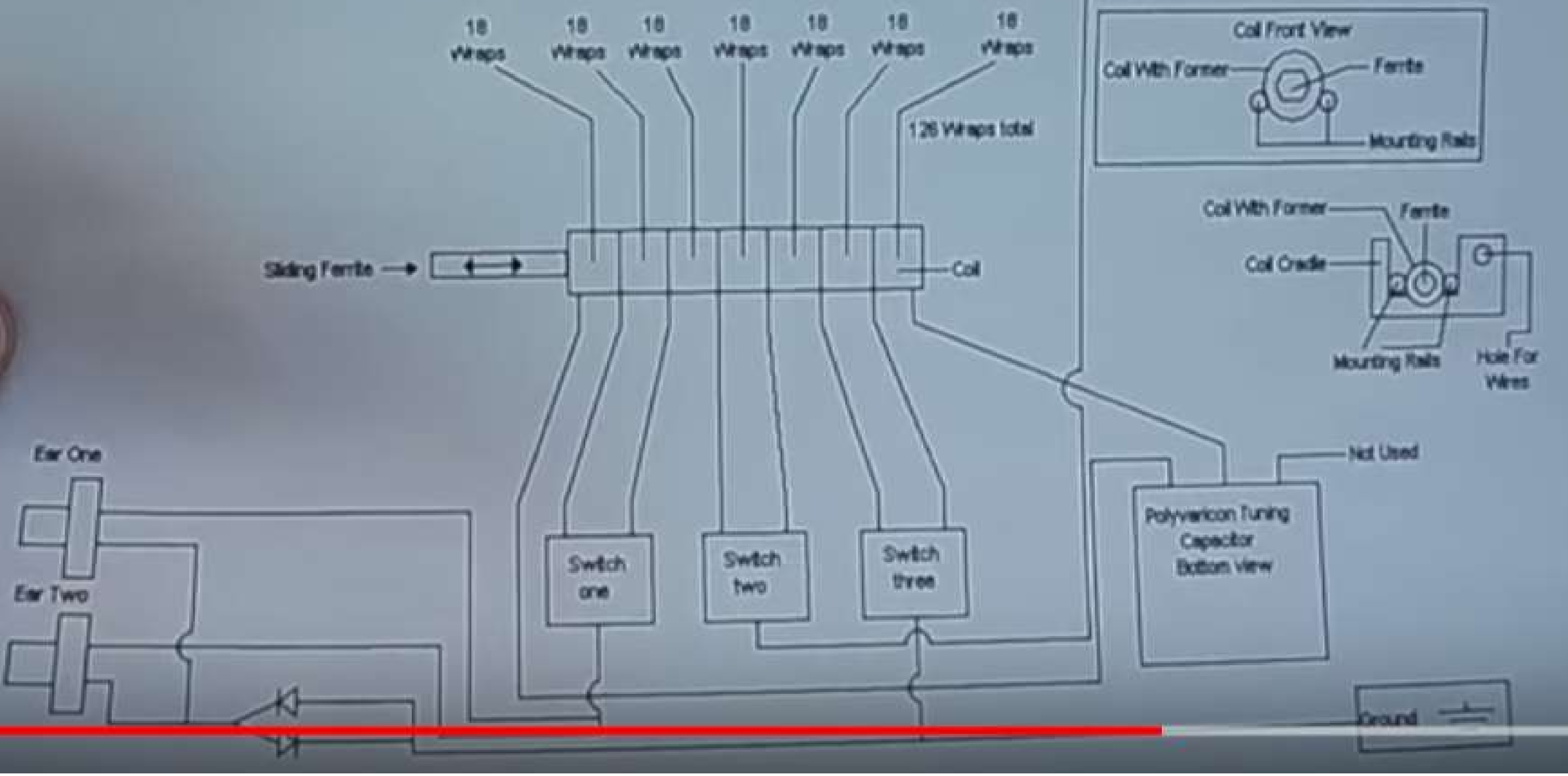


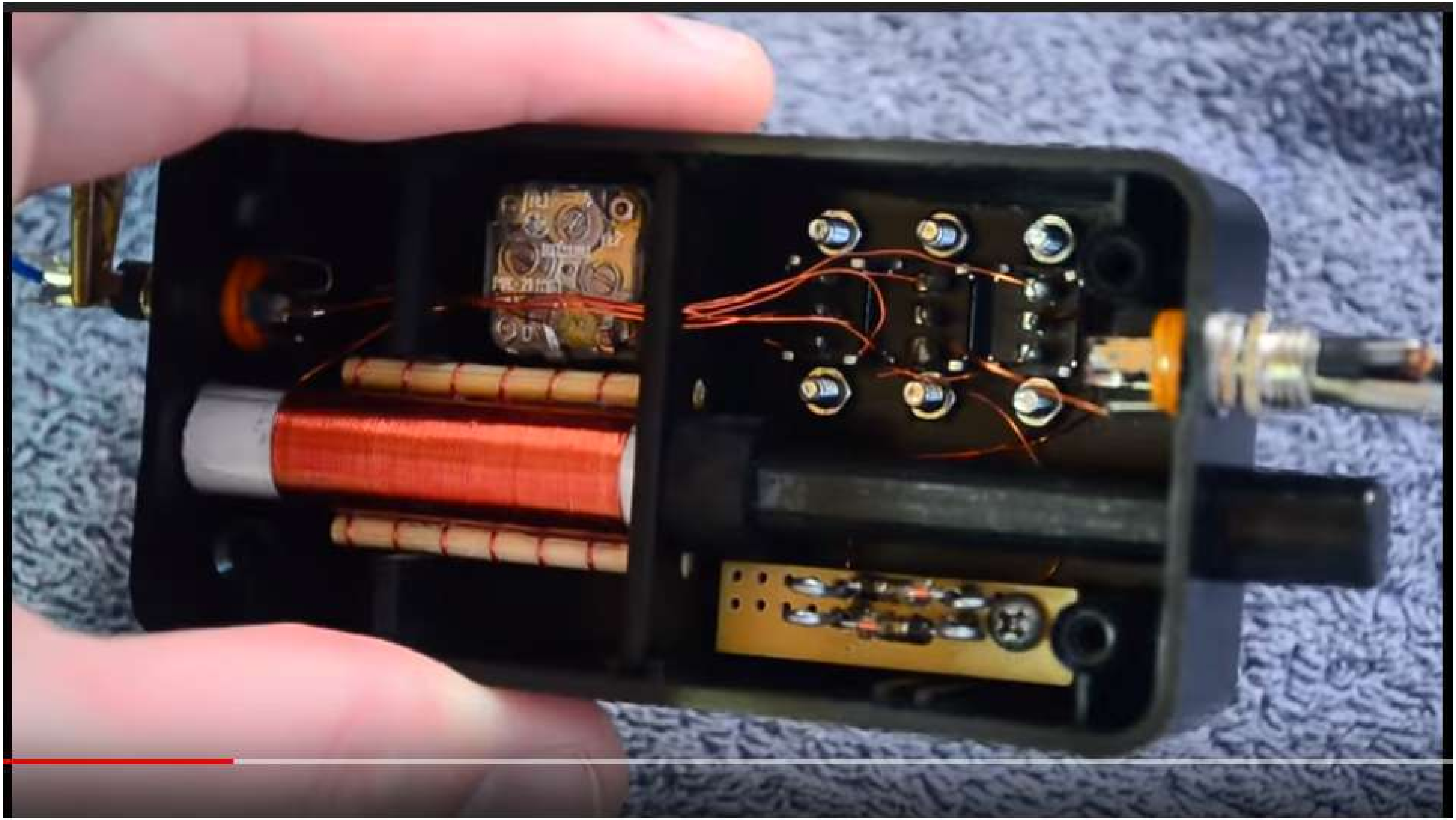
Note that these diodes are available from several manufacturers and the Vf and Vrrm may vary slightly between them. I opted for an OA91 diode, as I had one in my junk box. Note that this limits the measured power to 20 W. The AA118 (or its substitutes AA113 and 1N60) is good through 32 Watt into 50 ohm. For further considerations, see ref. 2 and 8.



Portable Homebrew crystal radio by Stalwartfixer.
Primary tuning is done with the sliding ferrite rod.
Also includes a polyvaricon tuning capacitor and tap switches to aid with signal separation.
30 gauge magnet wire was used to make the coil.
There are 18 wraps of wire between each tap for a total of 126 wraps.
This radio is designed to be used with two piezoelectric earphones but can be used with an amplifier as well.
1N949 Gold bonded germanium diodes were used for this radio.
This radio uses a 22 foot long antenna wire at 22 gauge.



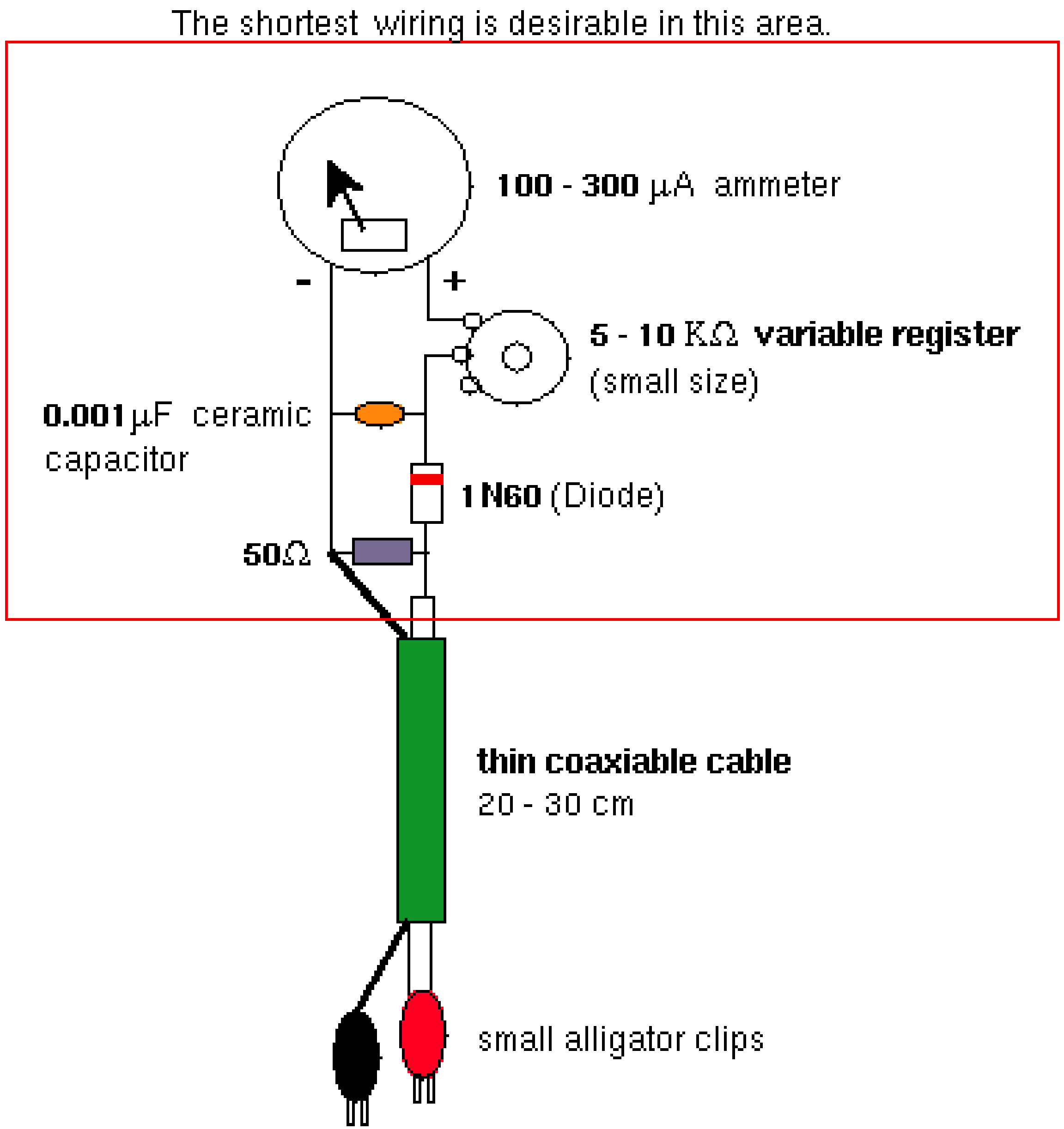




Up next

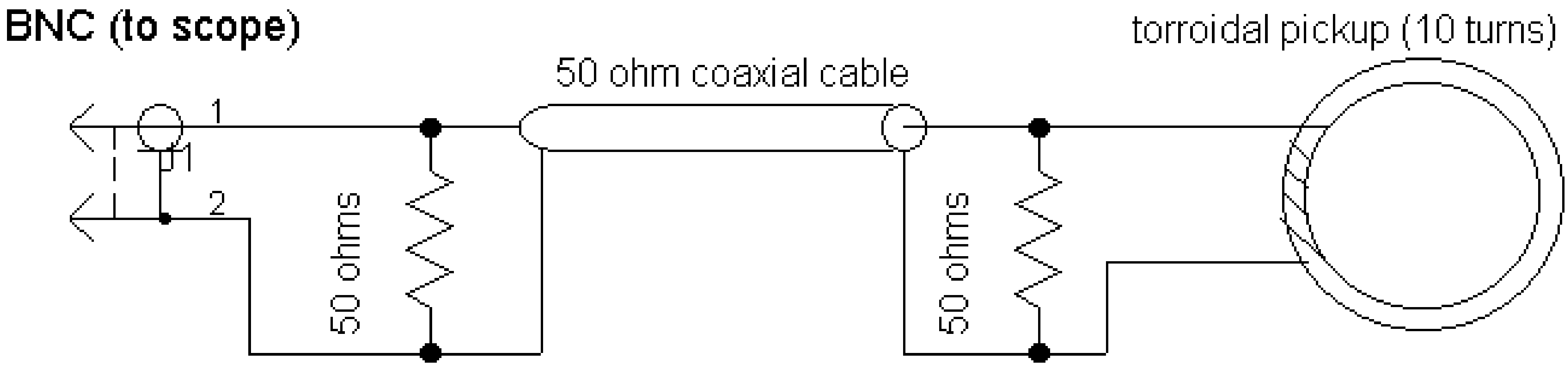
Homebrew Crystal Radio

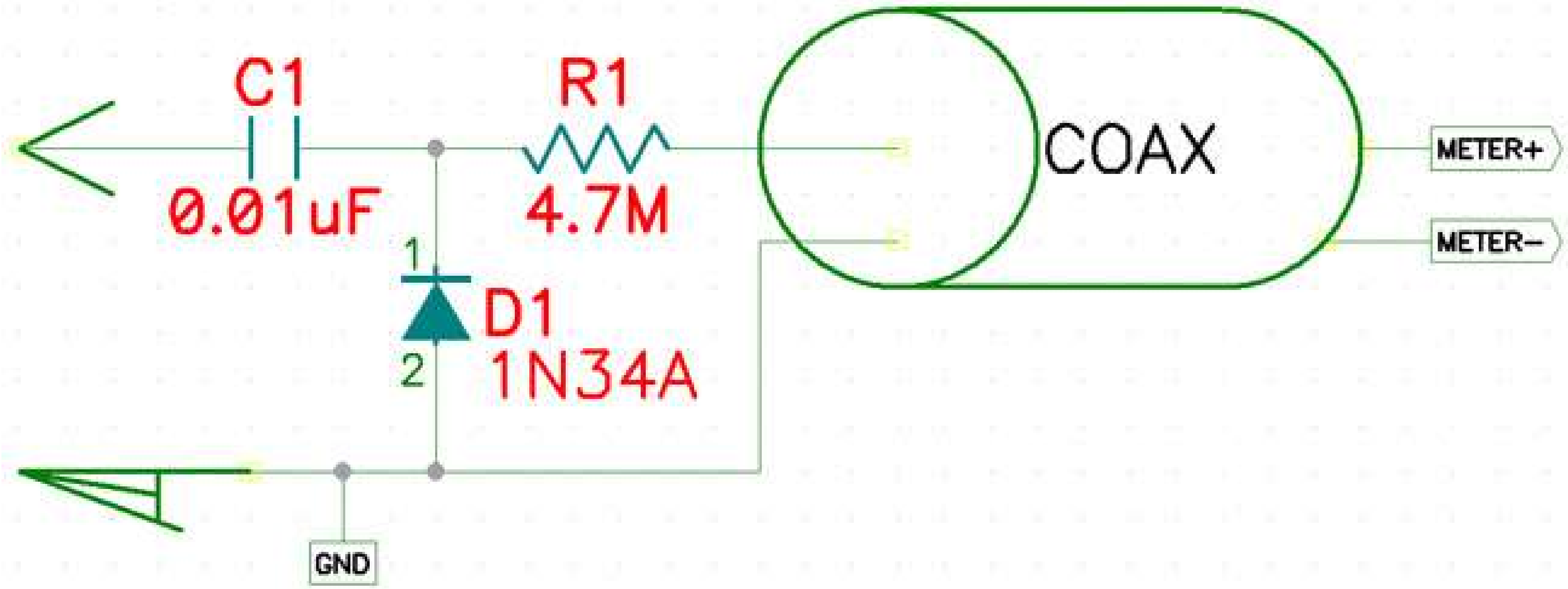
The simplest power meter



As for the ammeter, you can use an used one taking from junked audio amplifier, tape-recorder, radio-cassette, and so on.

RF Current Probe

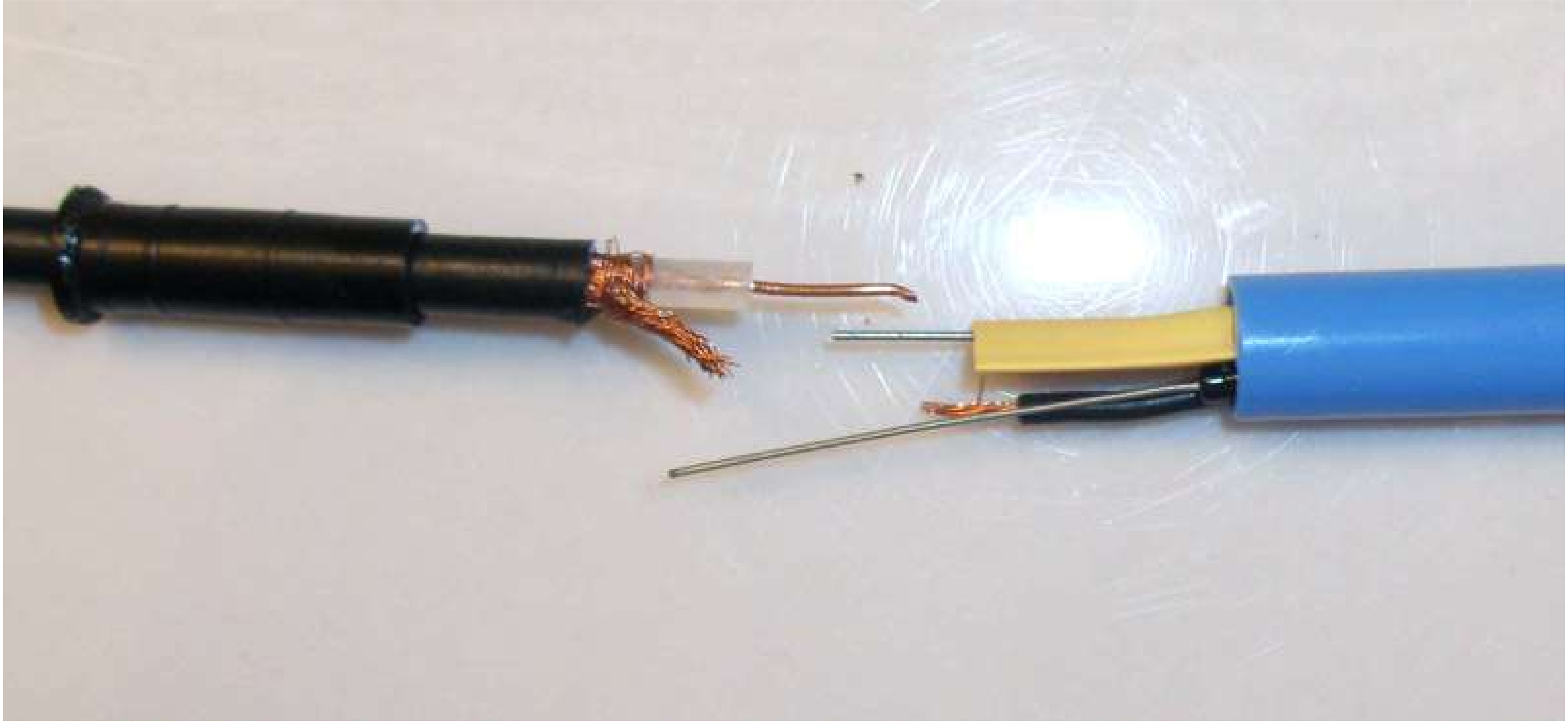


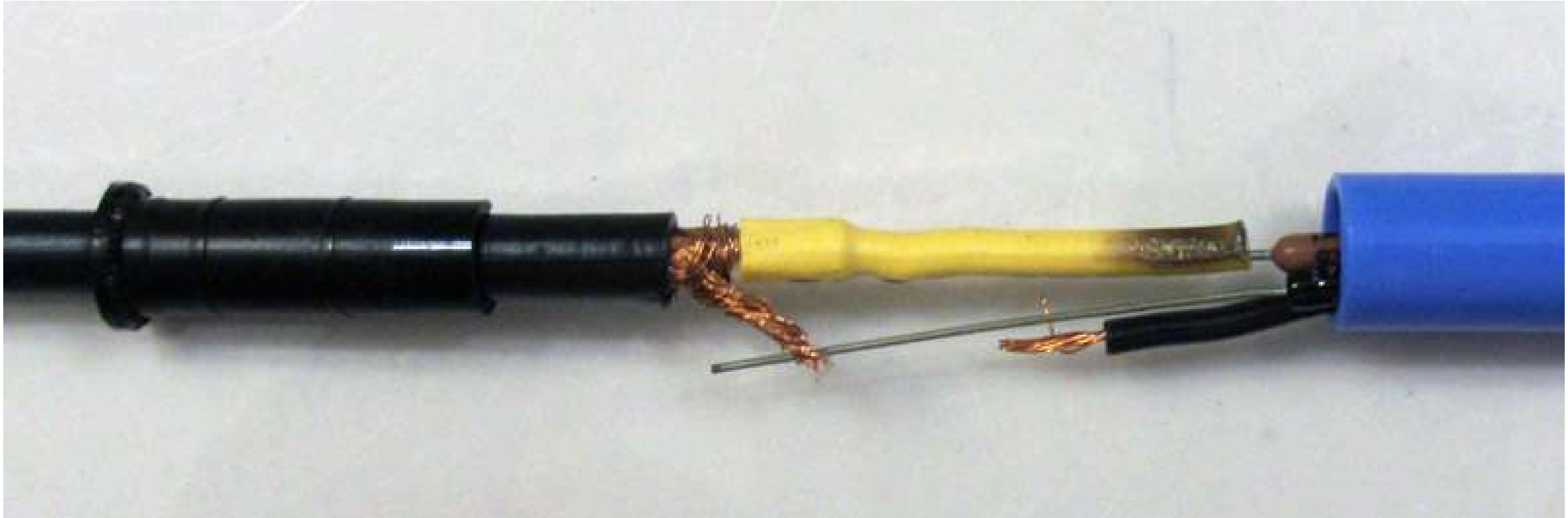


Simple RF Probe


Precision Metals
Stock # 164

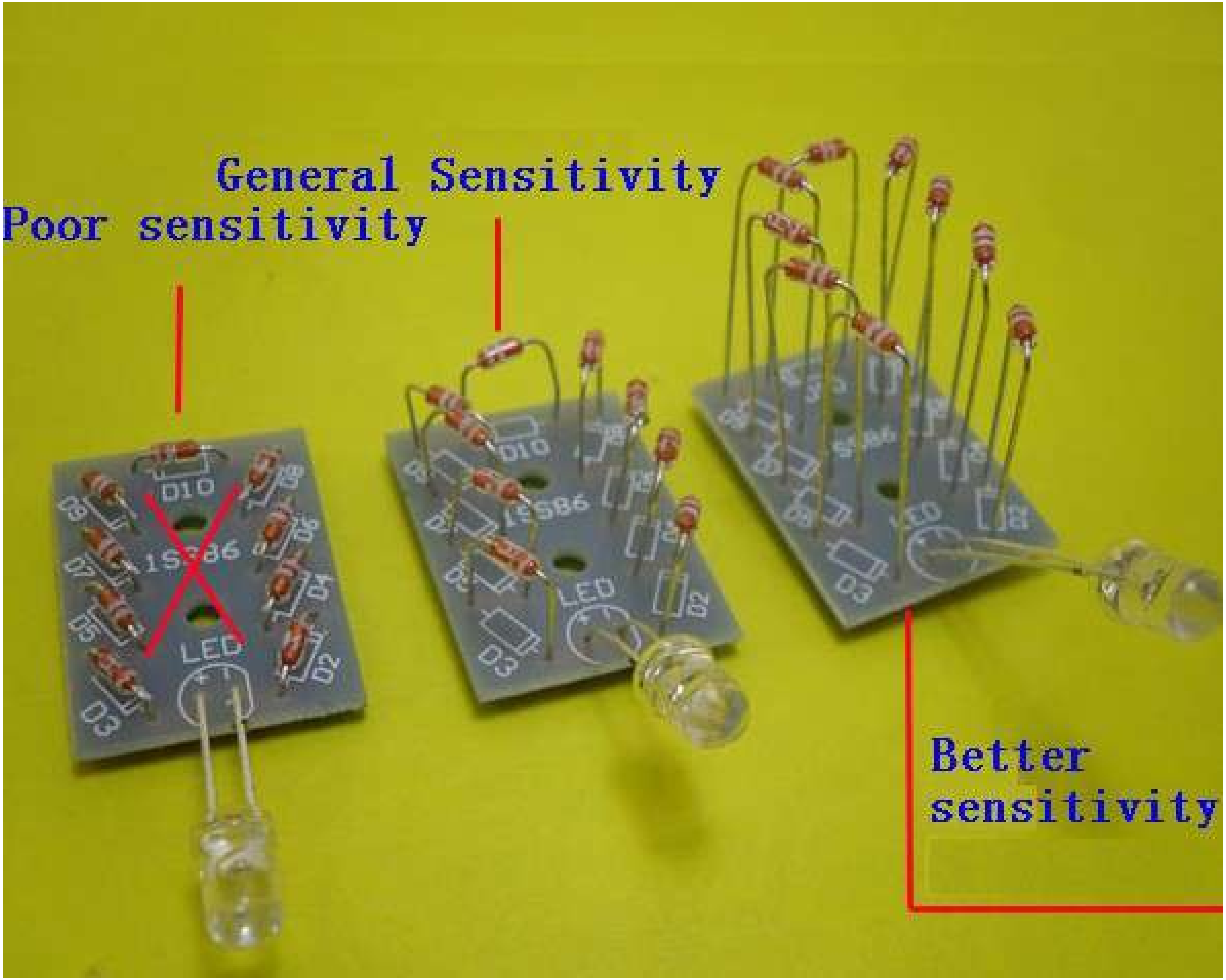

RG 58

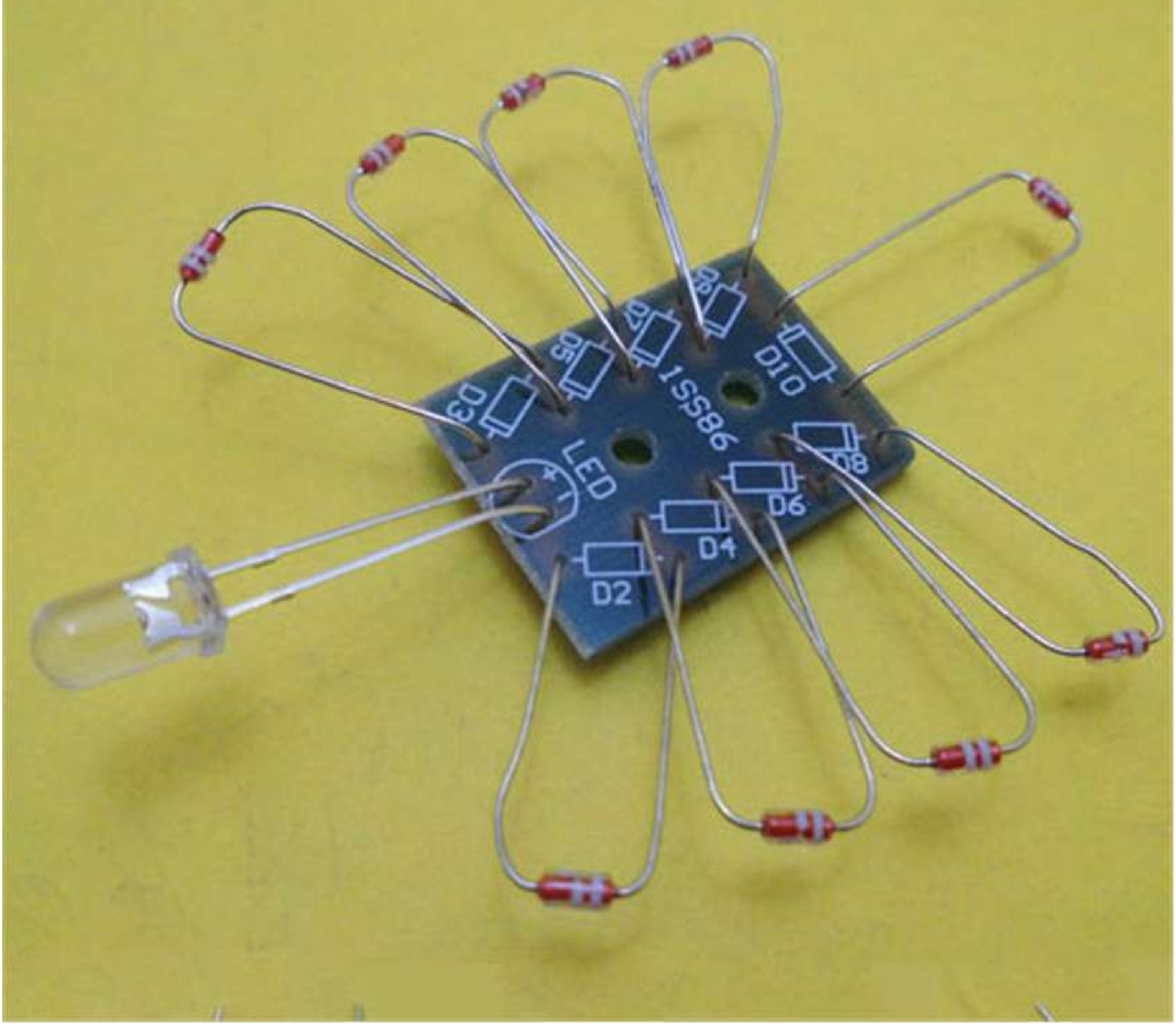




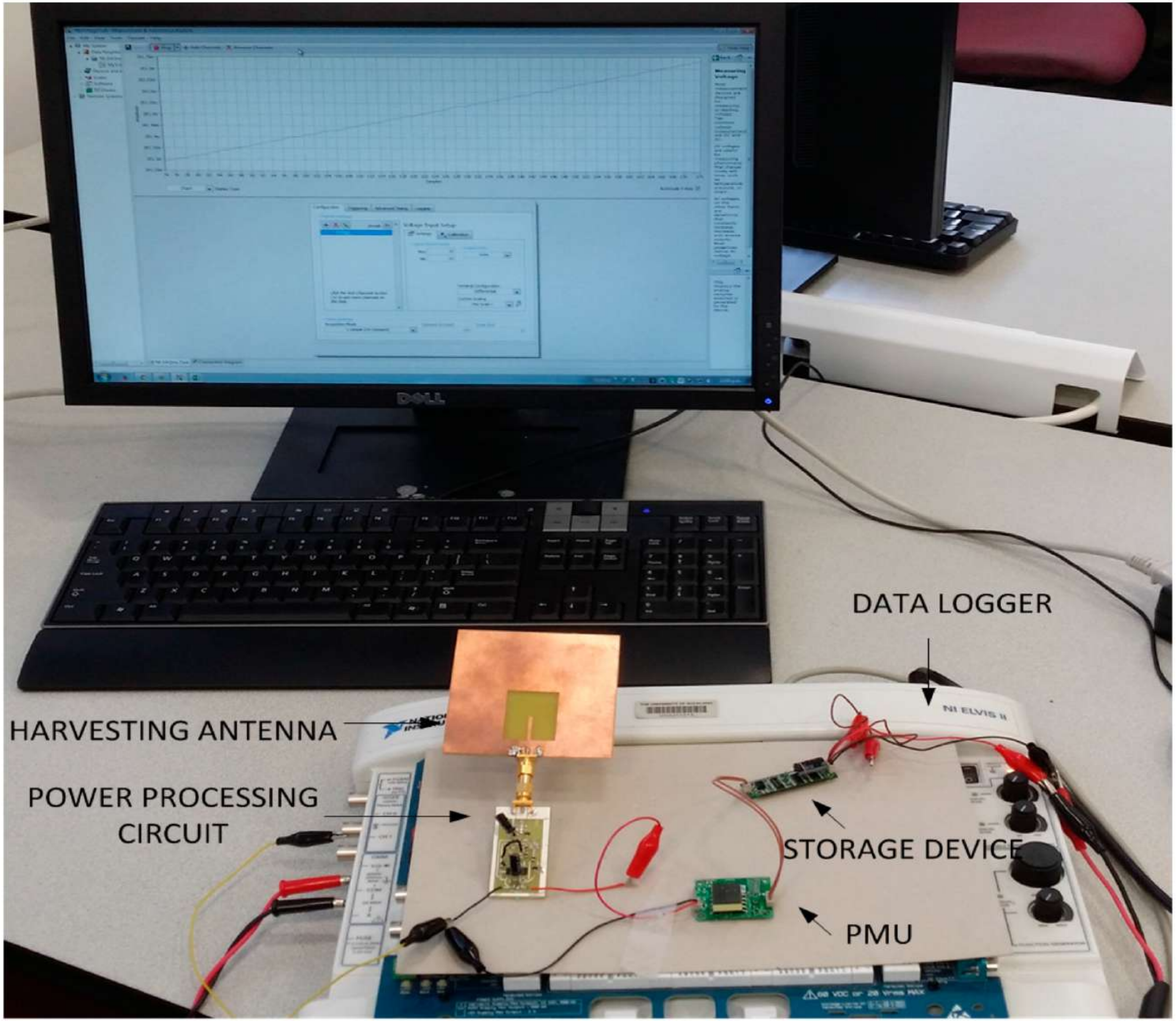
TENMA
72-4025
POWER
AC
DC
A
V
hFE
NPN
PNP
LOGIC
Hz
F
Ω
mA
COM
VΩ
10A
DISCHARGE CAPACITOR BEFORE CONNECTING


Ham Radio Project
BAND
C1
D1
D2
C2
D3
D4
L1
AF Out
C4
Harvester Aerial
Charge
External Tune
Tune
D5
Battery
V +
On
R2
ster Radio ©
I wanted to see the ambient radio harvesting voltage as the battery was not charging....
1:01 / 6:54

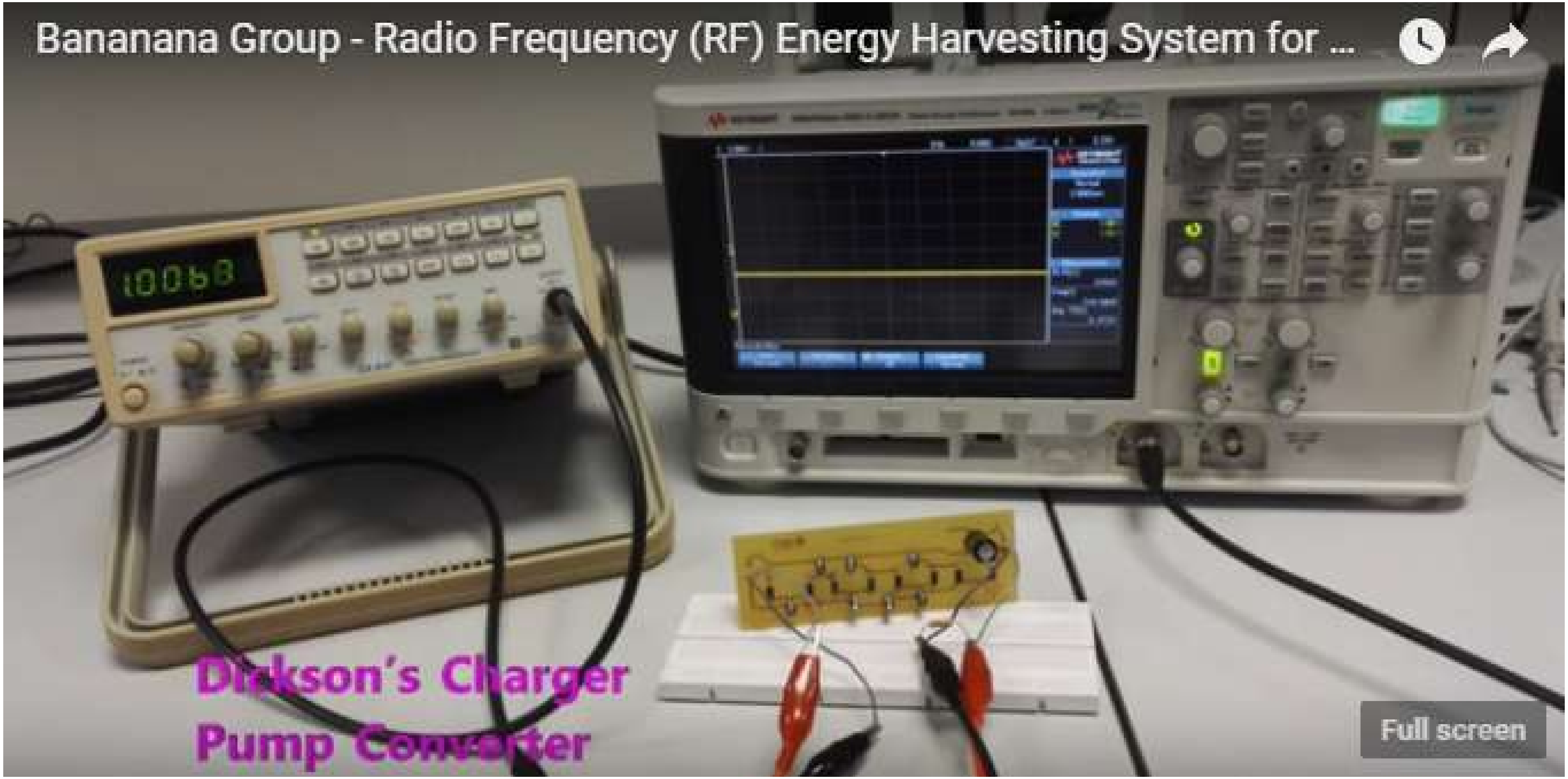

General Sensitivity
Poor sensitivity
Better sensitivity

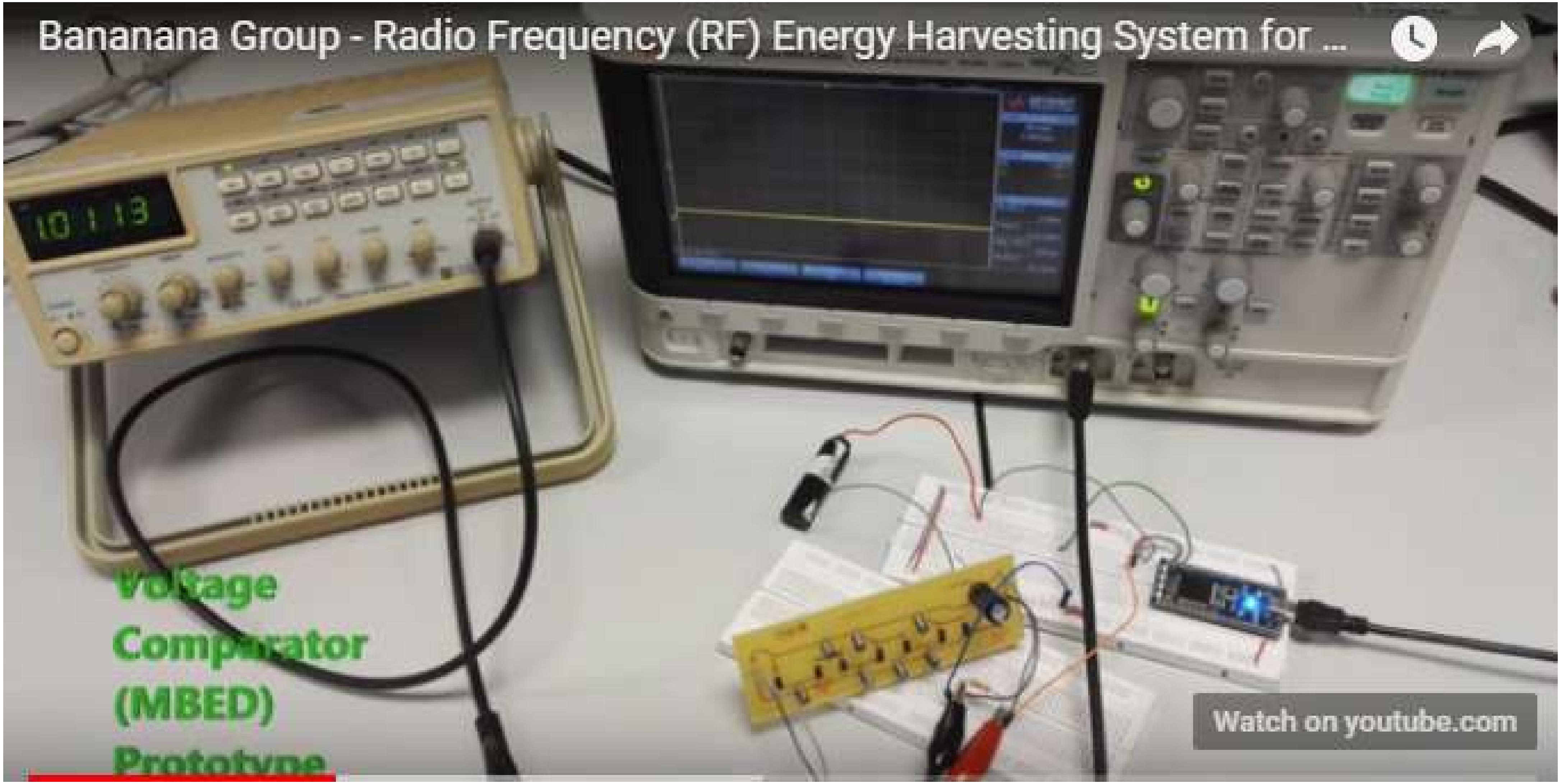

D3
D5
1SS86
D10
LED
D8
D6
D4
D2

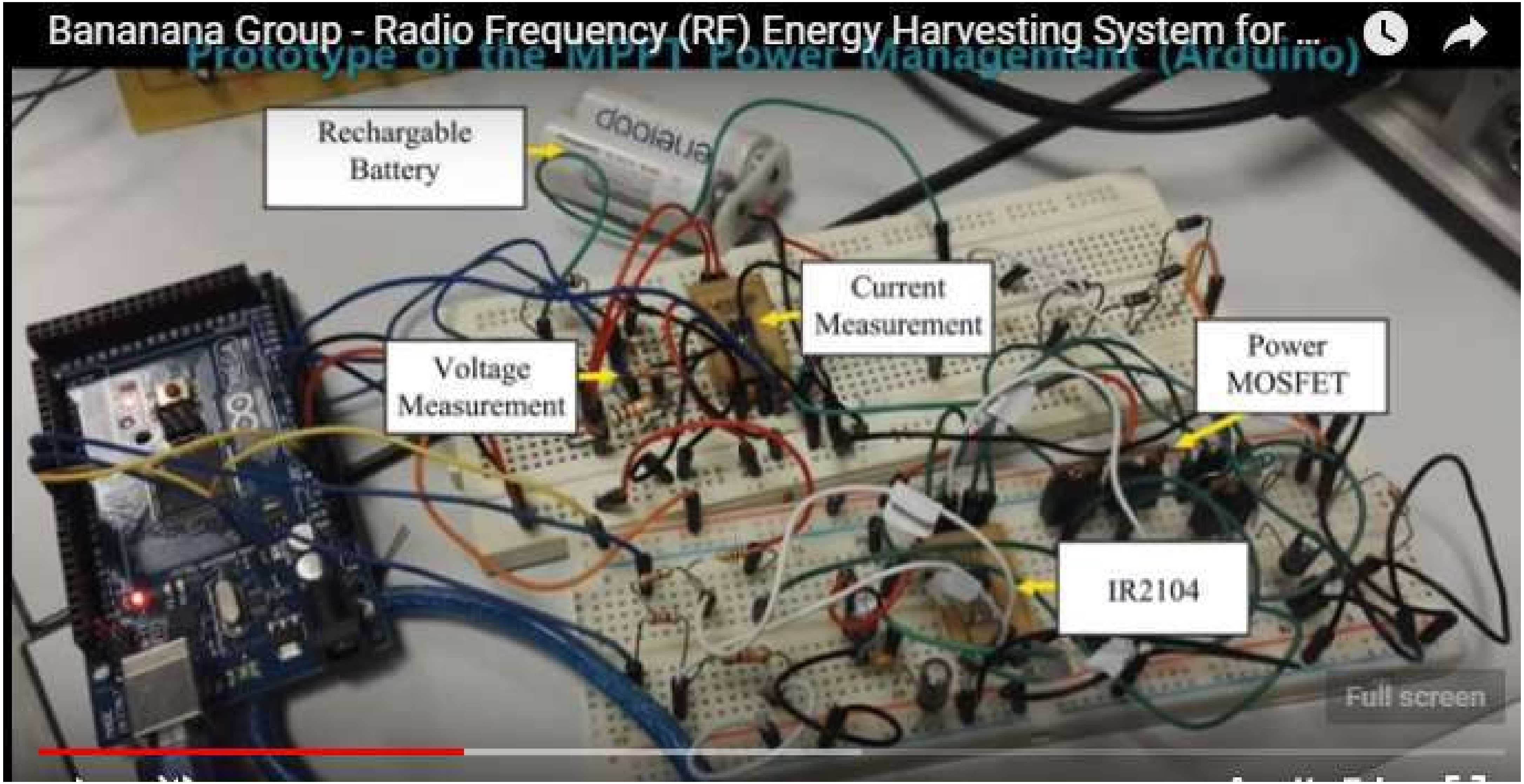

D10
1SS86
LED
D2



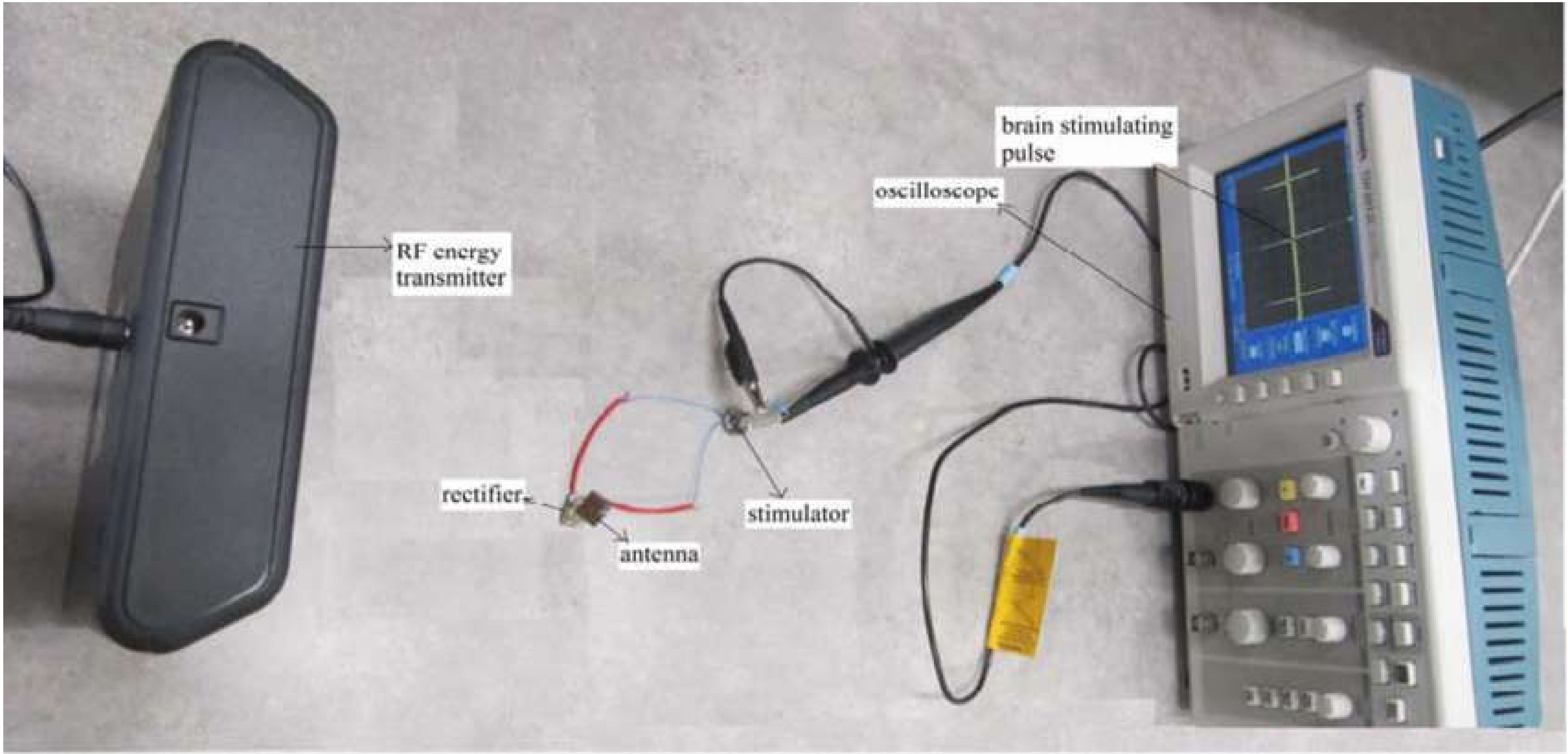
DATA LOGGER
NI ELVIS II
HARVESTING ANTENNA
POWER PROCESSING
CIRCUIT
STORAGE DEVICE
PMU


Bananana Group - Radio Frequency (RF) Energy Harvesting System for ...
Dirkson's Charger
Pump Converter
Full screen


Bananana Group - Radio Frequency (RF) Energy Harvesting System for ...
10113
Voltage
Comparator
(MBED)
Prototype
Watch on youtube.com

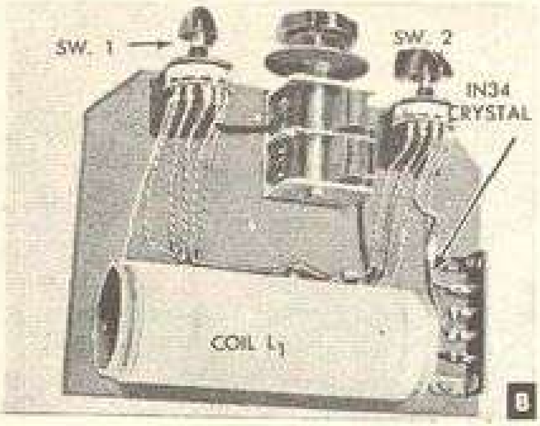


Banana Group - Radio Frequency (RF) Energy Harvesting System for ...
Prototype of the MPPT Power Management (Arduino)
Rechargable Battery
Current Measurement
Voltage Measurement
Power MOSFET
IR2104
Full screen



brain stimulating
pulse
oscilloscope
RF energy
transmitter
rectifier
stimulator
antenna

RADIO RECEIVERS

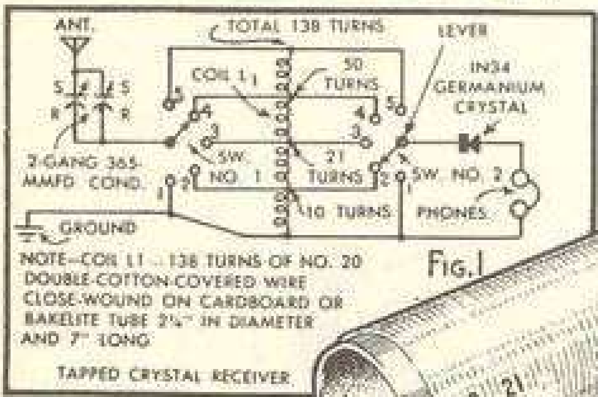


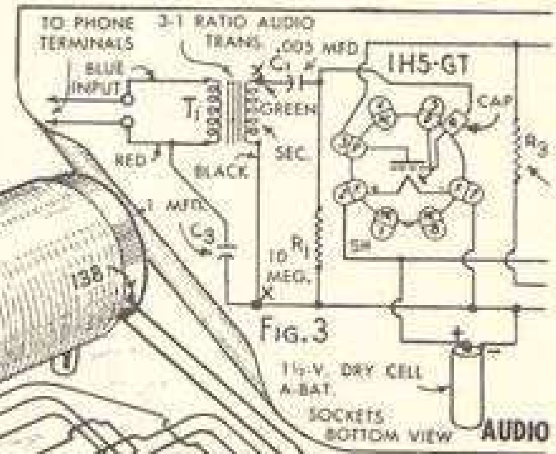
SINCE a crystal set is the simplest form of radio receiver, it is the logical starting point for the student or junior experimenter. Unlike other types of receivers a crystal set uses no batteries or power-line supply, therefore the sound that emerges from the headphones is derived entirely from radio energy picked up by the antenna. Use a long, high antenna and a ground connection to a cold-water pipe.

The selective tapped-coil crystal receiver illustrated in photos A and B employs adjustable loading in a simple tuning arrangement that is very effective when used with a good sensitive pair of headphones. A schematic circuit diagram and the coil-winding details appear in Fig. 1; pictorial wiring diagram in Fig. 2 shows all connections clearly.

The 2-gang variable-condenser stator plates (S), are connected in parallel; the rotor plates (R) are common with the frame. This lead goes to the lever of switch No. 1; the lever of switch No. 2 is connected to one side of the 1N34 germanium crystal, and the headphones are in series.

When winding the coil, place a toothpick or





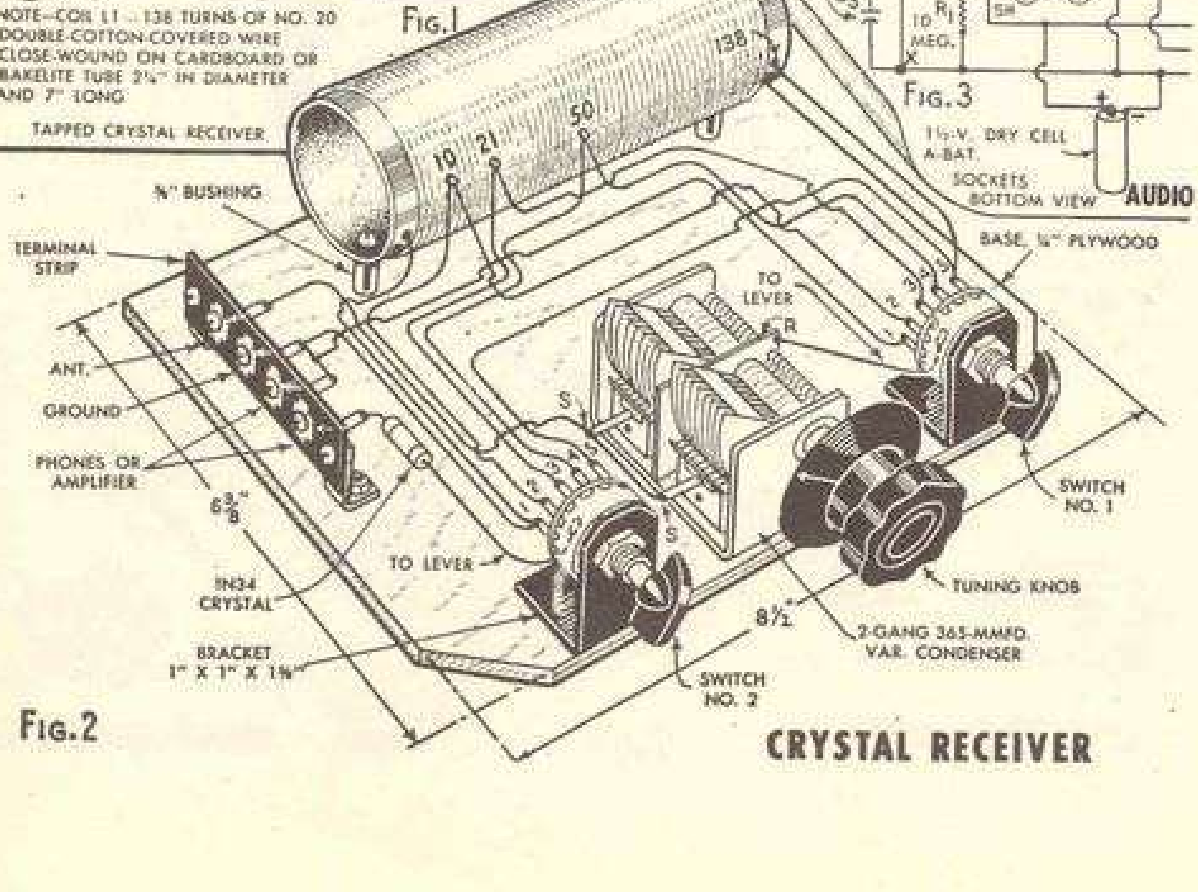
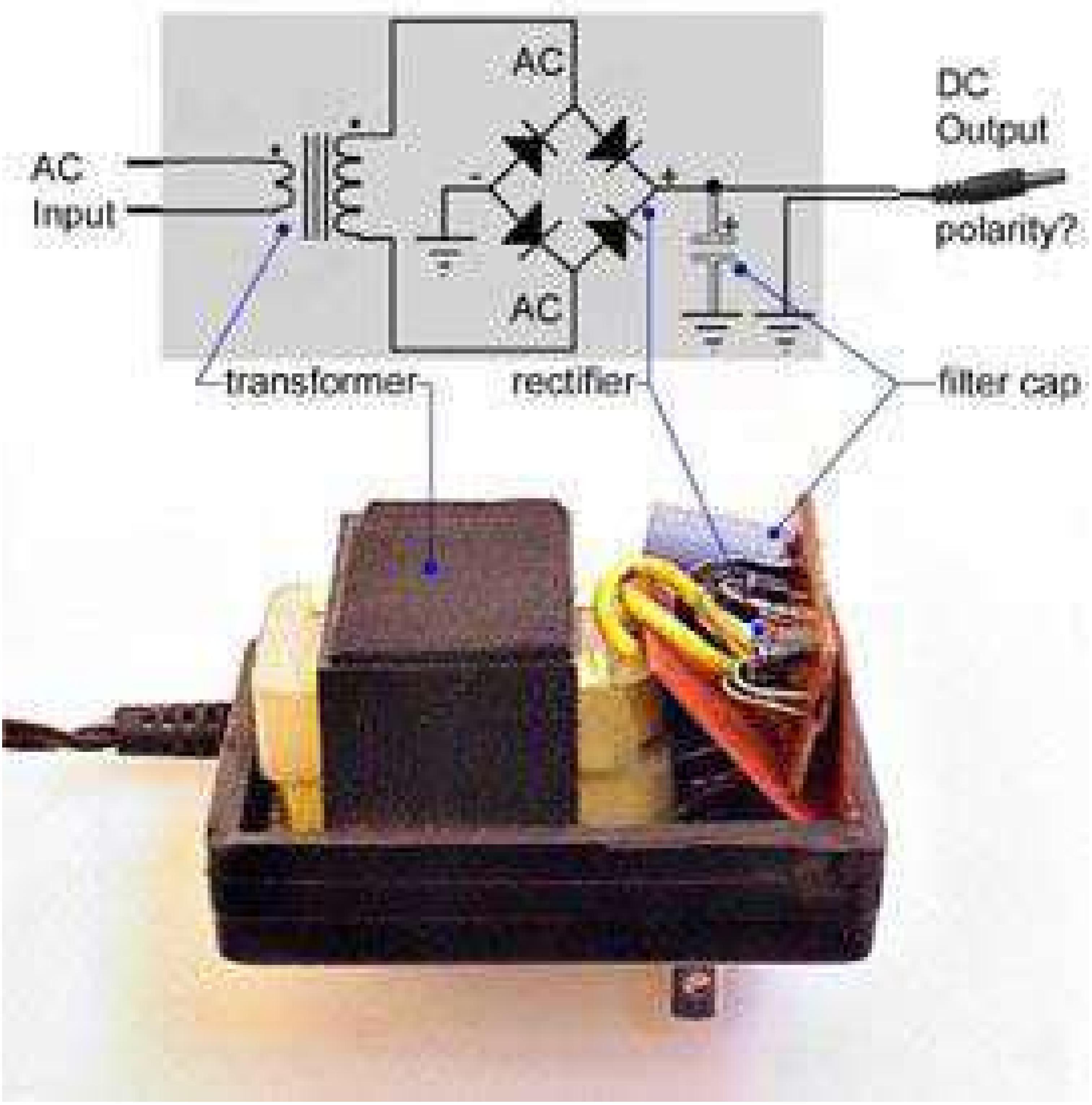


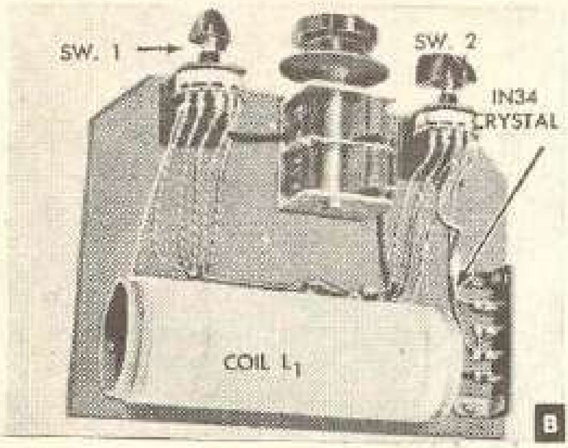
FIG. 2

CRYSTAL RECEIVER

Typical "Wall Wart"



A



B

RADIO RECEIVERS

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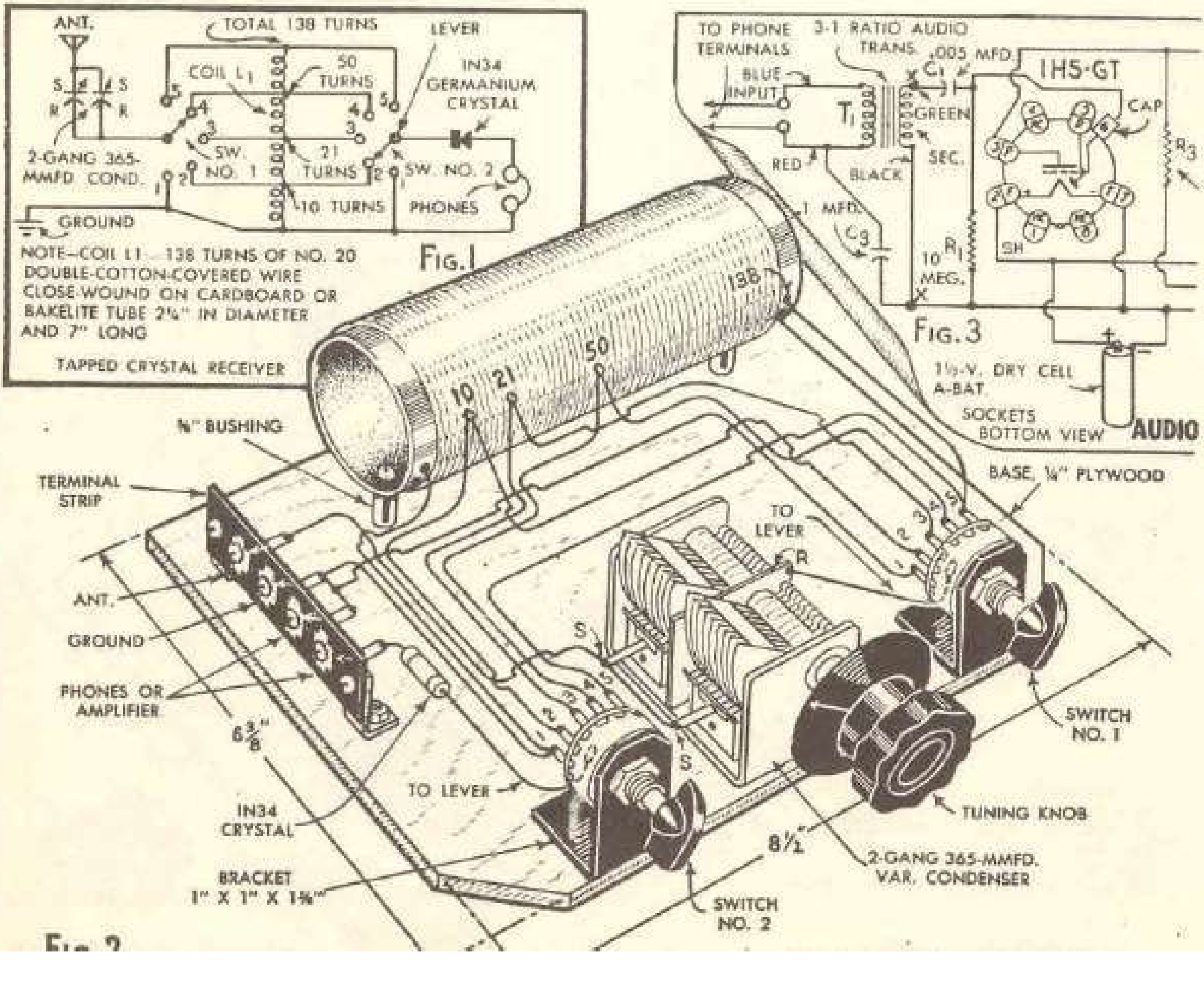
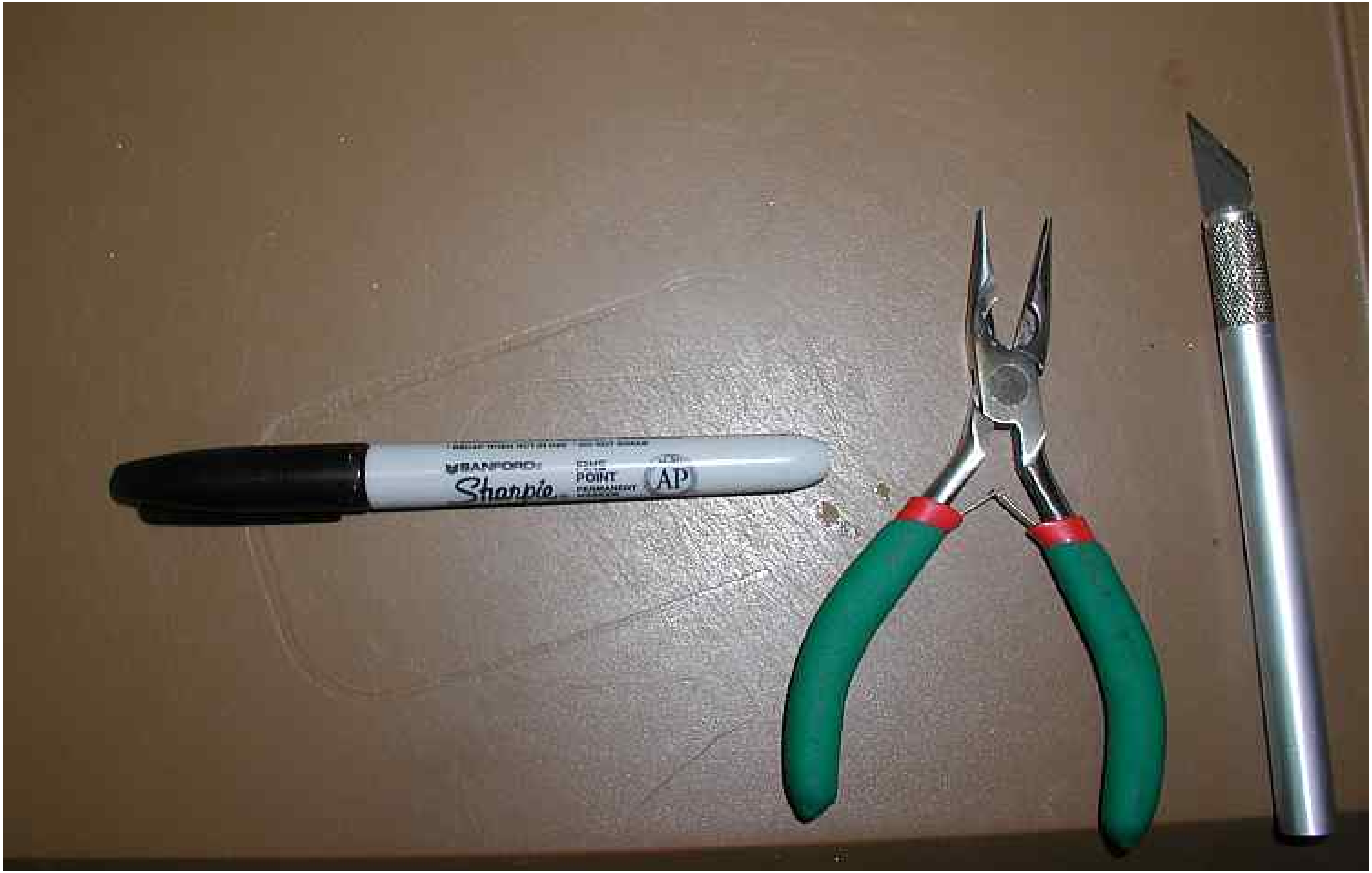
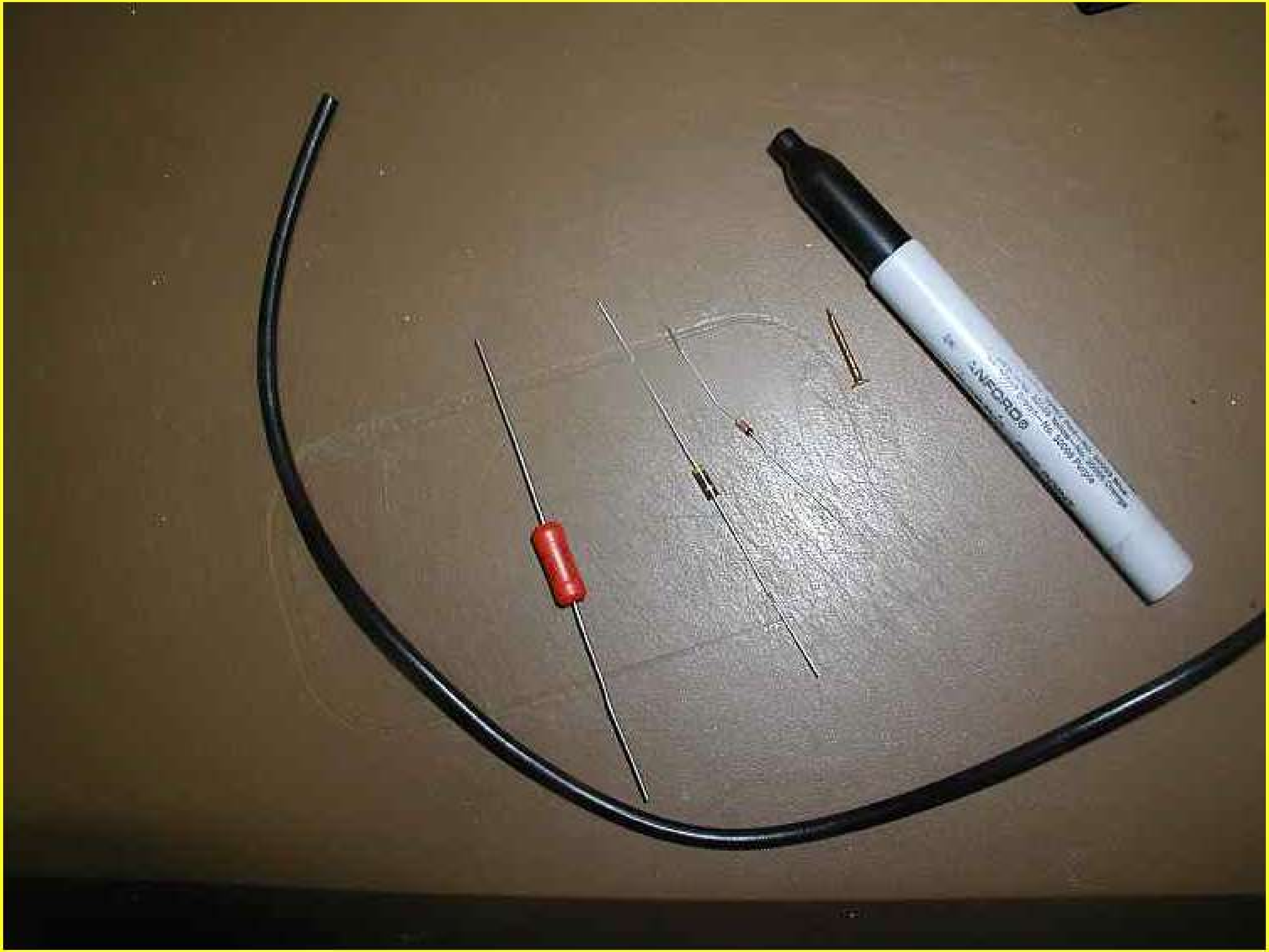


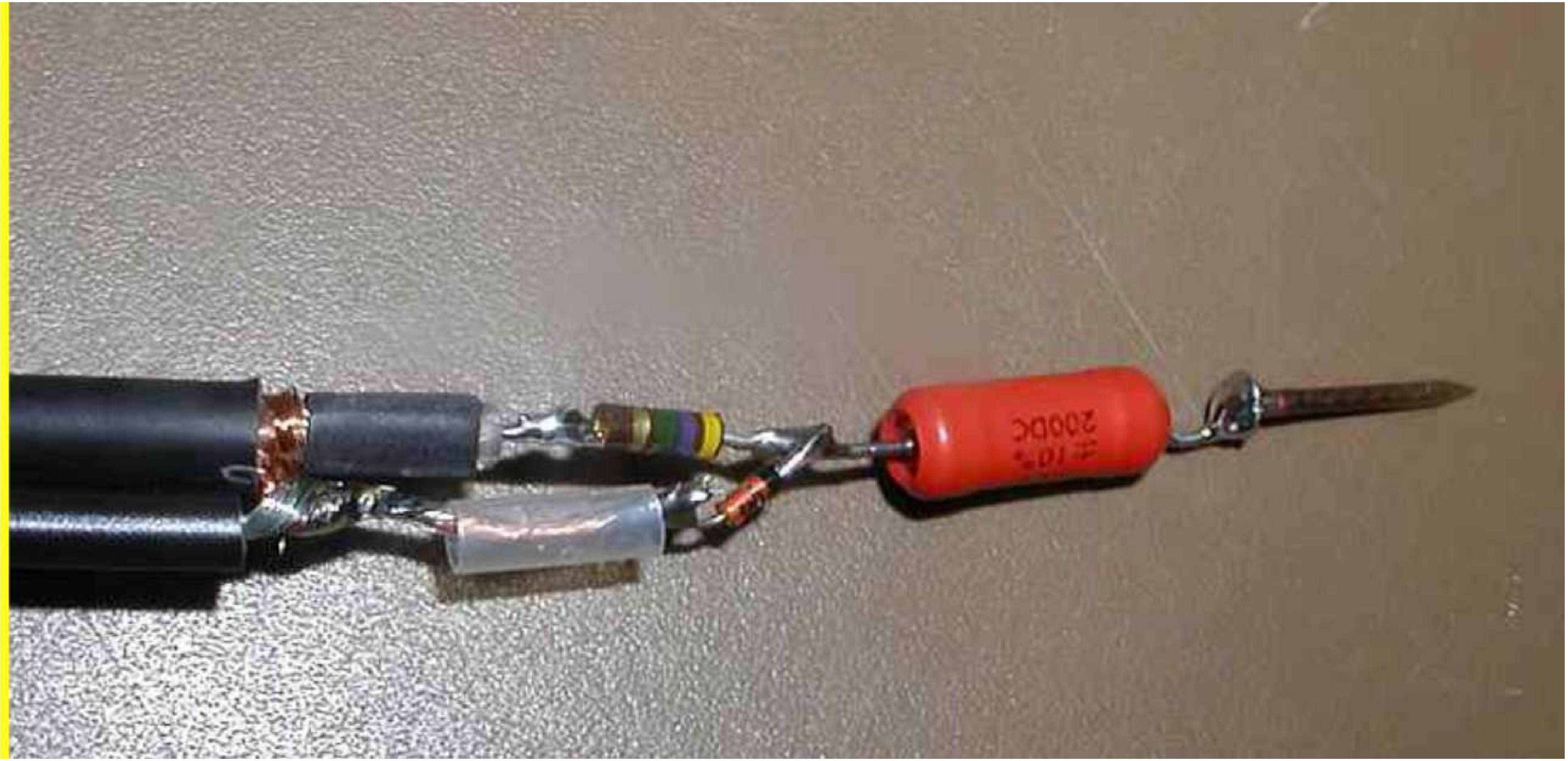
FIG. 2


SANFORD
Sharpie
POINT
AP

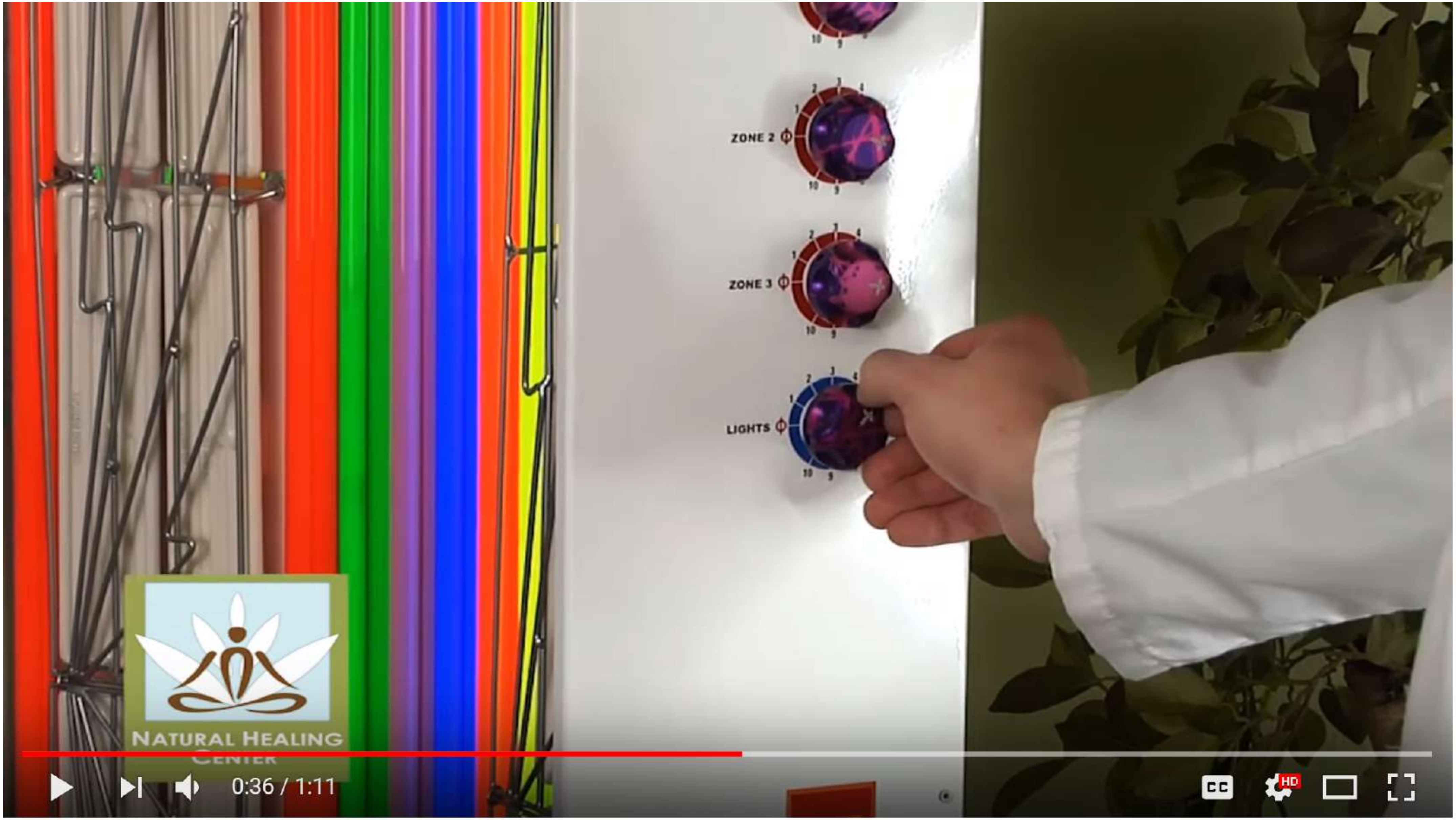

FINE POINT

I used a .02ufd cap because it was the perfect physical size, a 4.7 meg resistor, and a 1N34A diode. I had a nice, flexible, p copper nail that would be easy to solder to for a tip.

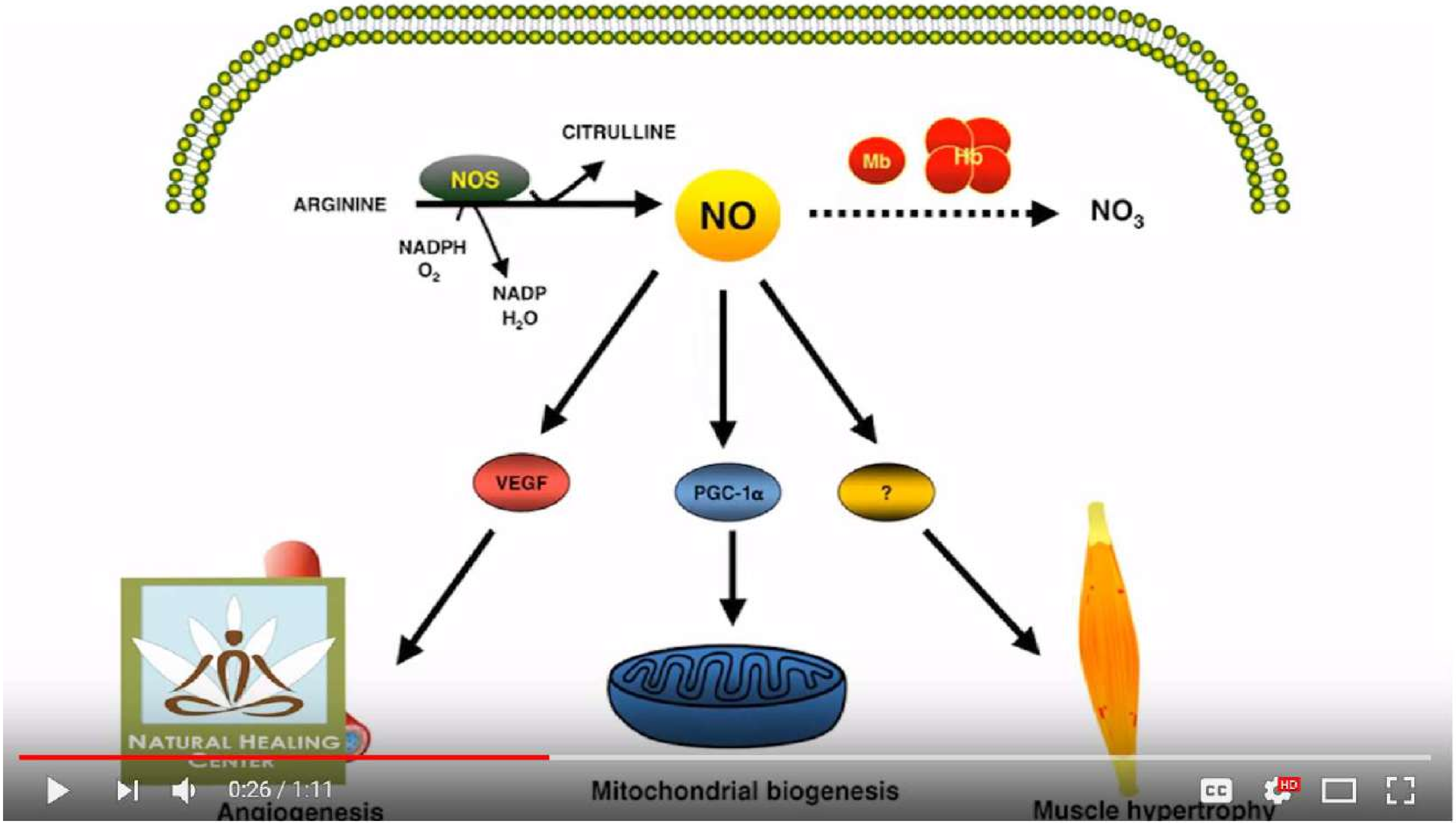


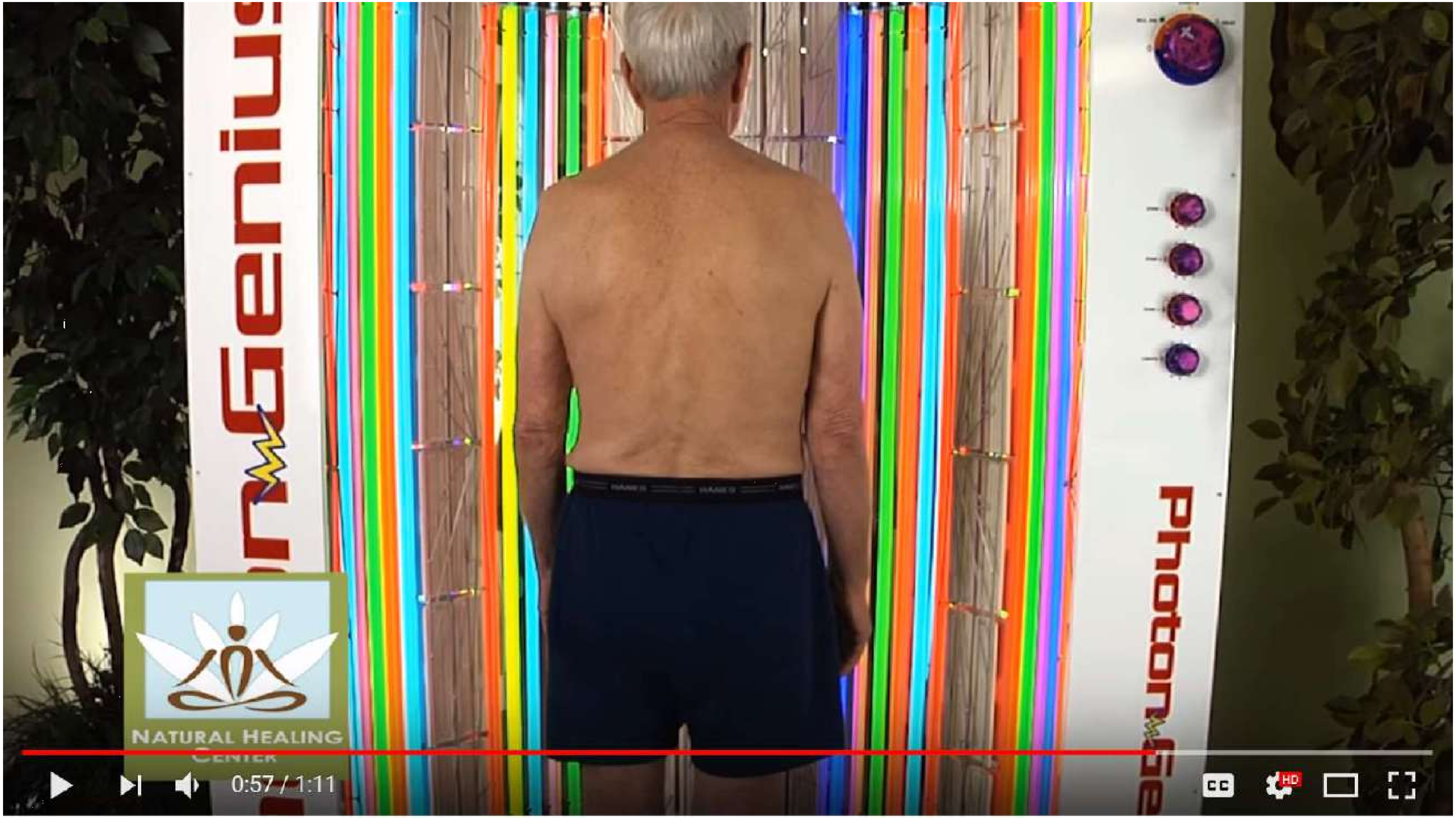

±10%
200DC


BRANE-POWER
brane-power.com



PHOTON GENIUS


CITRULLINE
NOS
ARGININE
NADPH
O_2
NADP
H_2O
NO
Mb
Hb
NO_3
VEGF
PGC-1α
?
NATURAL HEALING
CENTER
0:26 / 1:11
Angiogenesis
Mitochondrial biogenesis
Muscle hypertrophy



Natural Healing Center
Photon Genius
0:57 / 1:11

Highlights

Renaven (formerly Kidney Complex)
Strengthens kidney function; promotes safe kidney detoxification; helps clear putrid odors in the digestive tract; contains Ayurvedic herbs to tonify and nourish the kidneys.
Read more...

Liver ND (formerly Liver Nano-Detox)
Liver ND promotes healthy bile flow, fat digestion, normal range cholesterol levels; helps alleviate pain. Skilling Store
Read more...

Premier Research Labs
Skilling Institute's online store offers results oriented specialty supplements including Premier Research Labs and more . . .
Read more...

Lyme Disease
Lyme Disease mimics other diseases and is now known as the "great imitator." It is often misdiagnosed and mistreated.
Read more...

Contact Info

Skilling Institute
4340 E Indian School, Suite 21
Phoenix, AZ 85018
Email: info(at)edskilling.com

Phone: (877) 777-4788
Fax: (877) 457-5207

- **Detoxify the body**
- **Strengthen cardiovascular system**
- **Devitalize and clear pathogens, fungus, mold, bacteria, germs, etc.**
- **Regenerate tissue & bone**
- **Improve symptoms of most diseases**
- **Reflow nerve pathways**
- **Empower body's immune system**
- **Promote longevity**
- **Promote weight loss (30 minute session burns over 700 calories)**

Noticeable & Comprehensive Health Benefits

Using the Photon-Genius produces potent antioxidants, neurotransmitters and artery wall relaxers. The Photon-Genius helps regulate muscle tone of the arteries and prevents arteriosclerosis and is anti-inflammatory preventing injury to vessel walls and normalizing blood pressure in the process.

Using the Photon-Genius produces powerful brain cell protectors, neurotransmitters, memory and learning enhancers (transmitting harmonic, balanced chemical messages in the brain).

The Photon-Genius transmits, imprints, and reminds the human body at the cellular level of the essential creative process of perpetual enlivening energy that results in more natural and empowered regenerative processes throughout the body.

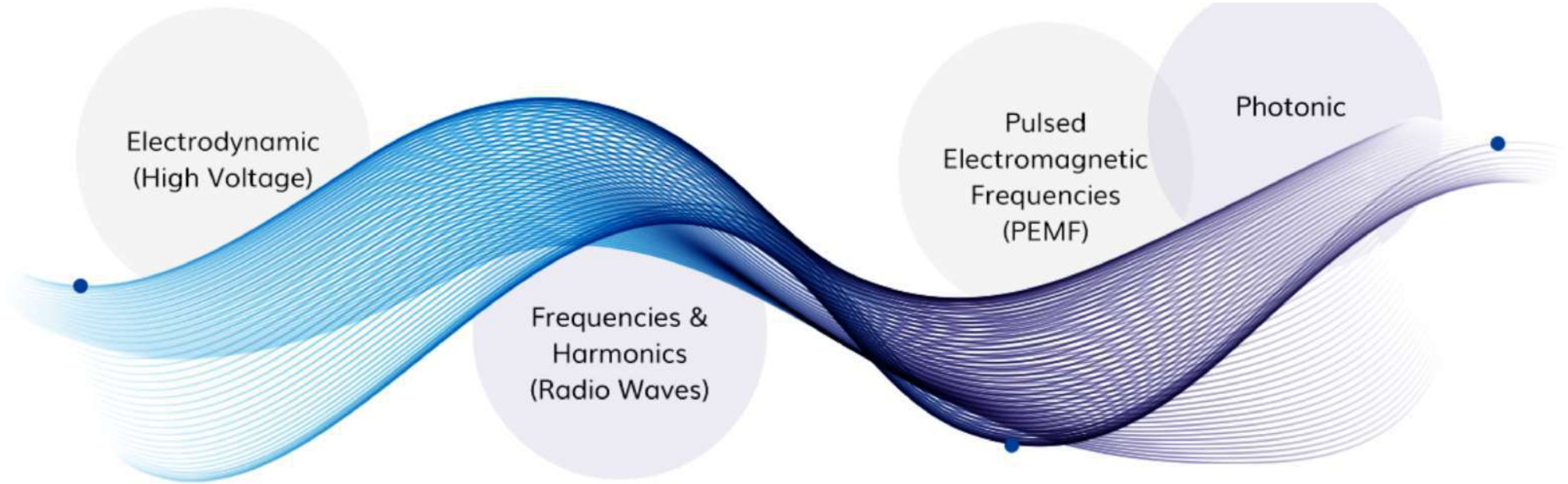
The Photon-Genius is a wonderfully safe and easy-to-use dynamic means of achieving ever-accelerating levels of health, wellness and more efficient, natural regeneration and rejuvenation. The Photon-Genius technologies provide "noticeable" and "comprehensive" health benefits to make your body the best it can be. (Photon-Genius Health Benefits)

Compare the BioCharger™ NG versus Photon Genius/Super Sauna

VS

Devices are not to scale

Click here to edit the announcement-bar module. This text is only for editing and will disappear after you publish the changes. Are you considering buying a Super Sauna, Photon Genius, or some other multiwave oscillator device? Check out our free MWO Reference Guide to help you! Download Free Reference Guide Types of Energies Produced and Controlled **The BioCharger™ NG produces 4 types of subtle energies:** *Photonic, Pulsed Electromagnetic Frequencies (PEMF), Electrodynamic (High Voltage), and Frequencies & Harmonics (Radio Waves).* **The Photon Genius produces ONLY 2 of the 4 types:** *Photonic and Frequencies-Harmonics.* Both PEMF and electrodynamic energies, which the Photon Genius lacks, are important for delivering voltage, improving uptake of nutrients, and detoxifying the nucleus of the cell. Although both systems produce frequencies-harmonics, only the BioCharger™ NG provides unlimited combinations of frequencies (fixed or sweeps), voltage, duration and duty cycle through software based outcome focused "Recipes". Currently more than 350 recipes have been created through the input of our worldwide customer network, including practitioners and researchers, and are accessible to all customers via myCloud. The Photon Genius is hardwired and not software based, and is only capable of providing fixed predefined sets of frequencies-harmonics. Far Infrared Sauna The Photon Genius incorporates infrared sauna as a standard offering. The BioCharger™ NG does not. Although Far Infrared is proven to be an effective therapy, especially for detoxification, **there are far more advanced standalone Far Infrared Saunas available for less than $5000.** Therefore if you bought a combination of the top quality infrared sauna and the more technologically advanced BioCharger™ NG, you would still **save about $10,000 over the purchase price of the Photon Genius**



Click here to edit the announcement-bar module. This text is only for editing and will disappear after you publish the changes.

Compare Subtle Energies

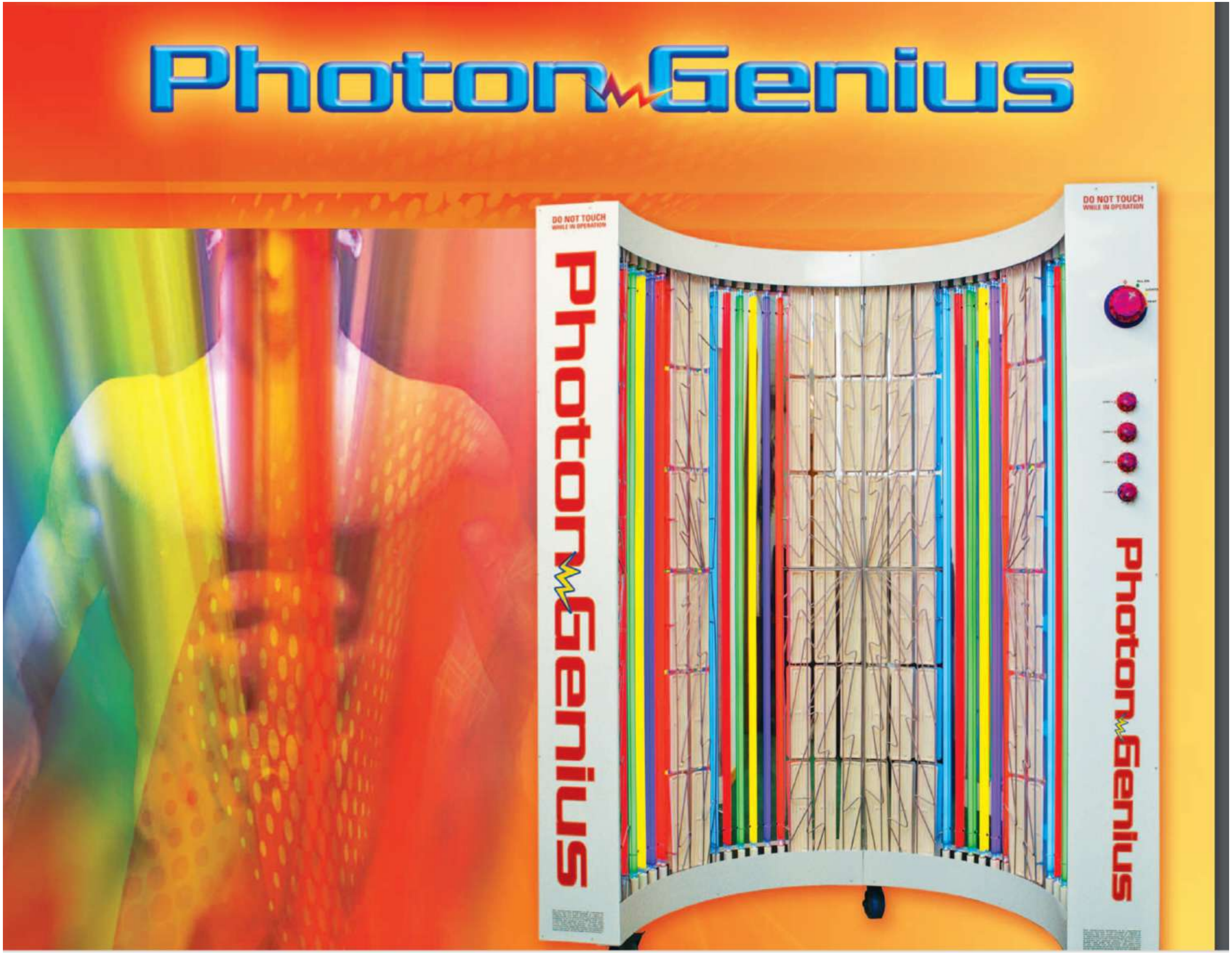
Subtle Energies	BioCharger™ NG	Photon Genius (Super Sauna)
Photonic	**Yes**	Yes
Frequencies & Harmonics (Radio Waves)	**Yes**	Yes
Pulsed Electromagnetic Frequencies (PEMF)	**Yes**	No
Electrodynamic (High Voltage)	**Yes**	No

ALL PHOTONIC ENERGIES ARE NOT CREATED EQUAL

Gases Photon Genius's photonic energy is produced by a fixed array of color coated "fluorescent light" tubes containing 5 distinct Noble gases. **The BioCharger™ NG can use up to 12 unique gases simultaneously including the 5 used in the Photon Genius.** The additional gases available for the BioCharger™ NG represent a broader range of the visible light spectrum. Power Source Gas tubes are energized in very different ways. The Photon Genius relies on individual power supplies to energize the plasma tubes (much like fluorescent lights). **The BioCharger™ NG plasma tubes are ignited purely by the PEMF component – without wiring or an external power source.** This illustrates the PEMF strength and provides the most biocompatible form of light energy. Color Aspects Another important difference is related to color. The Photon Genius uses colored coatings which are similar to that used by neon sign companies. **The BioCharger™ NG plasma tubes are unfiltered and crystal clear until energized**, at which time they produce a range of pure colors based on gas combinations.

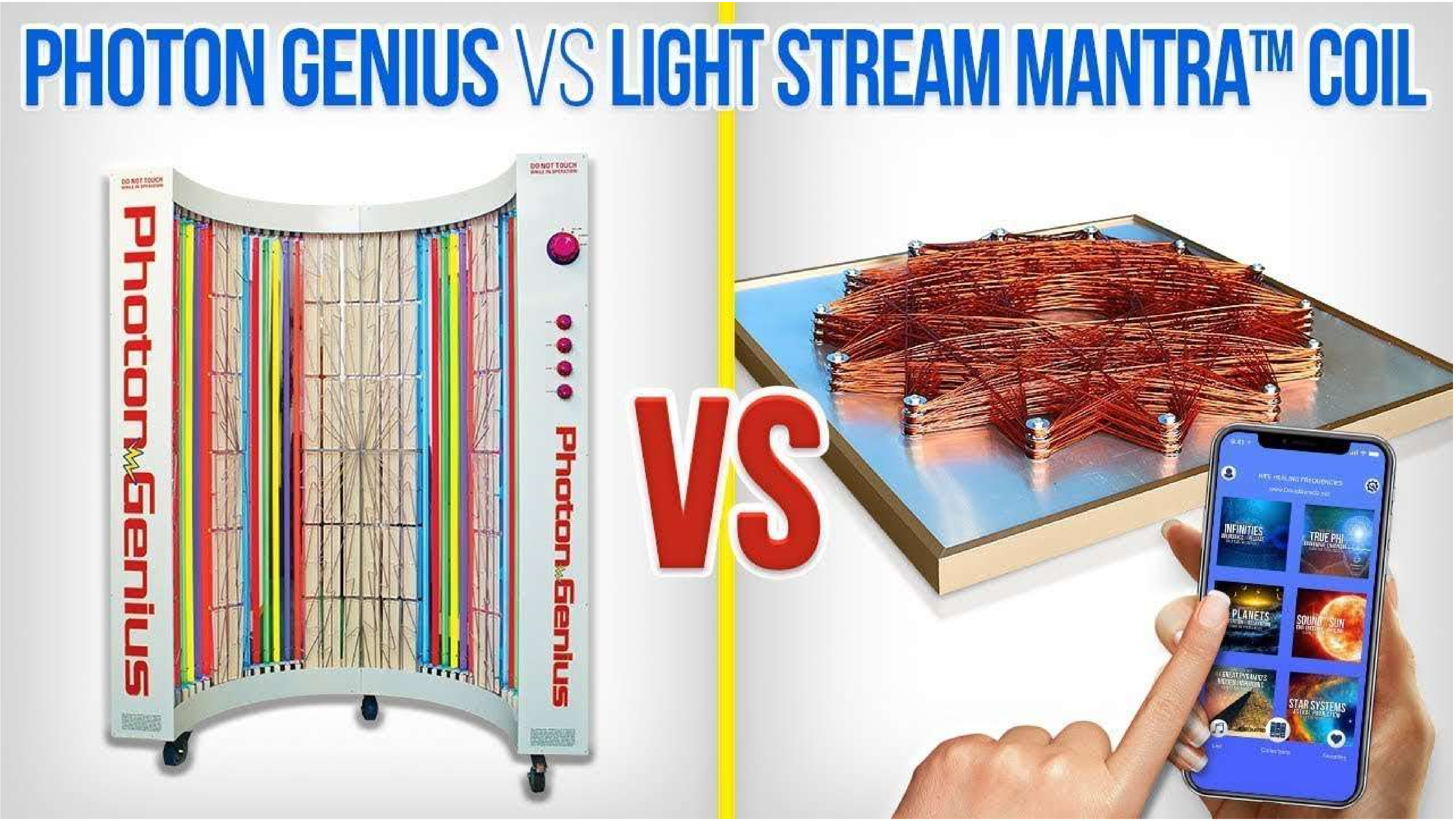
Compare Features *

Features	BioCharger™ NG	Photon Genius (Super Sauna)
Subtle Energies Produced	Photonc (light), PEMF*, Electrodynamic (high voltage), Frequencies & Harmonics (radio waves)	Photonic Frequencies-Harmonics
Far Infrared Sauna	Not offered**	Yes combined
Power Requirements	Standard 110v 15 Amp	220/240V 50 Amp
Programmable Voltage via Arc and/or Toroid	0 -750,000V	No. Estimated 15,000V max output
Programmable Frequencies & Sweeps Presets	(5Hz-50,000 kHz)	No. Hardwired presets with multi position dials.
Programmable and wireless PEMF* fields	Yes	N/A
Programmable Pulsed Modulation	Yes	No
Internet & Cloud Enabled	Yes	N/A
Individual Noble/Inert Gases Available	up to 12 Unique Gases	5 standard no substitutions
Software Upgradeable	Yes (Updates included)	No (hardwired, analog)
Meets ISO 9001 Mfg Quality Standards	Yes (certified facility)	No
Easy to Use Touch Screen	Yes	No. (hardwired knobs and switch)
Warranty	2 year parts & labor / 1-way shipping included.	1 year from purchase date- Depot service shipping at


Photon Genius
DO NOT TOUCH
WHILE IN OPERATION
Photon Genius
DO NOT TOUCH
WHILE IN OPERATION
Photon Genius

Advanced Electromedicine - The Photon Genie

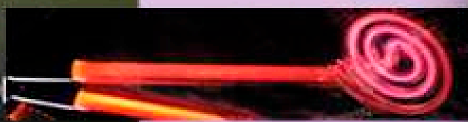
40 Minutes Of ASMR Plasma Therapy

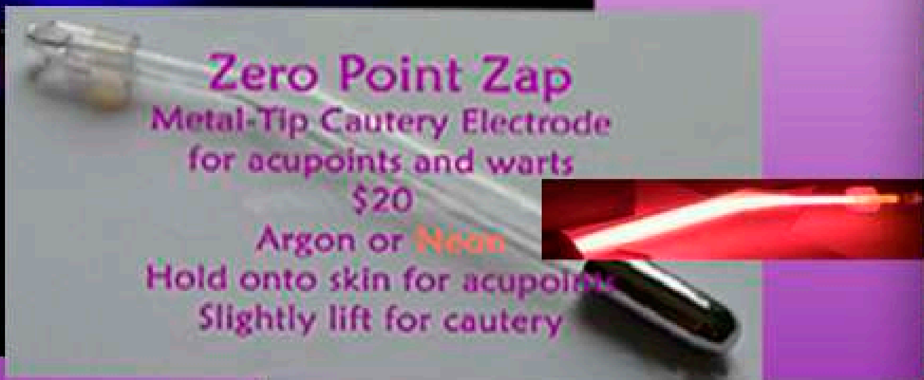

PHOTON GENIUS VS LIGHT STREAM MANTRA™ COIL
DO NOT TOUCH
Photon Genius
Photon Genius
VS
INFINITIES
TRUE PHI
PLANETS
SOUND SUN
STAR SYSTEMS


1:22 / 1:43

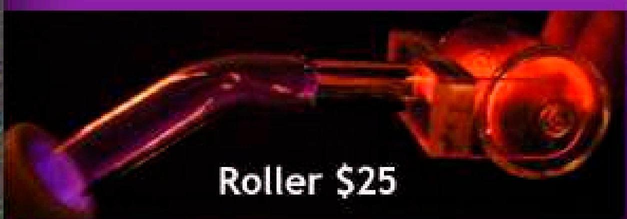
Zero Point Zap

Optional Electrodes





No Additional Shipping Cost
When Ordered With A Wand



ZeroPointZap@gmail.com

The Violet Ray Wand

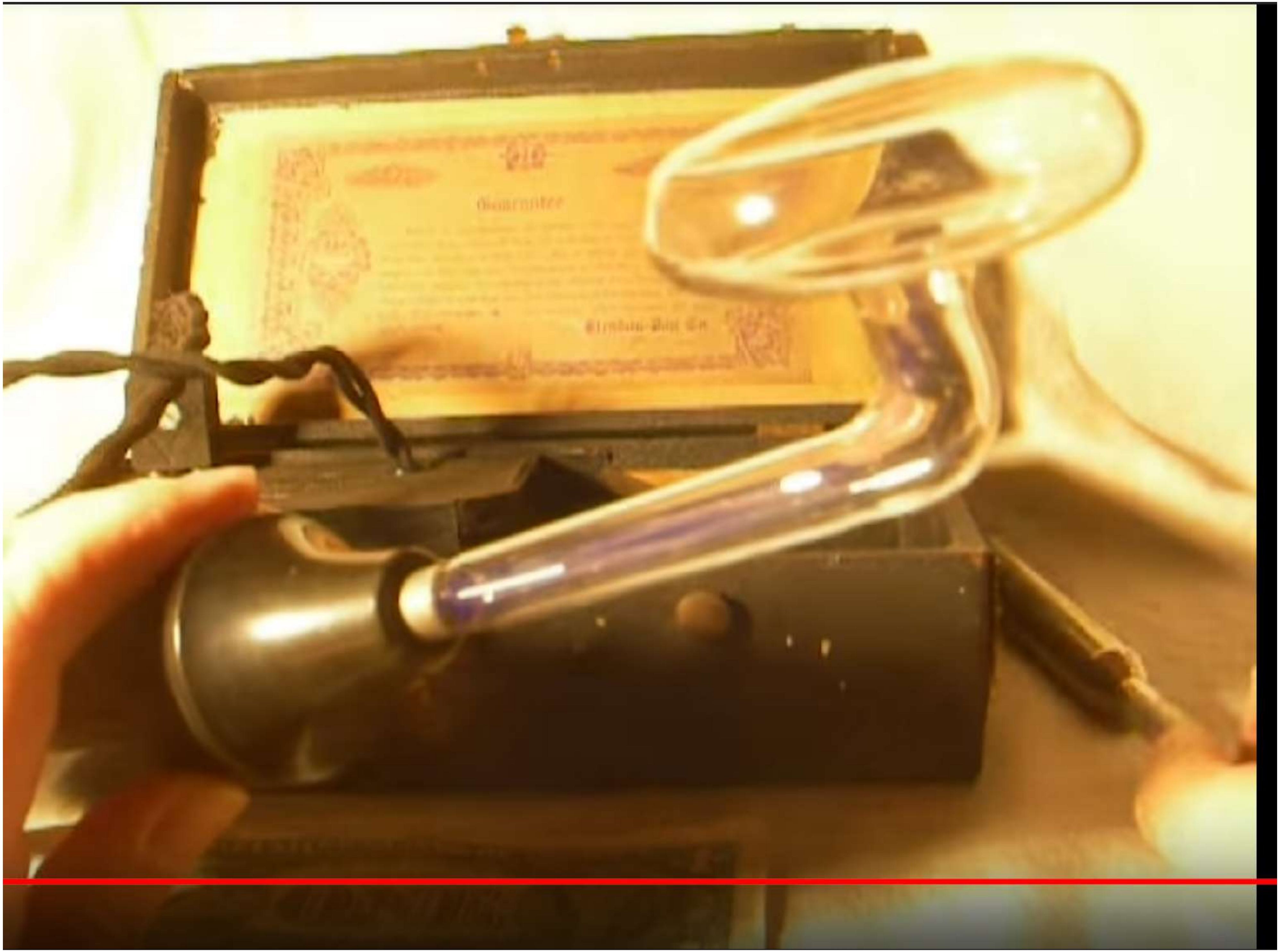
Tesla's Lost Electrotherapy Technology from Zero Point Zap

WWW.ZPZAP.NET

Solid State Violet Ray Wand from Zero Point Zap
$170 with 7 Violet Argon Gas Electrodes

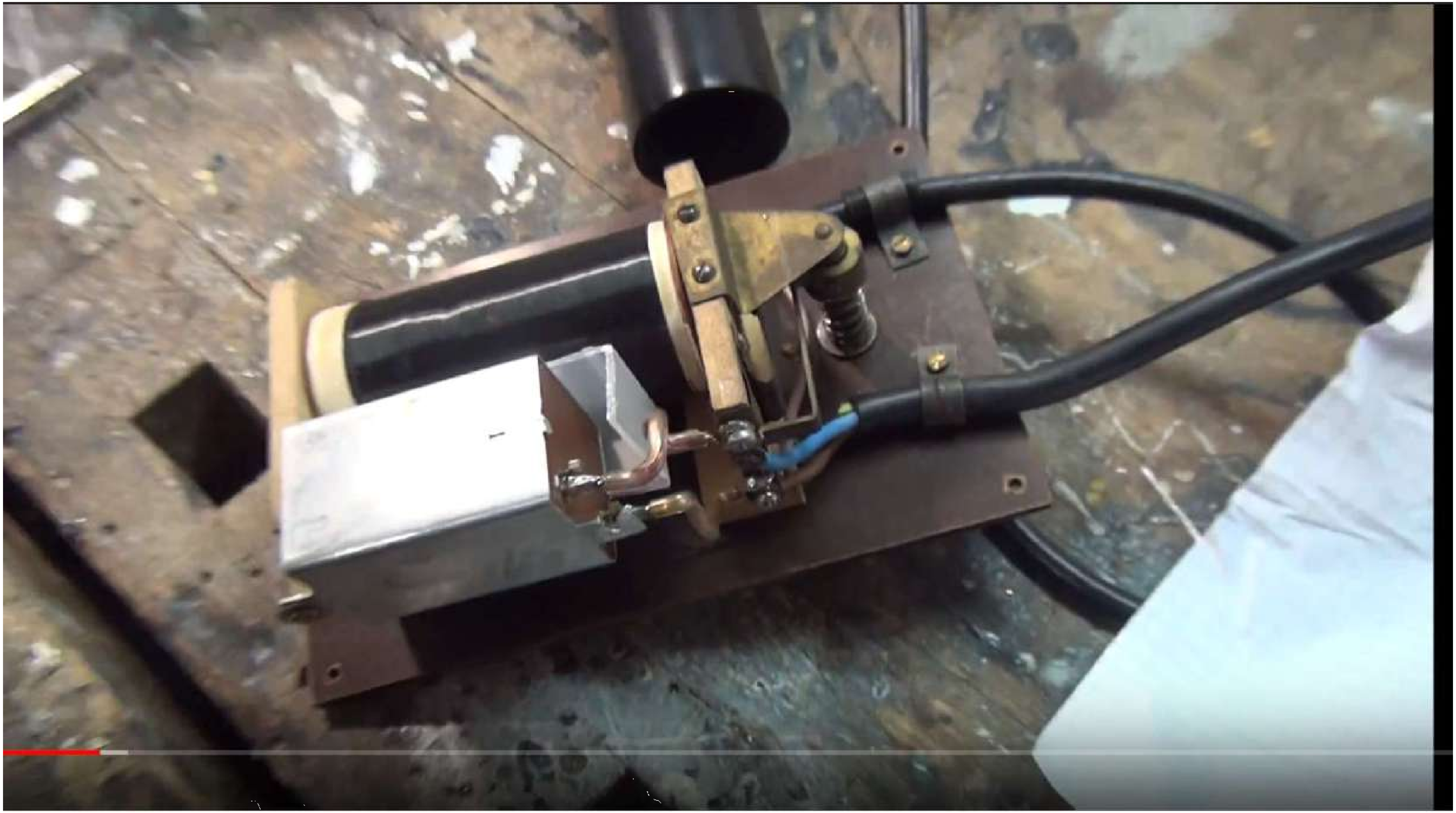
Roller with Argon and Neon Gas
Comb for Hair or Holding in Hand
Light Saber for Internal & External Applications
Ball-Point Sparker for Sparking & Trigger Points
Spoon with Flat Area & Point
Mushroom for Gentle Treatments
Y-Shaped for Neck/Throat/Curved Areas
*Optional Electrodes: Spiral $25, Sinus,Cautery & More $20

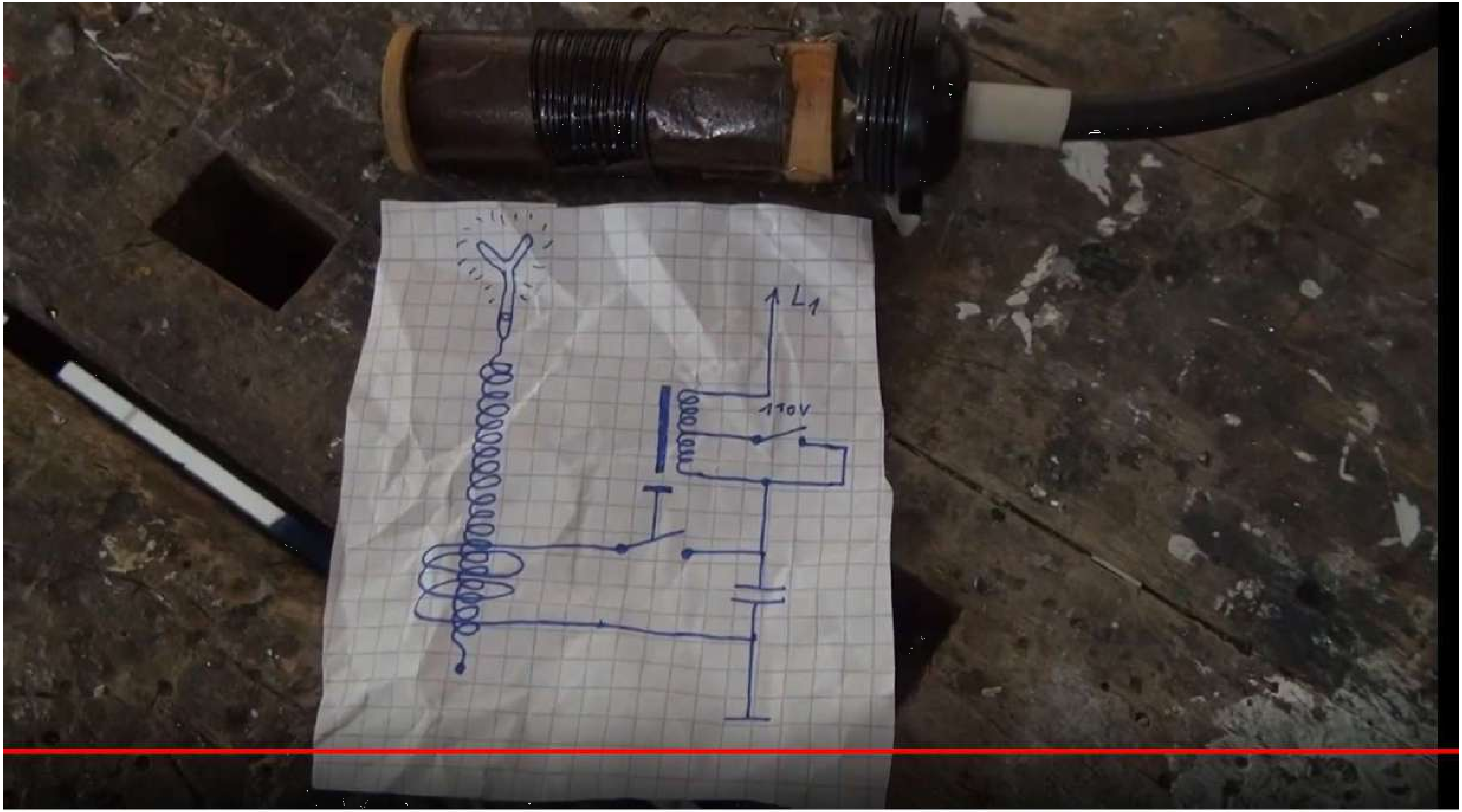
ZeroPointZap@gmail.com

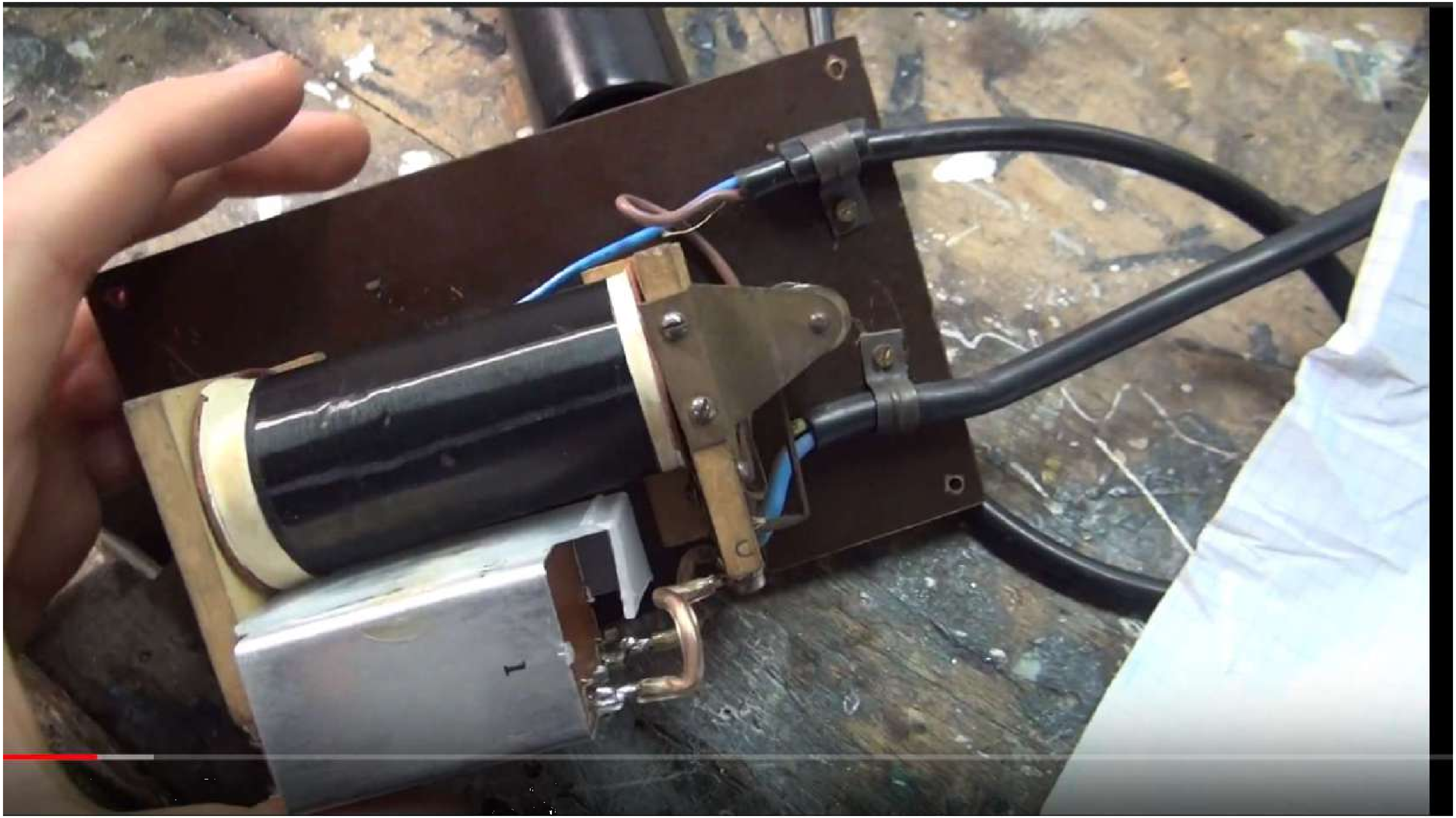


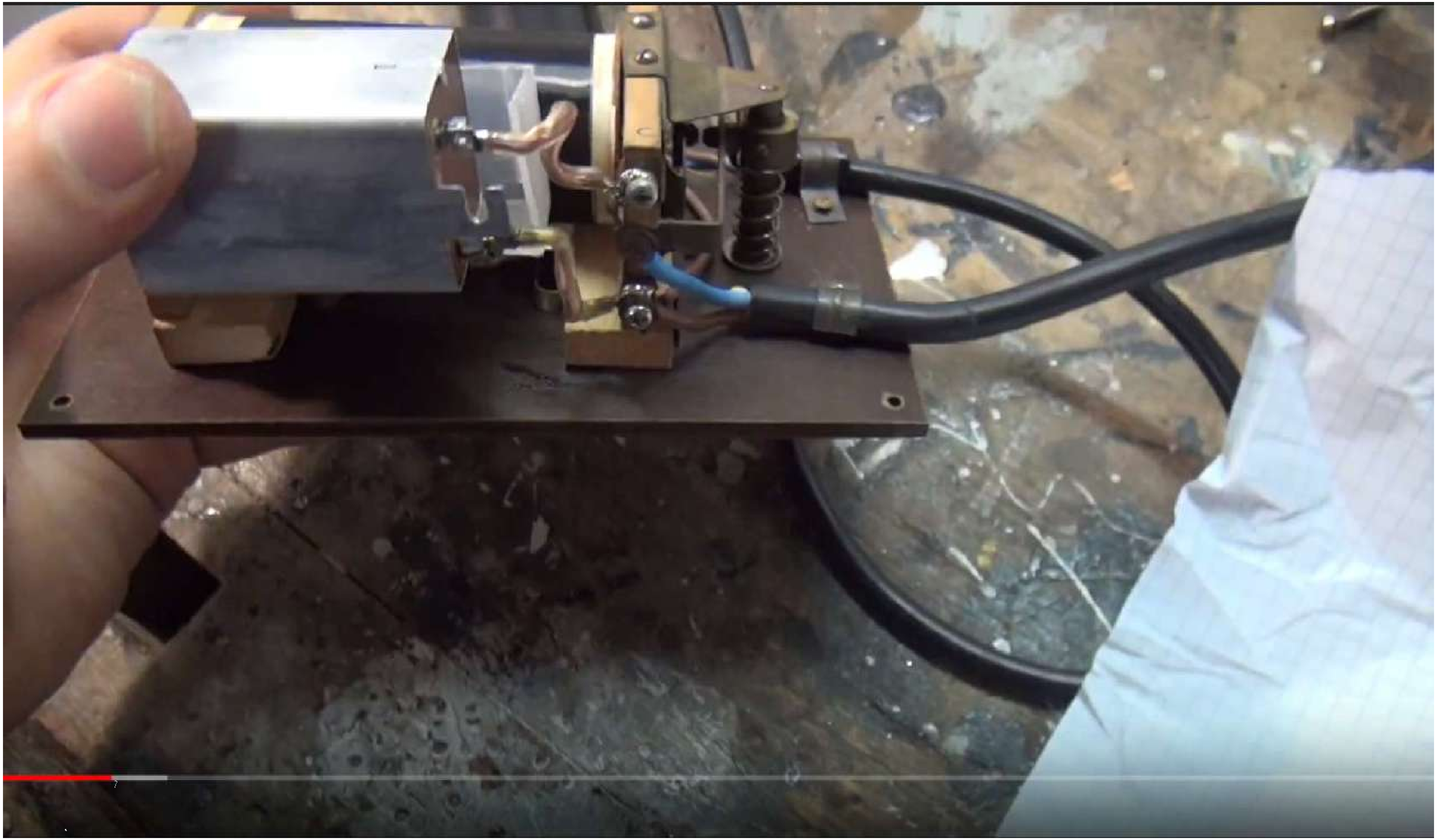

Renulife
Violet Ray

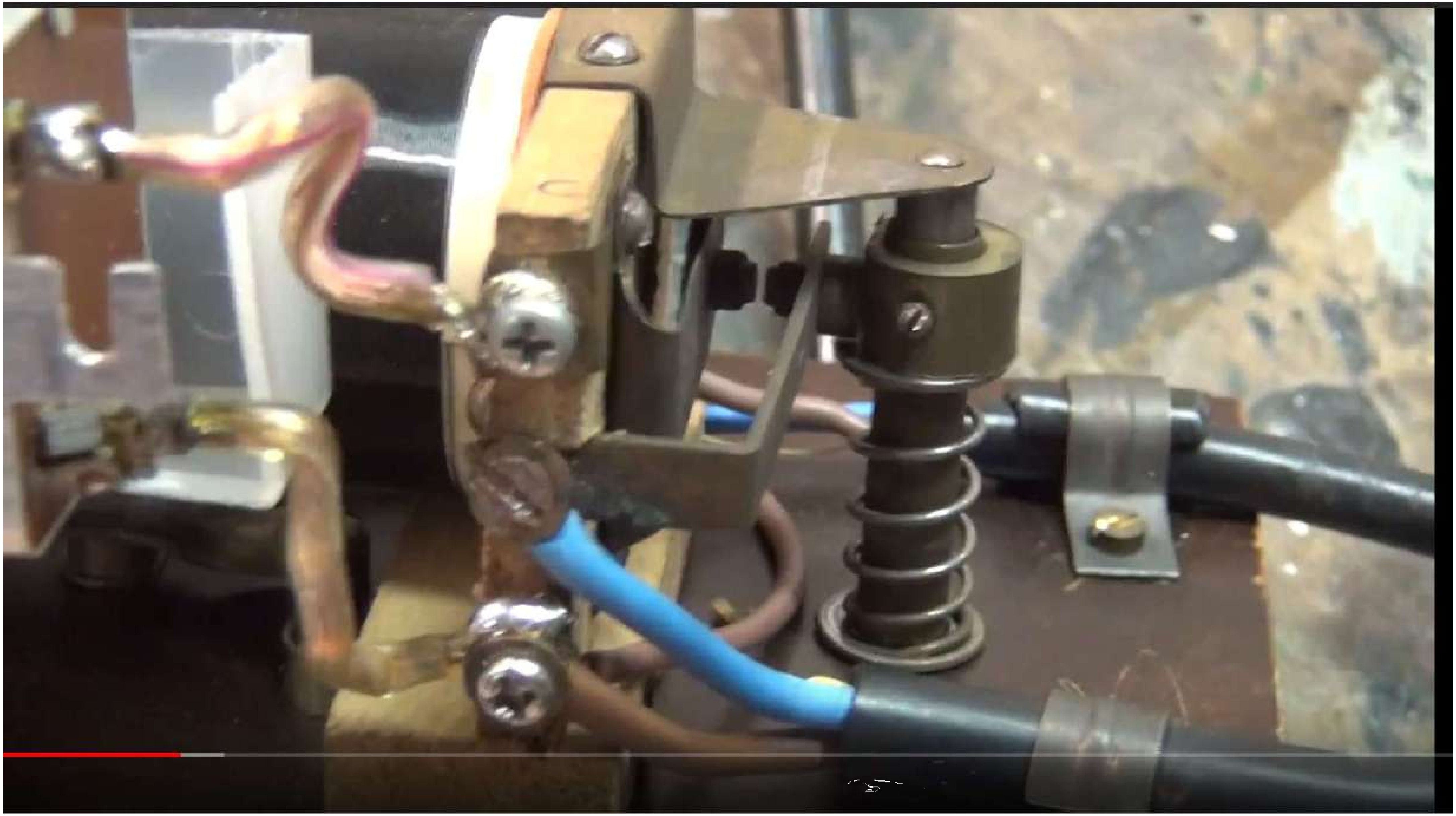

HELIO-LUX
220V
VORSICHT




L1
110V





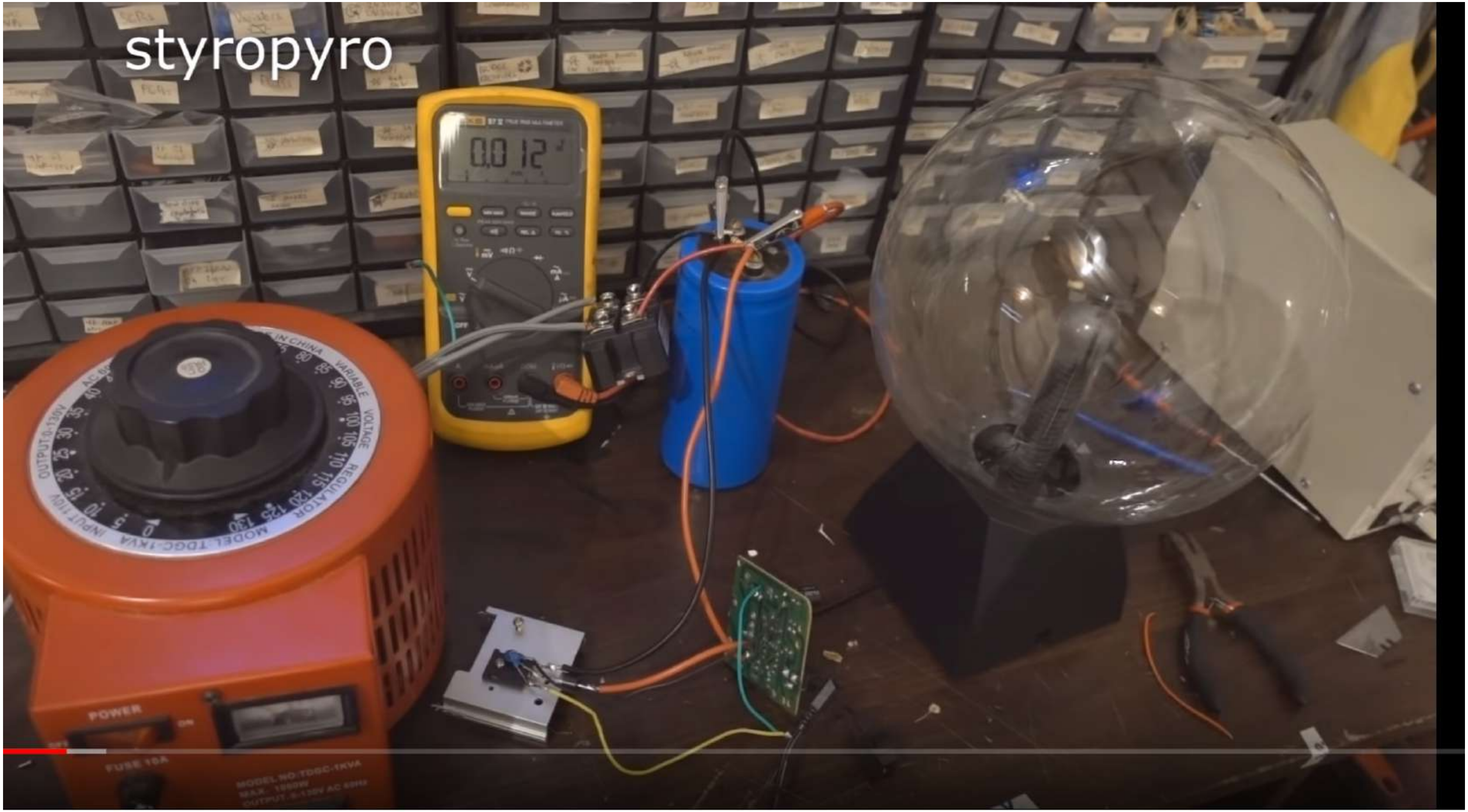


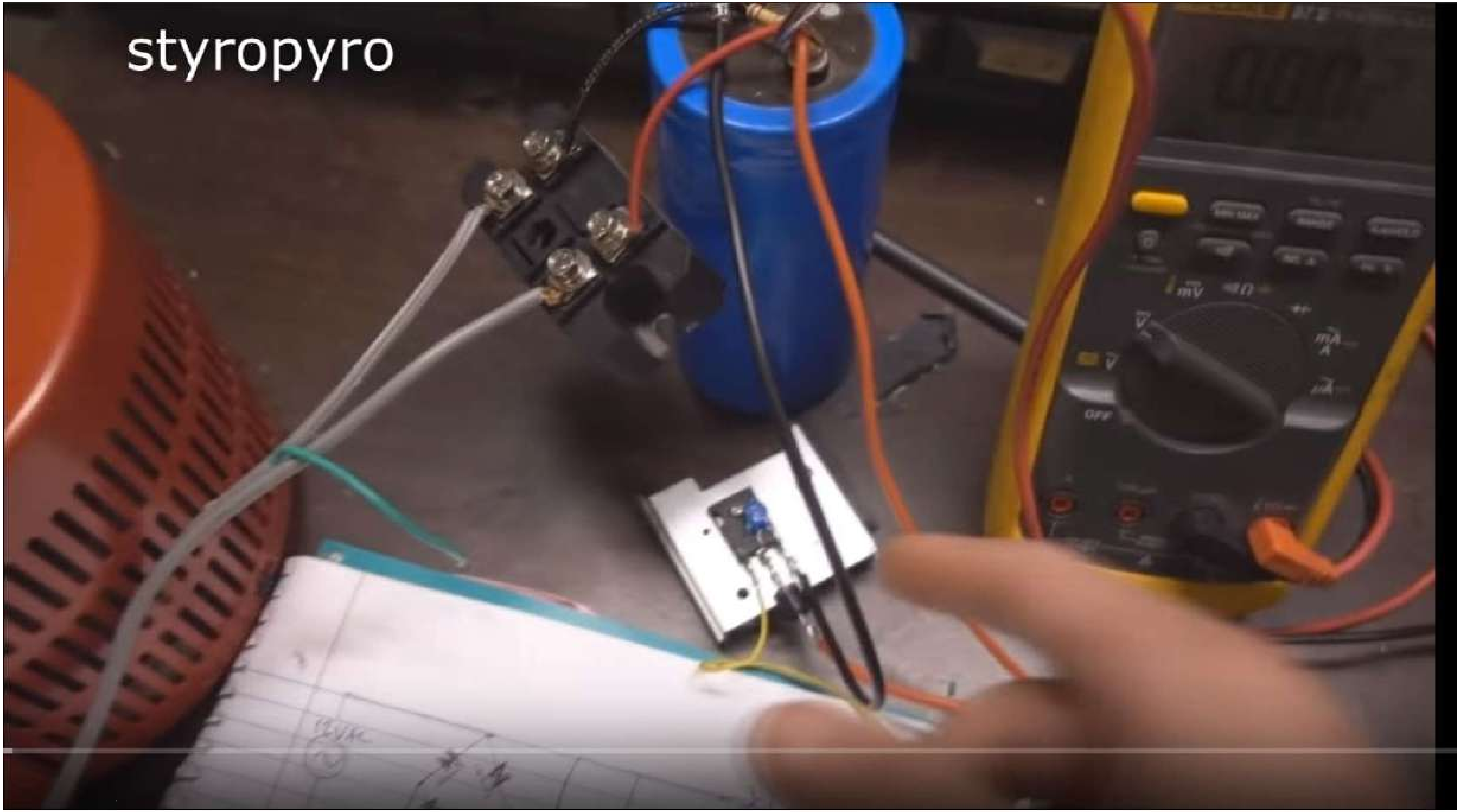

1:39
1:20 / 2:12


7:50 / 19:17


11:39 / 19:17
bigclived
wolfcraft

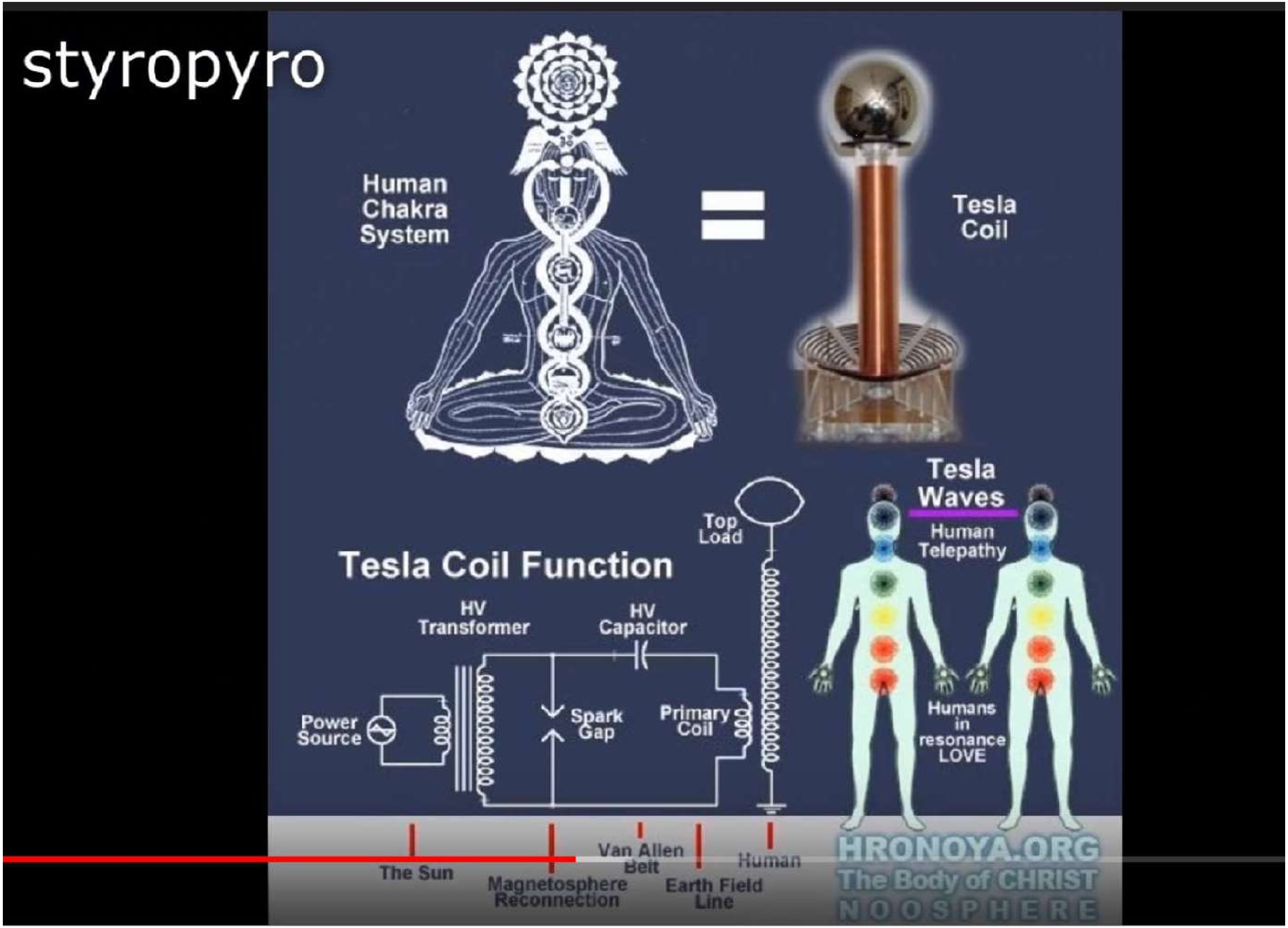

styropyro


styropyro
0.012
POWER
FUSE 10A

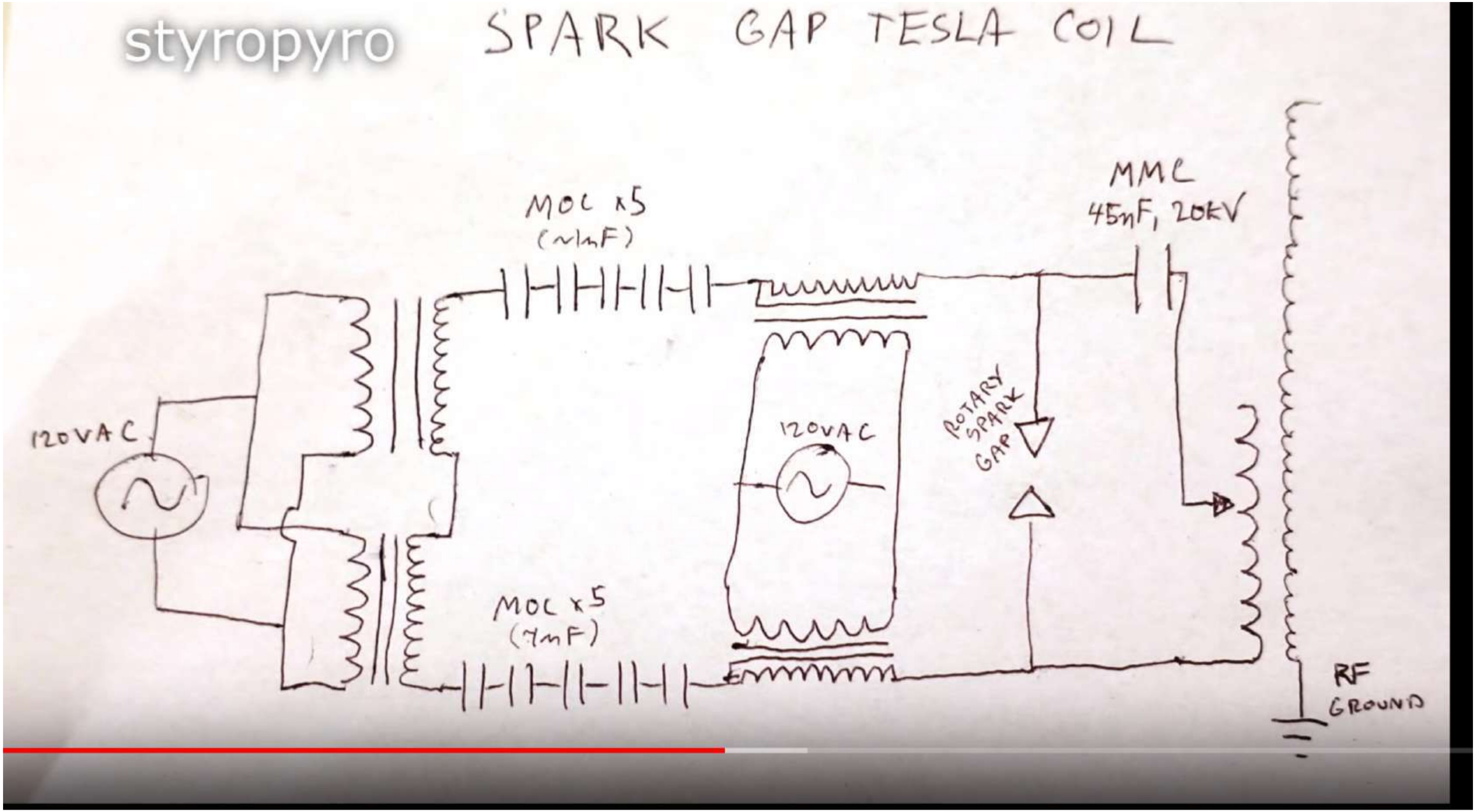

styropyro


styropyro
HL-66
2011. 12


styropyro



styropyro
Human
Chakra
System
Tesla
Coil
Tesla
Waves
Human
Telepathy
Top
Load
Tesla Coil Function
HV
Transformer
HV
Capacitor
Power
Source
Spark
Gap
Primary
Coil
Humans
in
resonance
LOVE
The Sun
Magnetosphere
Reconnection
Van Allen
Belt
Earth Field
Line
Human
HRONOYA.ORG
The Body of CHRIST
NOOSPHERE

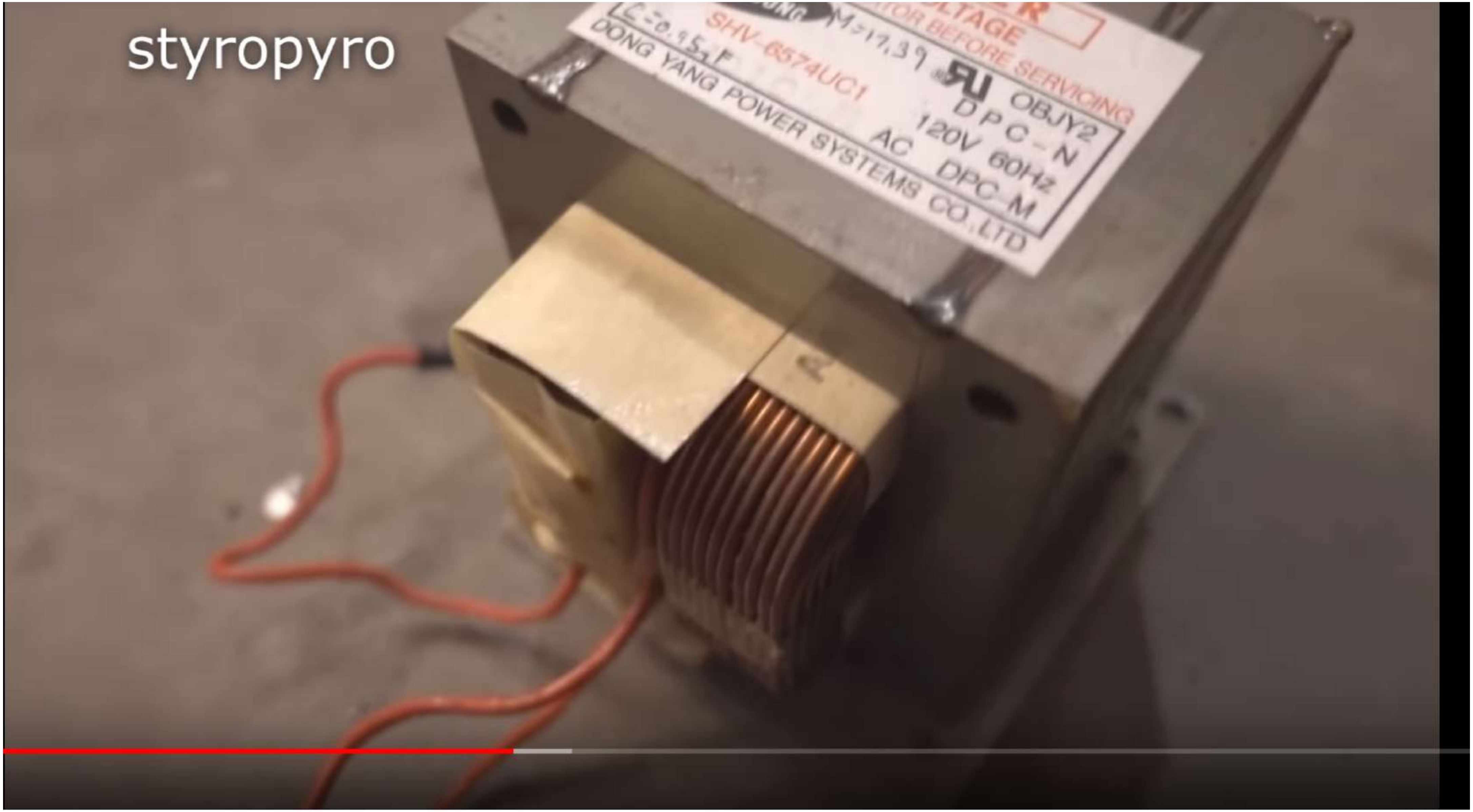

styropyro
SPARK GAP TESLA COIL
MOC x5
(~1nF)
MMC
45nF, 20kV
120VAC
120VAC
ROTARY SPARK GAP
MOC x5
(1nF)
RF GROUND

DIY Overclocked Plasma Globe. 2500V to a MILLION volts

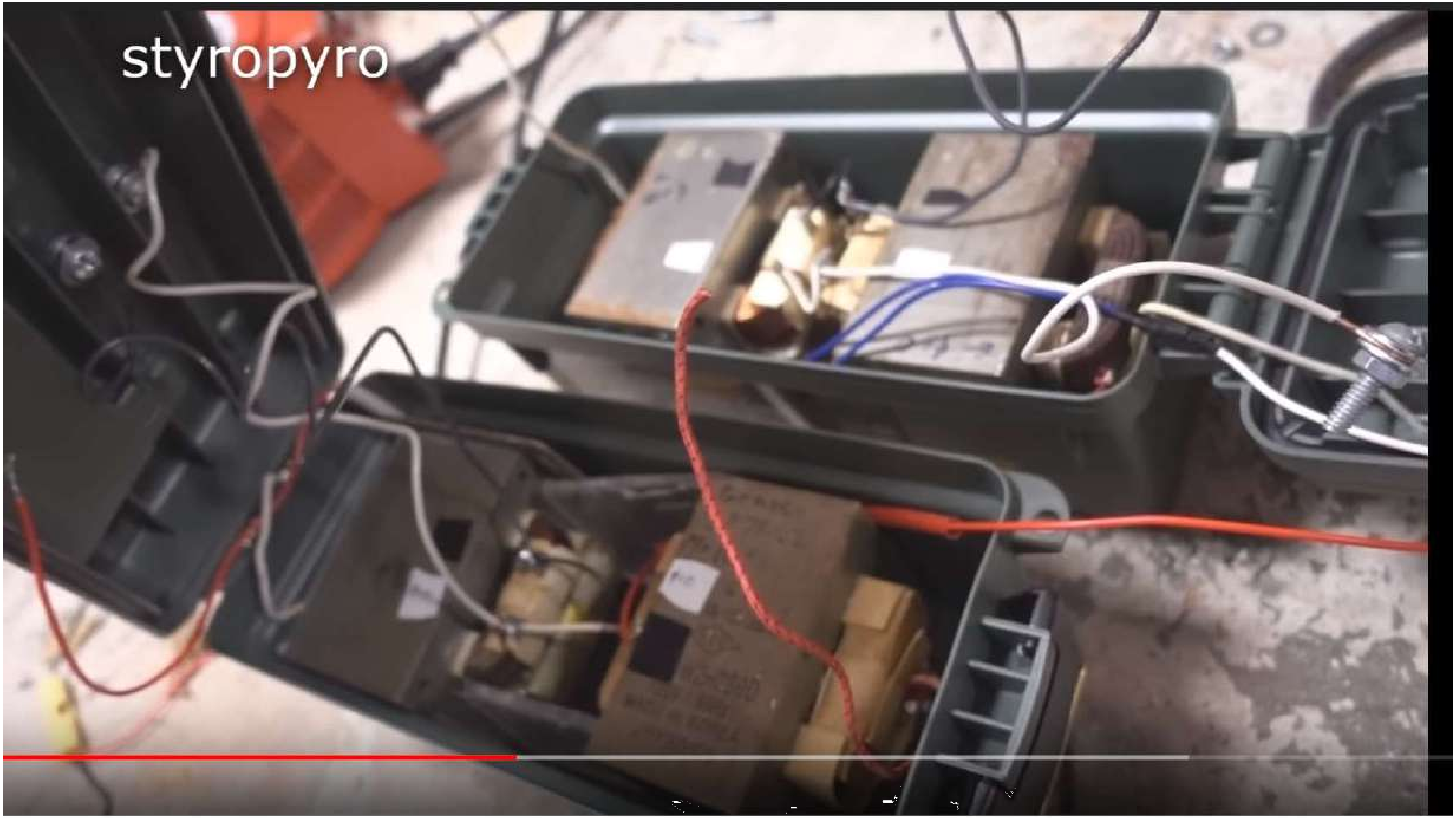
Up next


styropyro


styropyro
DANGER
DO NOT TOUCH
HIGH VOLTAGE

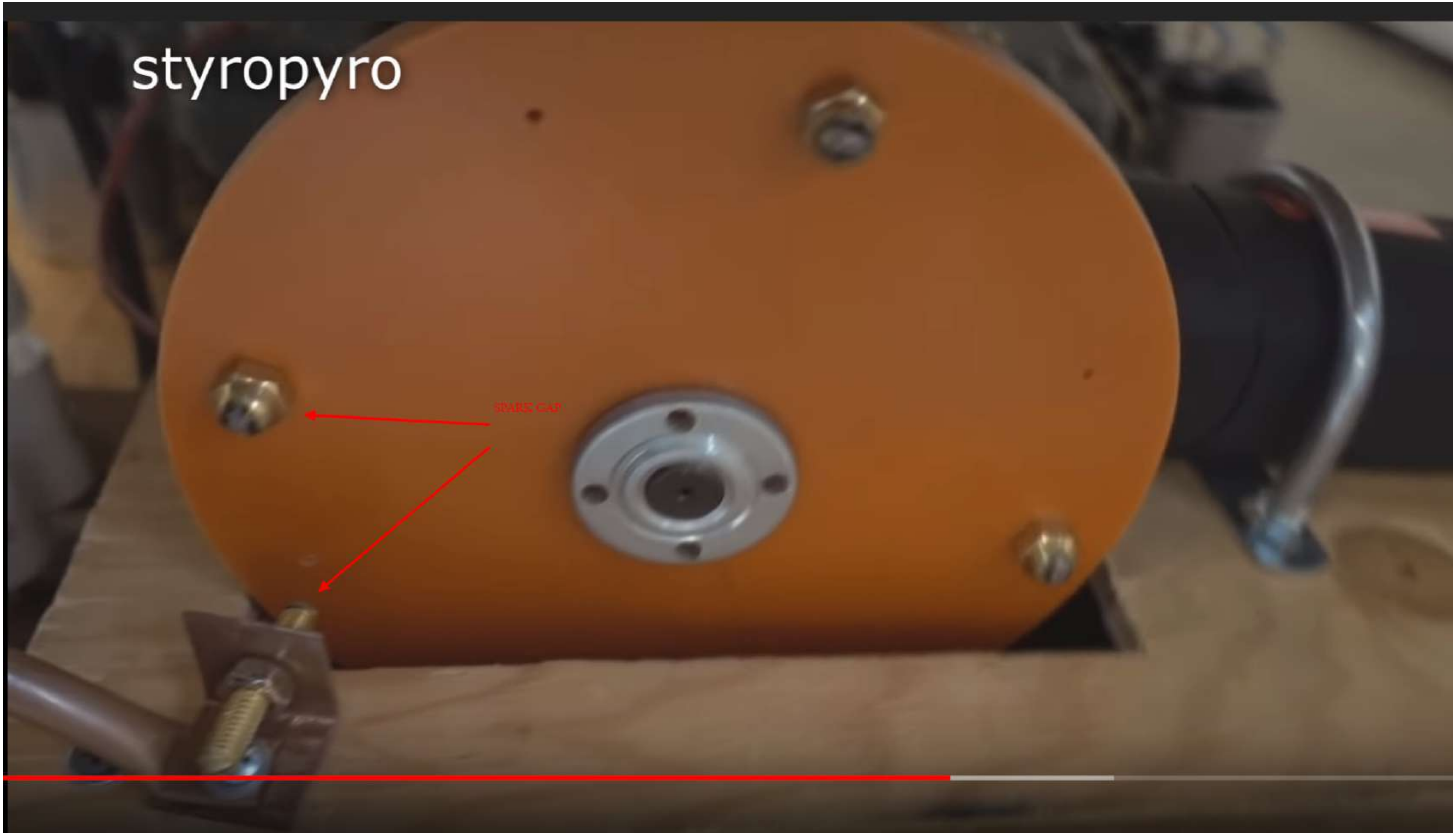


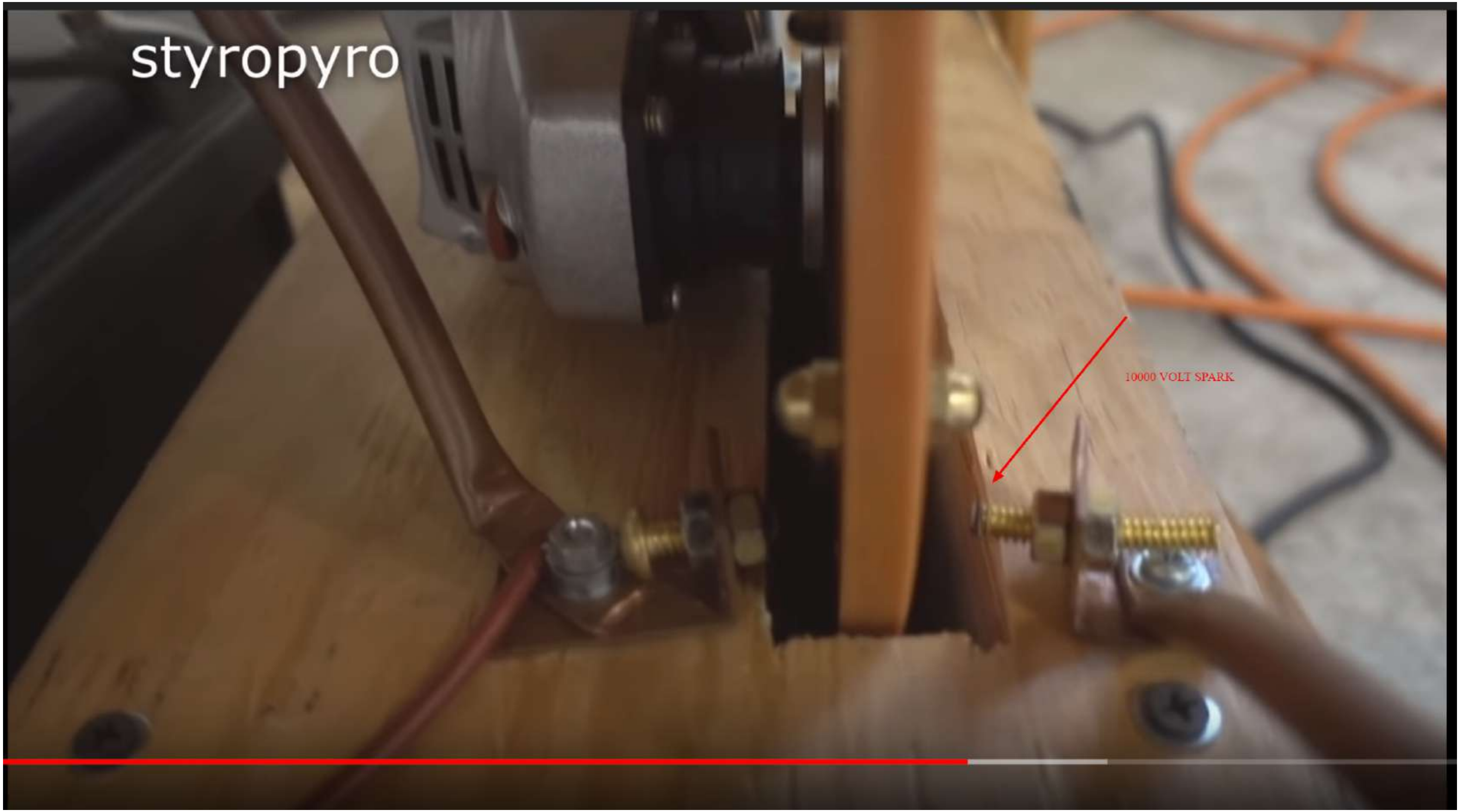
styropyro
BEFORE SERVICING
SHV-6574UC1
OBJY2
DPC-N
120V 60Hz
AC DPC-M
DONG YANG POWER SYSTEMS CO.,LTD


styropyro


styropyro

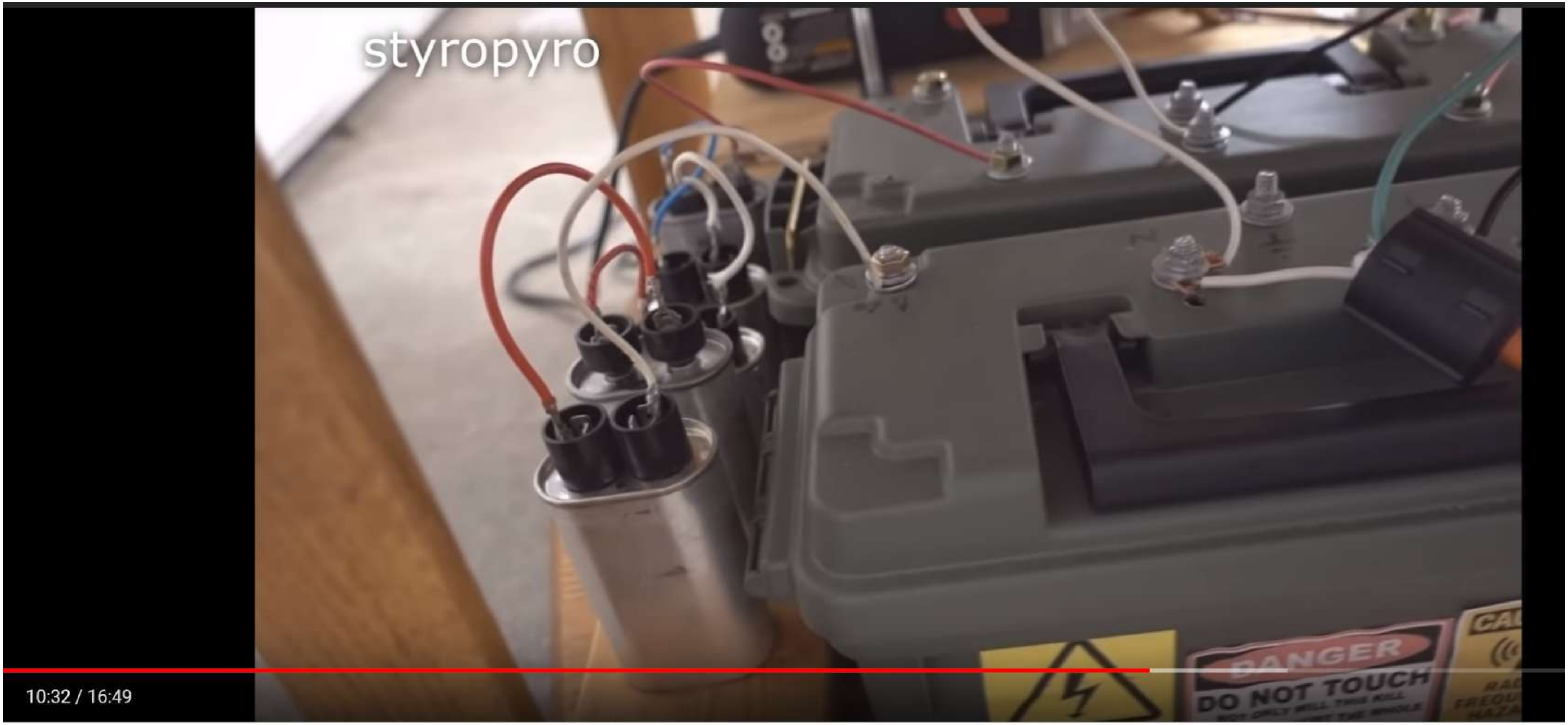

styropyro
REFRIGERATION TUBING


styropyro
SPARK GAP


styropyro
10000 VOLT SPARK


styropyro


styropyro

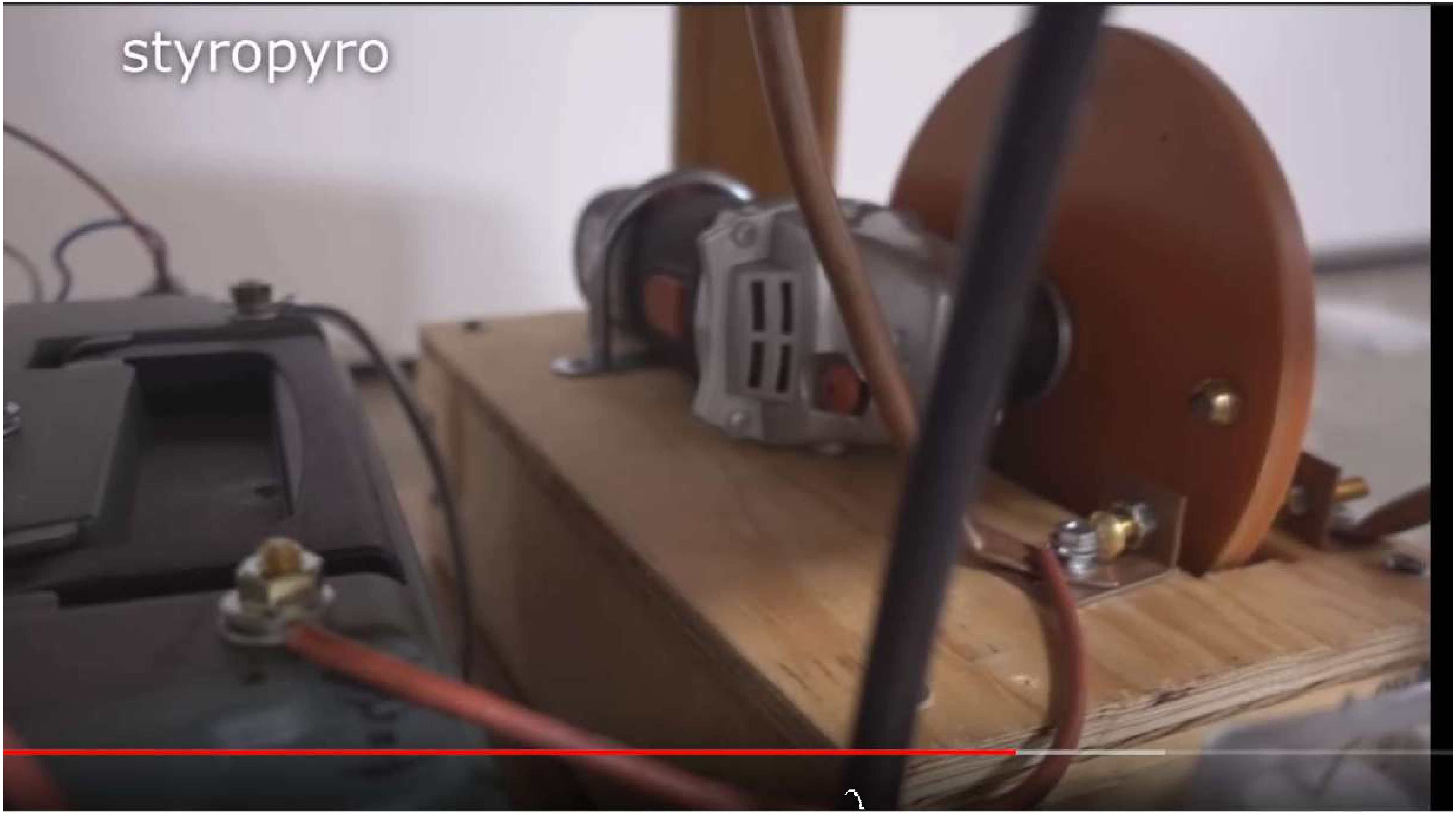


DIY Overclocked Plasma Globe. 2500V to a MILLION volts

Up next


styropyro
MICROWAVE OVEN

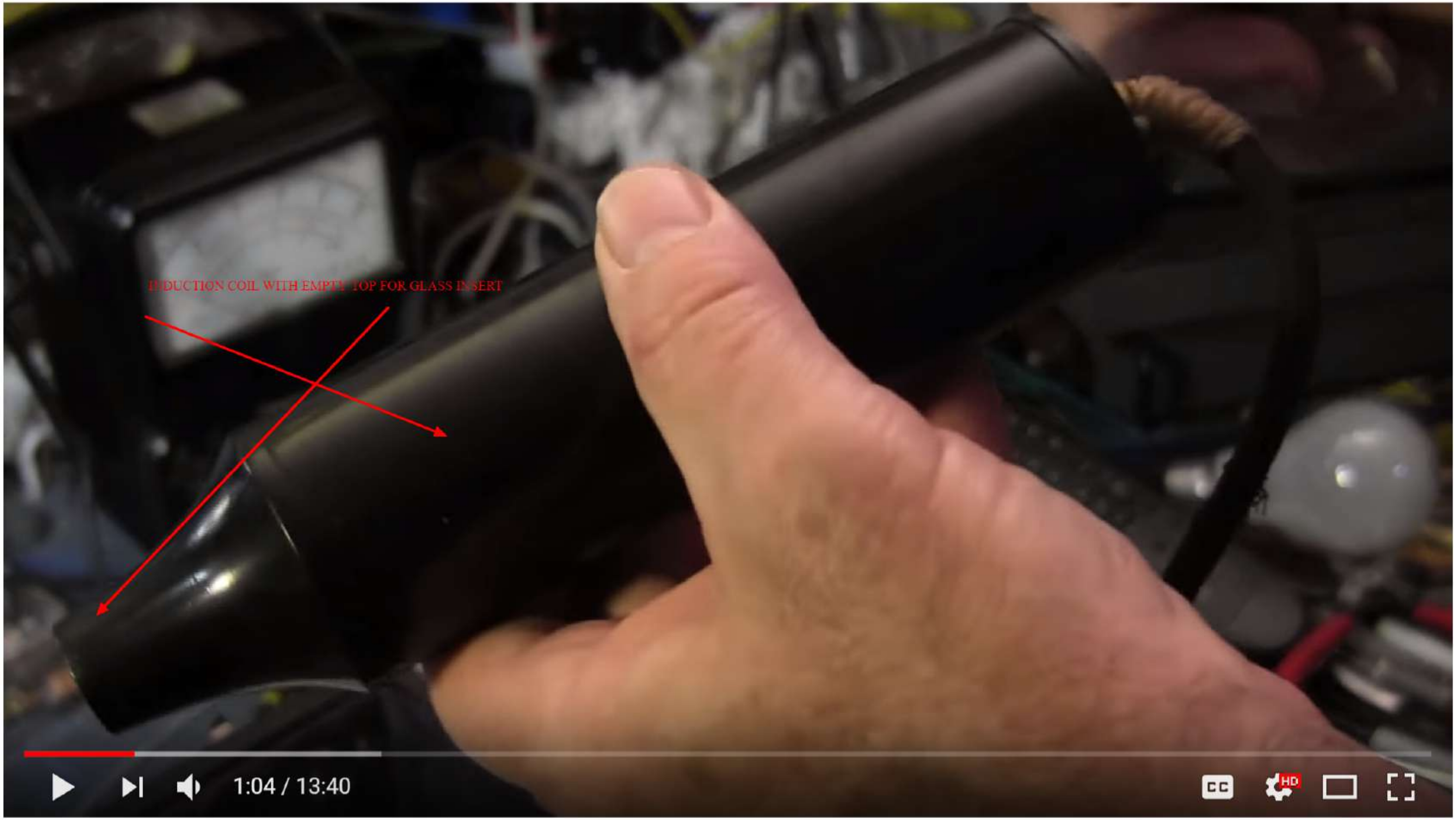

styropyro
CAPACITOR BANK

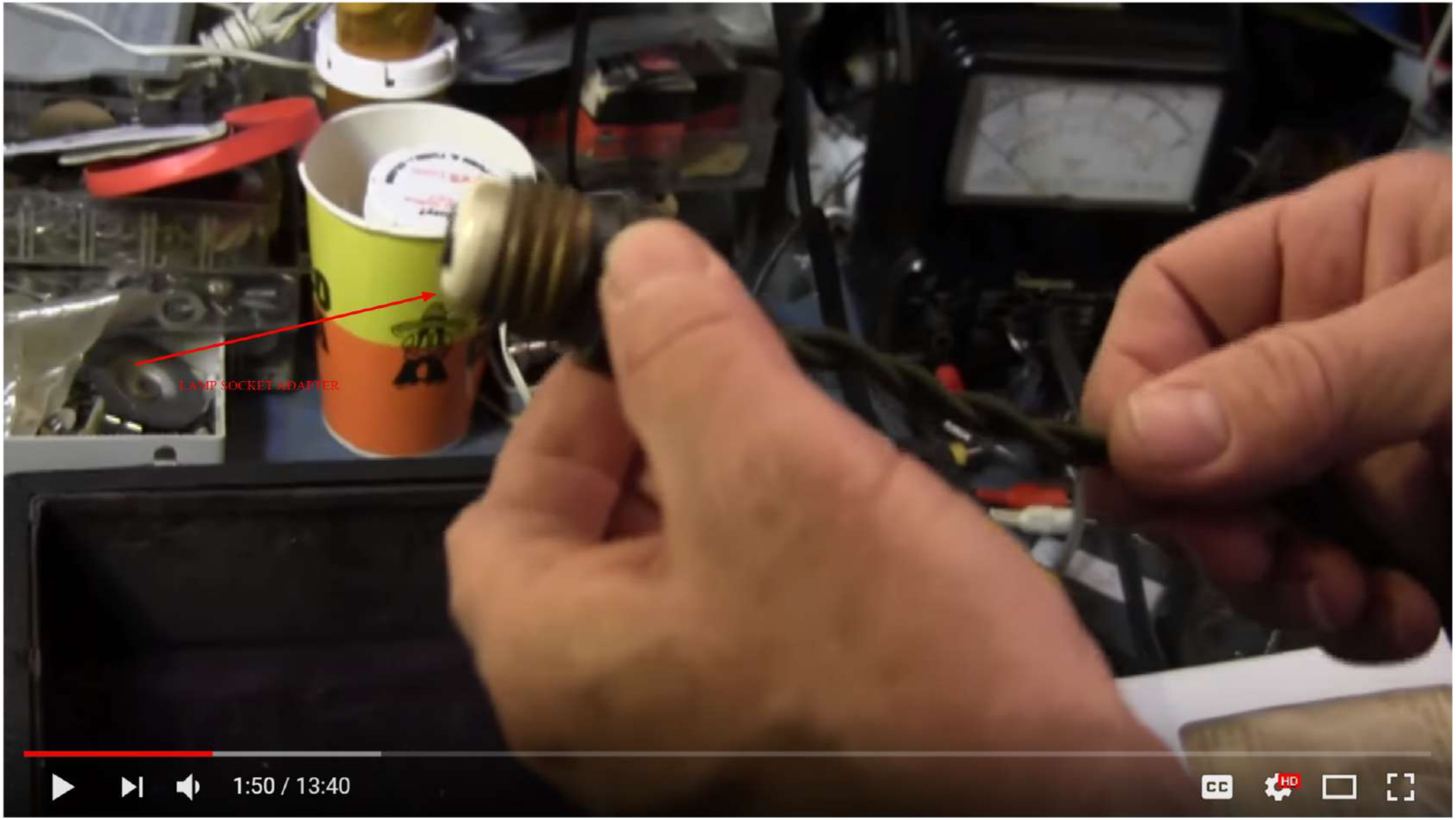

styropyro


styropyro


styropyro


styropyro


INDUCTION COIL WITH EMPTY TOP FOR GLASS INSERT
1:04 / 13:40



Violet ray antique healing device - Tech Talk with Paul and Al

Universal LIGHT BULB ADAPTER for Violet Wands. Makes a Violet Wand Electrode out of any Standard Base Light Bulb

$19.95

Ask a question

CONNECTOR SIZE

Select an option

Quantity

1

Add to cart

Overview

- Handmade item
- Materials: aluminum, bakelite


You need 7/16" for these units
MASTER VIOLET RAY
NO. 2B
Master
Electric
Company


You need 11.25 mm for these devices


КОРОНА
For these units you need 12 mm


11:29
2:52 / 13:40
CC
HD

EL OSCILADOR DE ONDAS MÚLTIPLES DE GEORGES LAKHOVSKY

Up next

Lakhovsky Multiple Wave Oscillator original device (part 1)

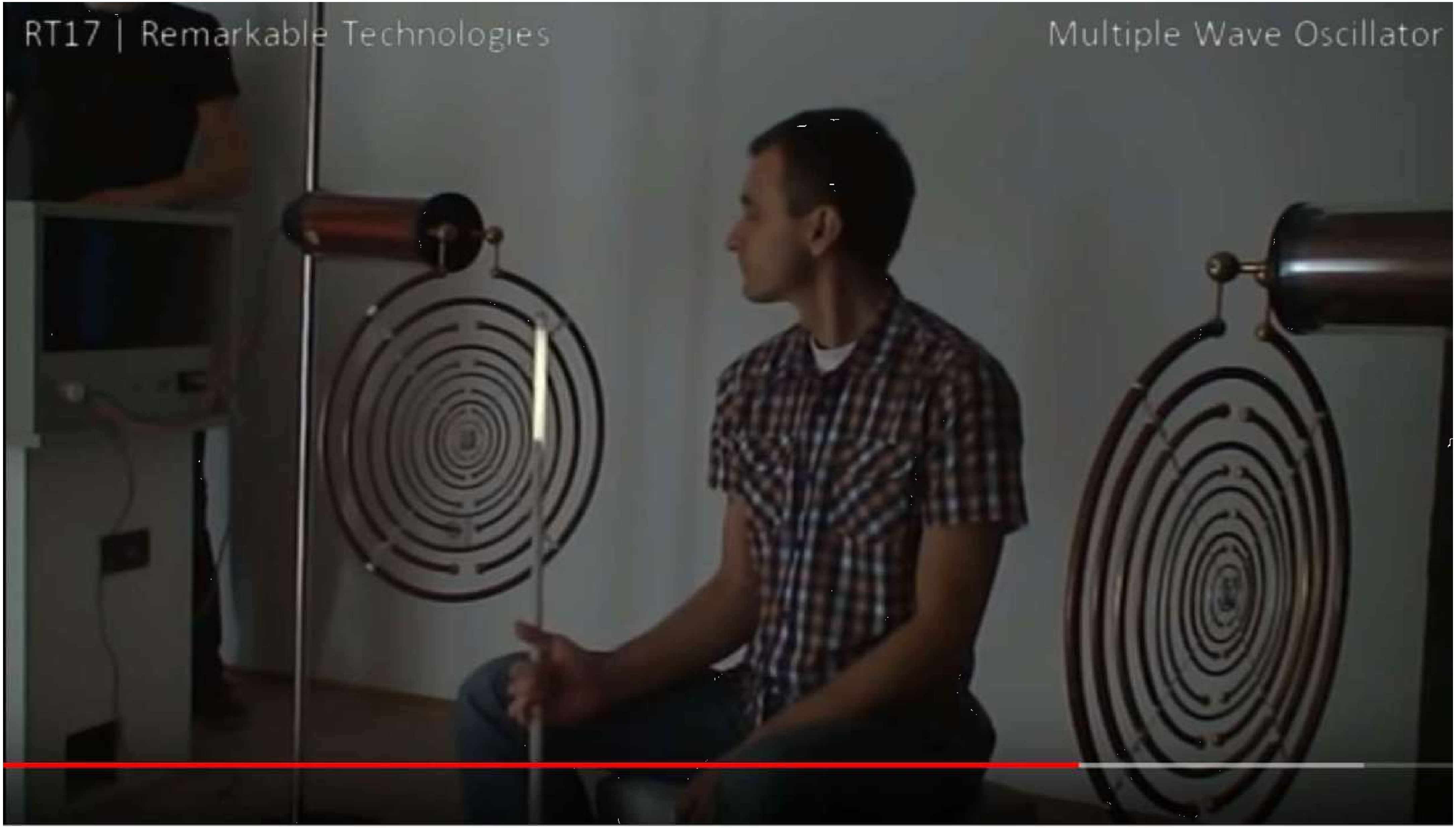
Up next

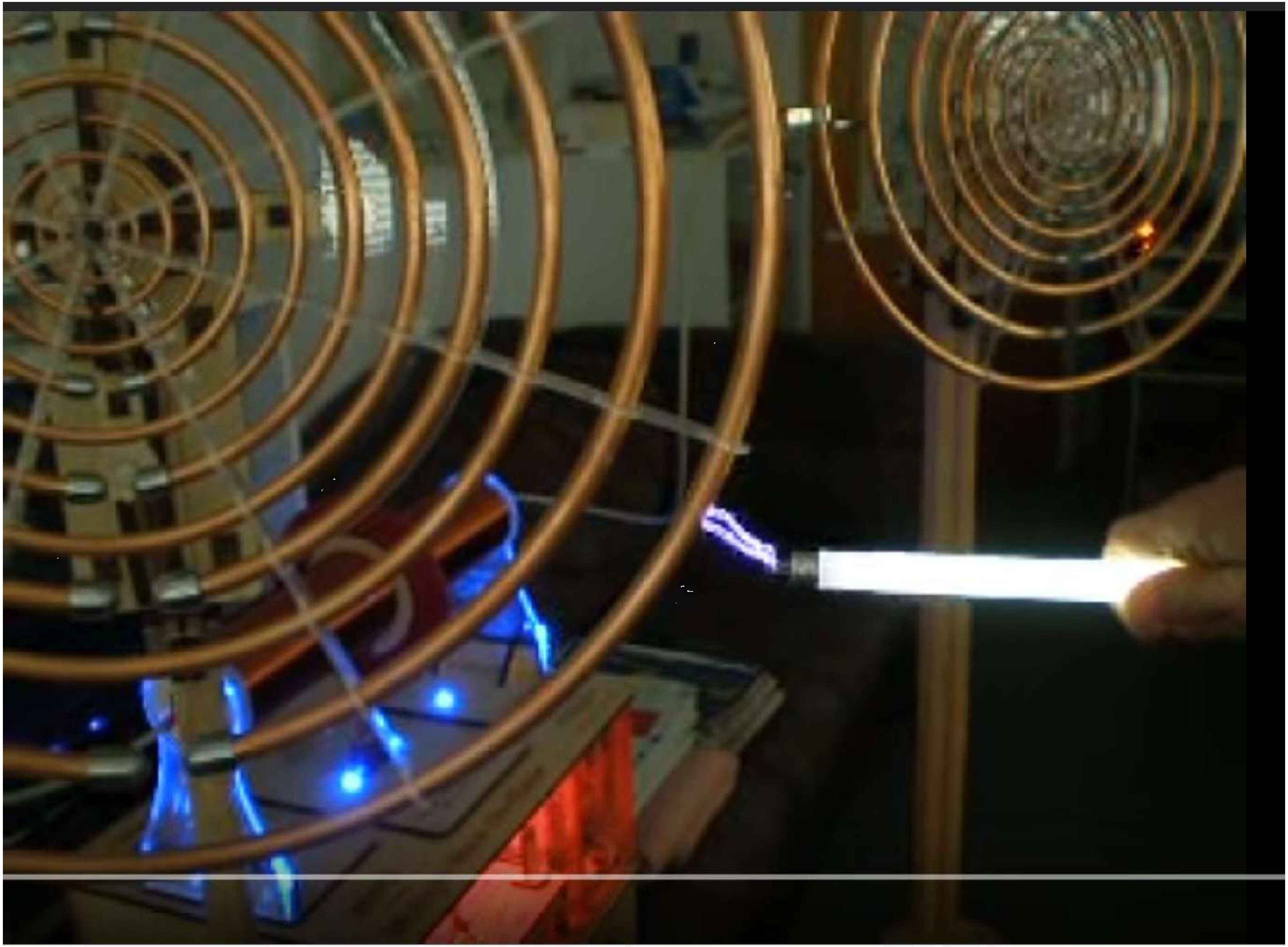

http://users.skynet.be/Lakhovsky/

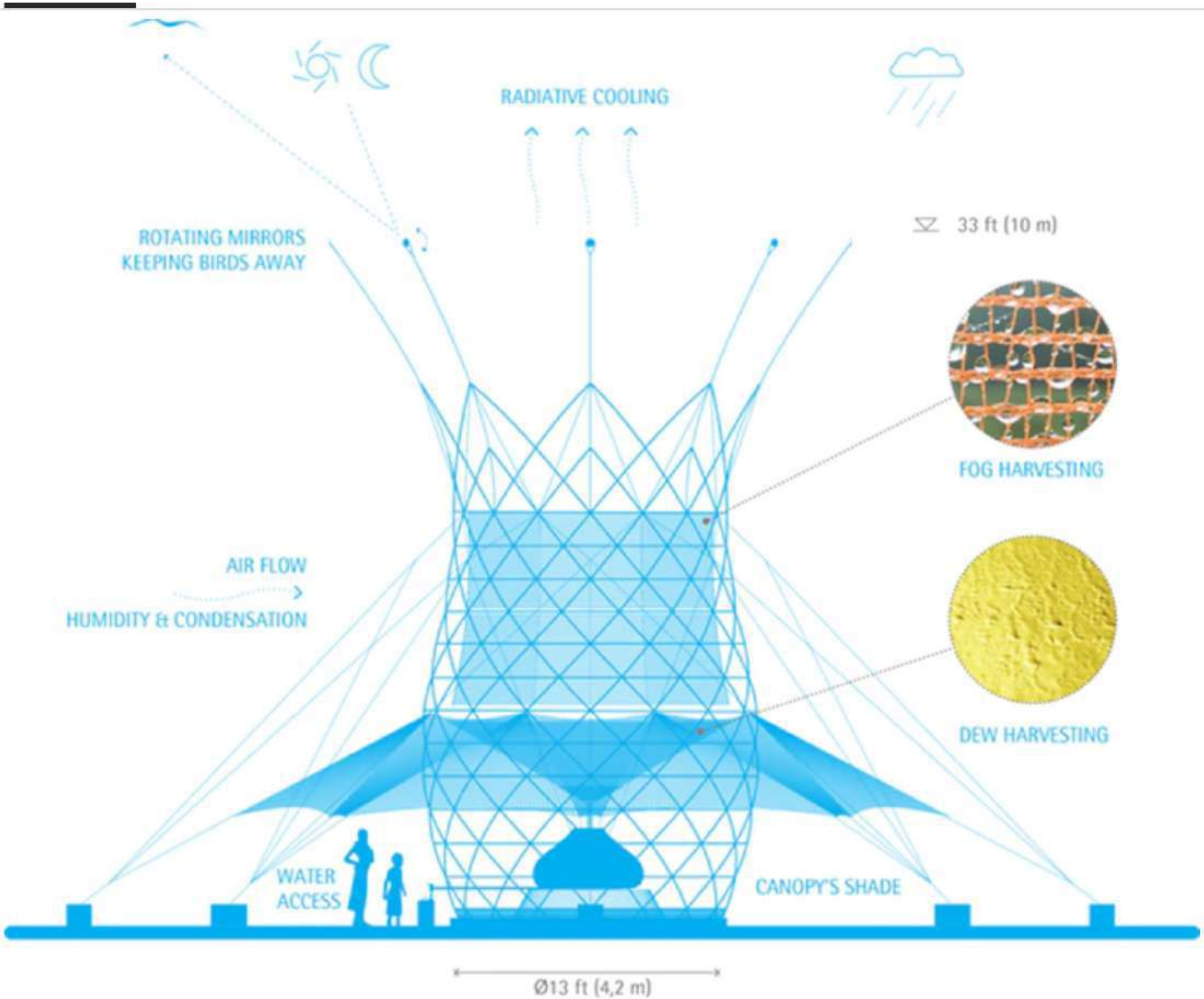

http://users.skynet.be/Lakhovsky/


http://users.skynet.be/Lakhovsky/


http://users.skynet.be/Lakhovsky/


RT17 | Remarkable Technologies
Multiple Wave Oscillator





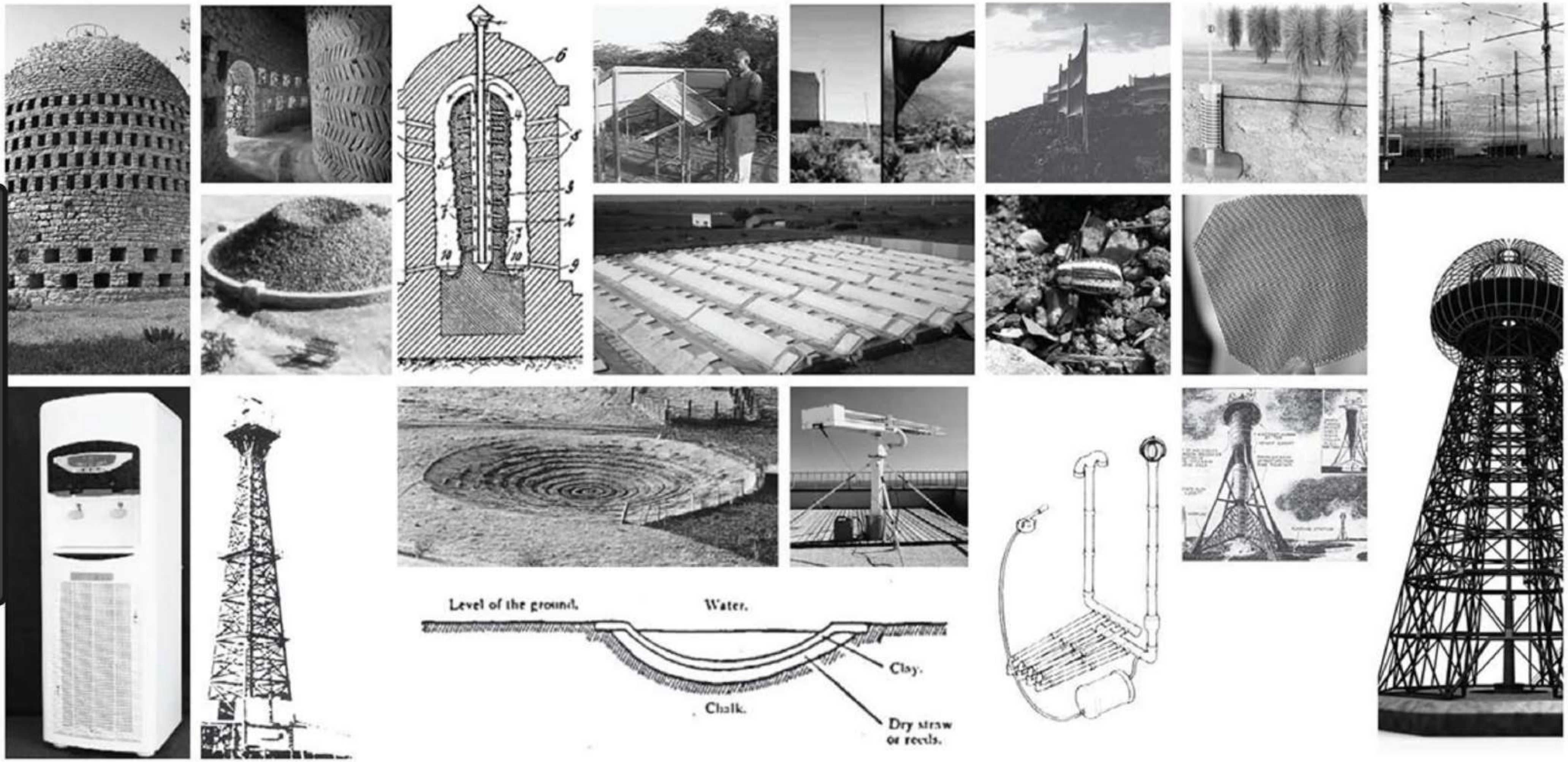
back to Rome in the evening
Day 5: 1/2 day tour of Rome and remainder of day at leisure
Day 6 : Flight back home
*The Italy trip is planned for spring-summer 2015. Itinerary is preliminary and subject to change. Includes accommodation, local guide and transport for 2 people. Flights not included

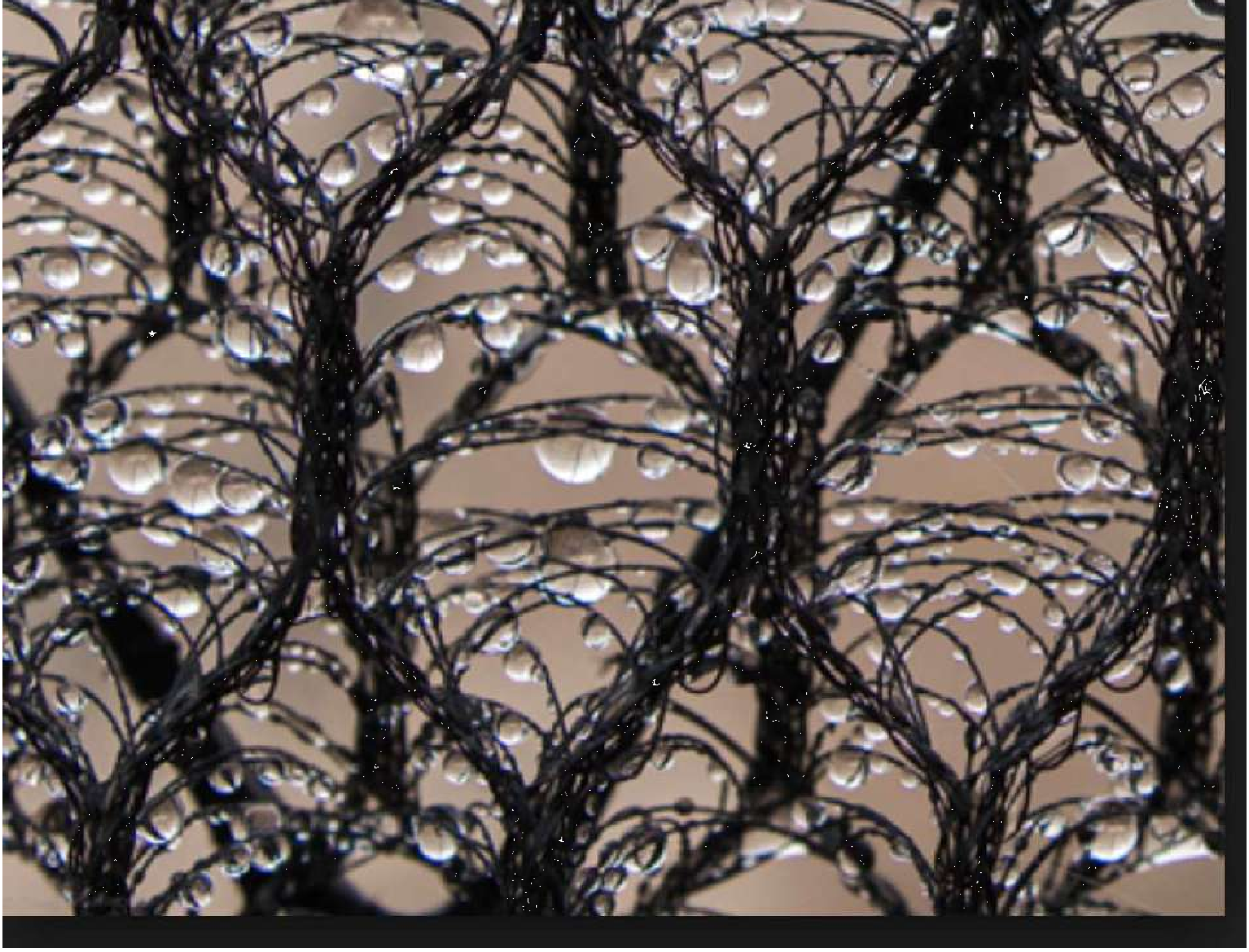
ESTIMATED DELIVERY
May 2015

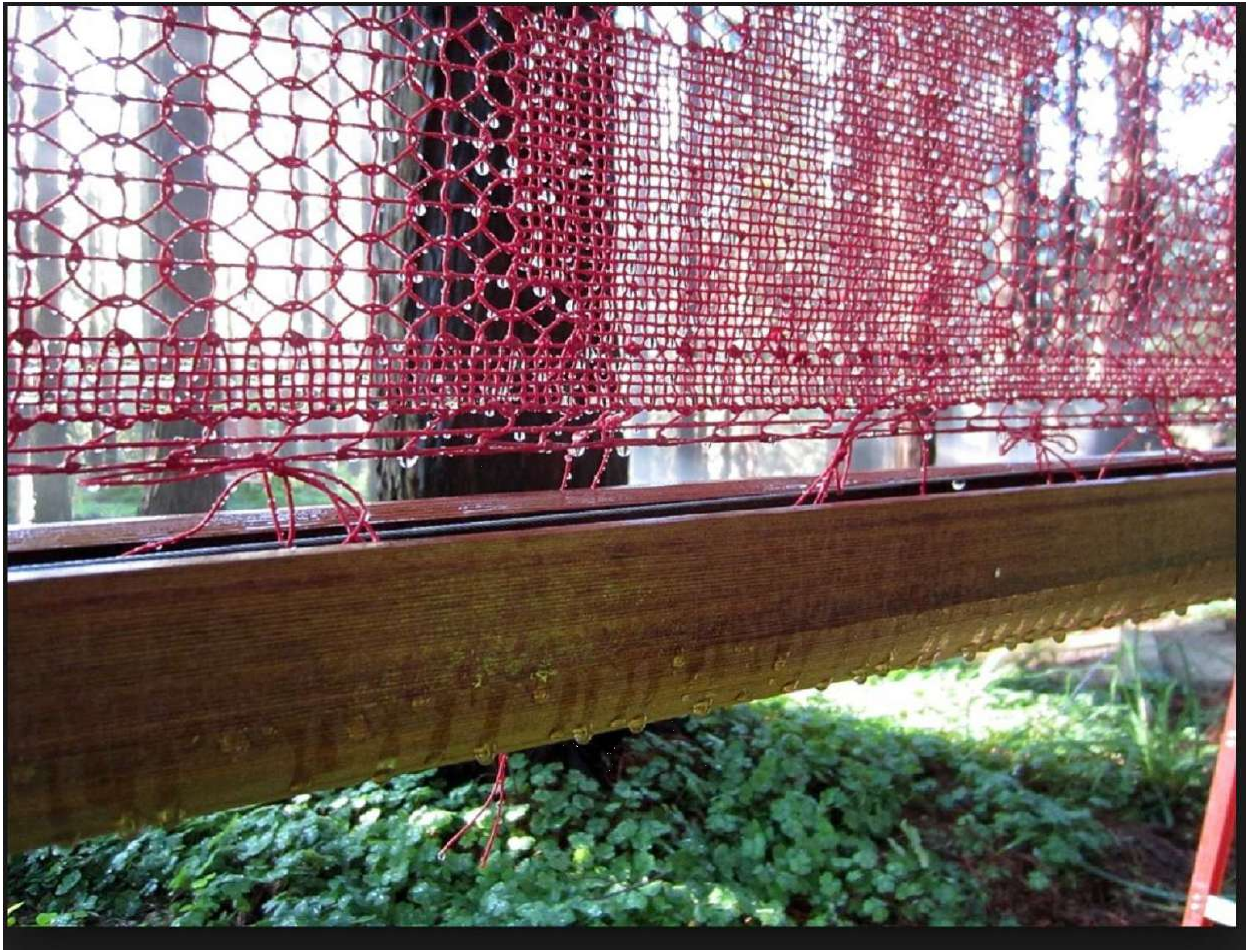
Limited
0 backers

Pledge US$ 10,000

An opportunity to visit the Warka pilot site in Ethiopia. See the Warka in action and spend time with the villagers. 8-day itinerary includes:
Day 1: Arrive in Addis Ababa and transfer to your hotel.
Day 2: An optional full-day tour of Addis Ababa, the diplomatic capital of Ethiopia. Traditional Welcome Dinner.
Day 3: Drive to Warka Water pilot site and


Level of the ground.
Water.
Clay.
Chalk.
Dry straw
or reeds.





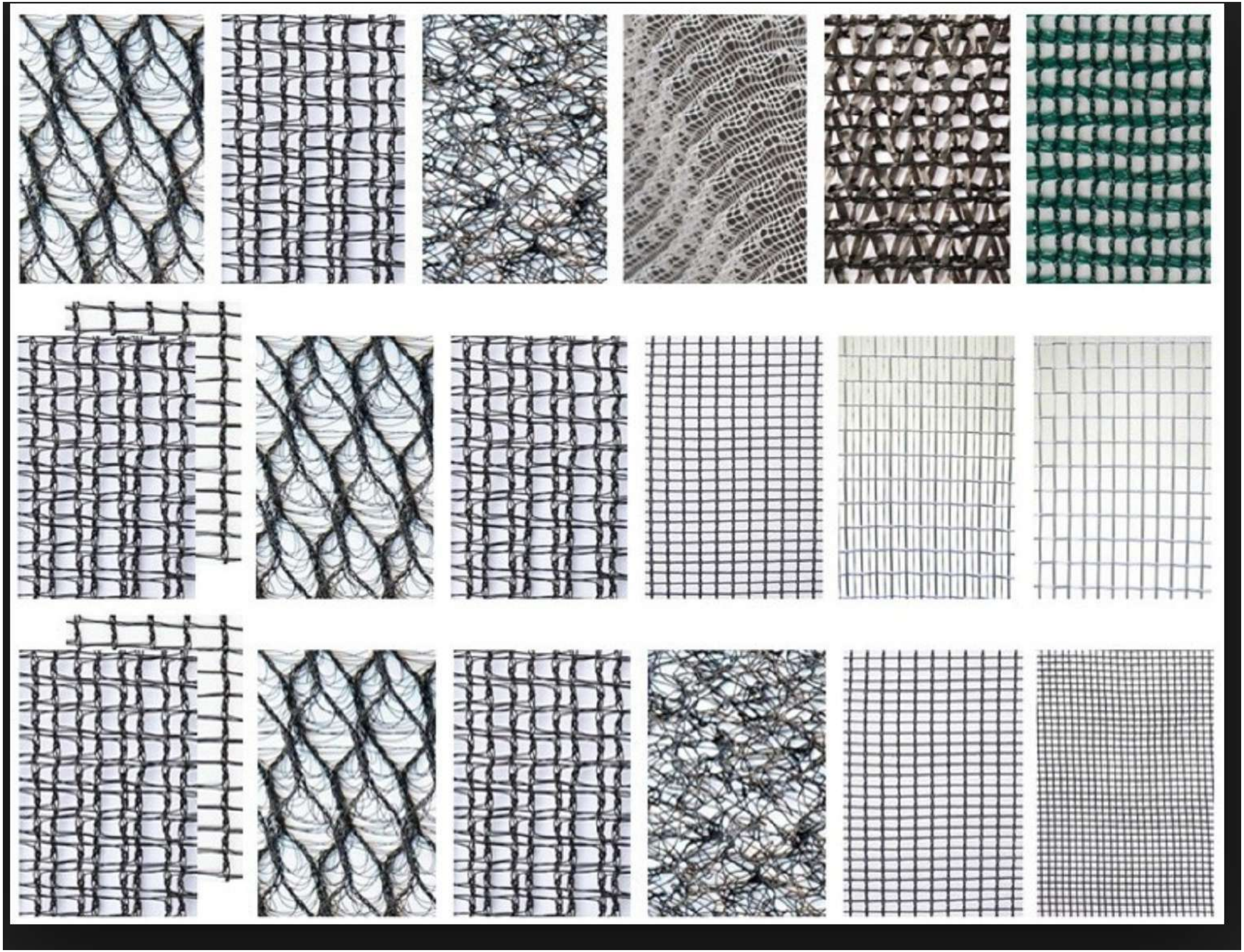




Figure 48:Dew Pond (Oxteddle Bottom, Sussex)

Figure 49:Dew pond

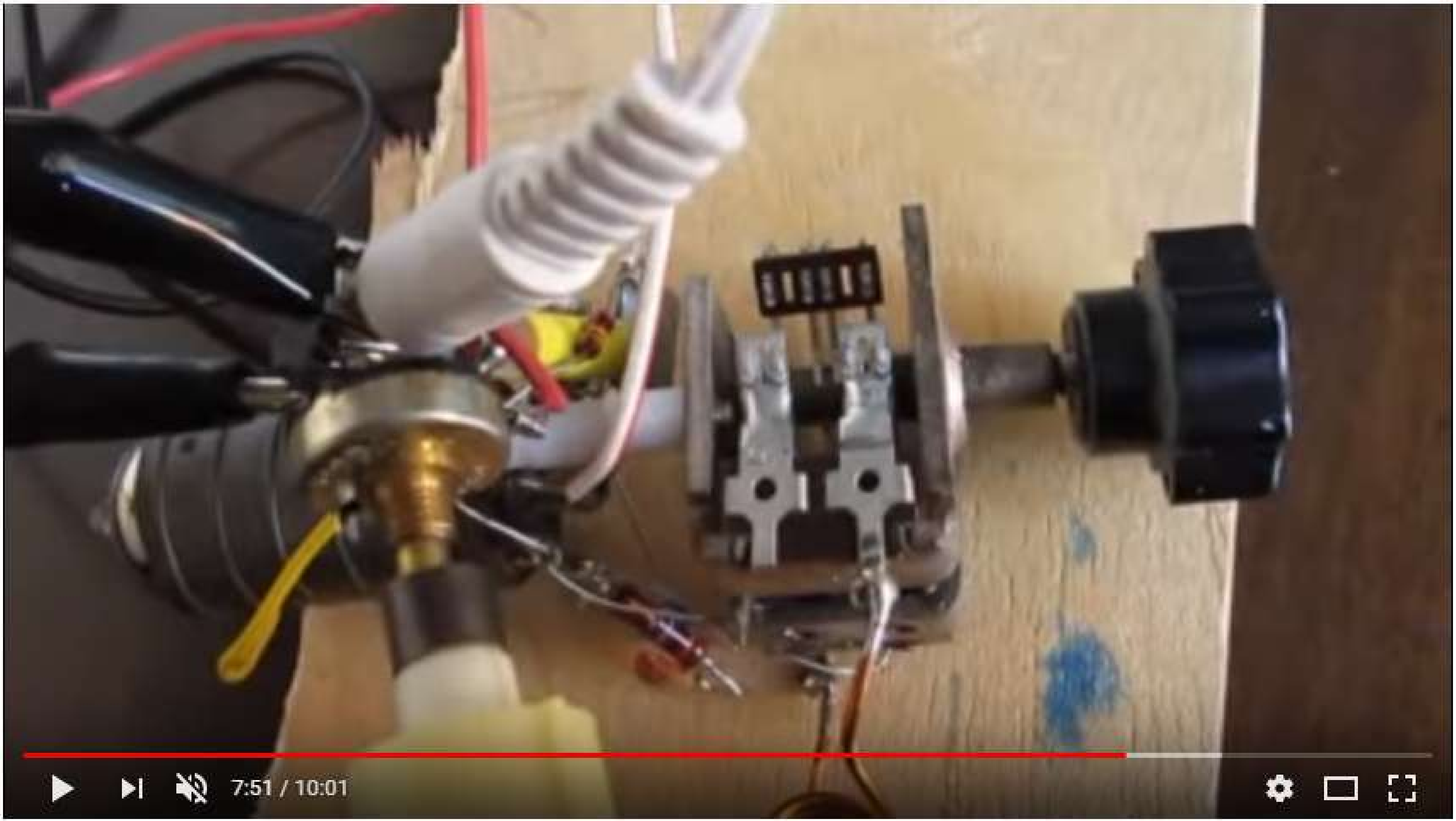

WaterAid
FogNets
FOG
HARVESTING
NETS
Fogs can provide an alternative source of fresh water in dry regions and can be harvested through the use of simple and low-cost systems.
The water droplets are collected on a mesh and drip into a gutter at the bottom of the net from where they are channelled via pipes to a storage tank or cistern.
A single billboard (9'x 22' FT) can provide enough drinking water to 25 thousand people over 10 years.
1 yd²
(23 USD)
UP TO 17 GALLONS
OF WATER PER DAY

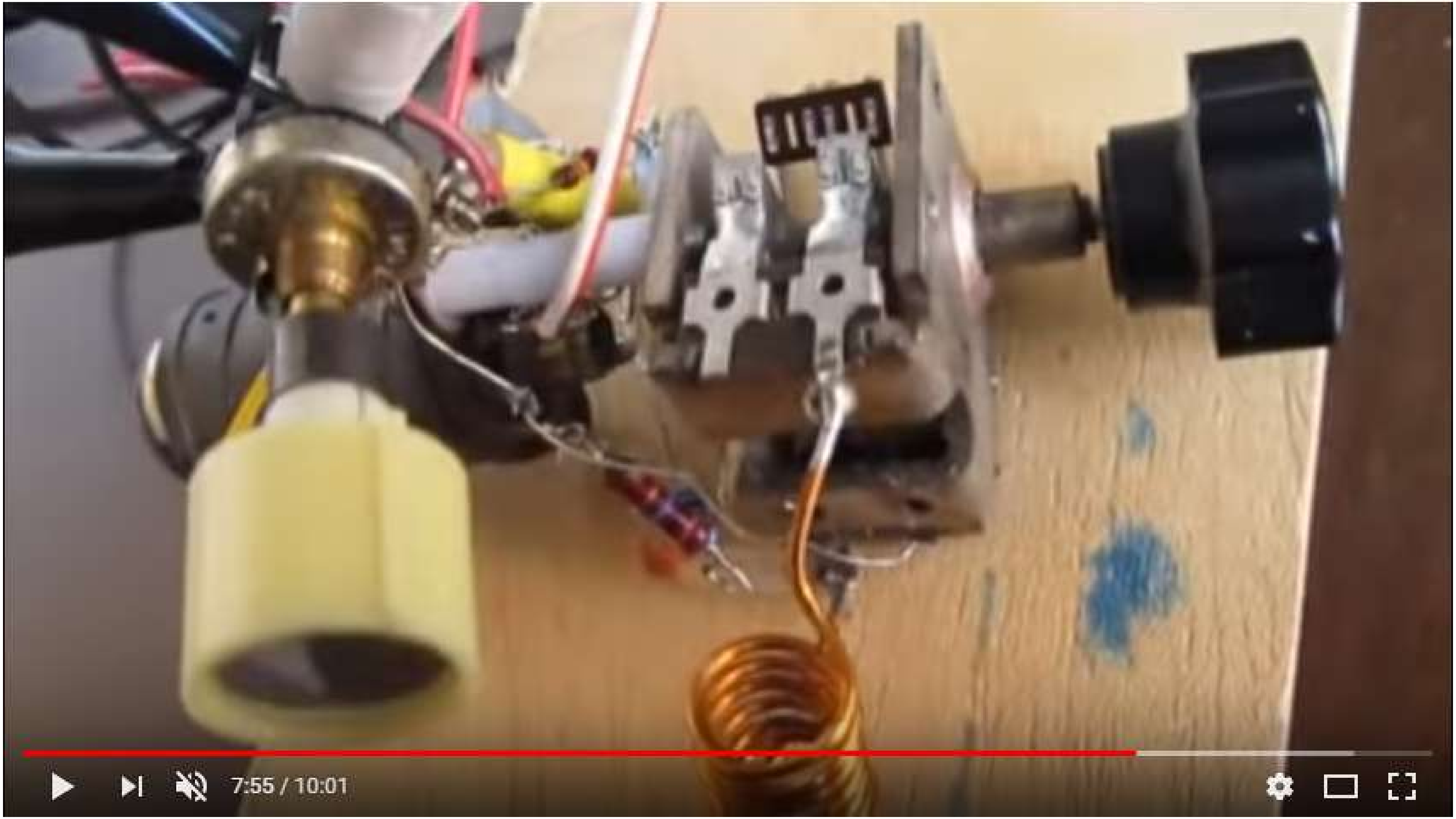
List of components

V1 = valve ECC81 or 12AT7
R1 = 10Mohm
R2 = 100Kohm
R3 = 47Khohm
R4 = potentiometer 22Kohm linear
R5 = 1Mohm
R6 = 1Kohm
C1 = variable capacitor in air 20 + 20pF
C2 = ceramic 47pF
C3 = 10nF minimum 100V
C4 = 2.2nF
C5 = 25uF 16V electrolytic
C6 = 10nF 250V or more
L1 = 7 spiers spaced 1.5mm, diameter 1.4mm thread on 1cm support
L2 = 2 spaced spaced 1.5mm, diameter 1.4mm thread on 1cm support
JAF1 = 5-10uH Noval
valve plinth with screen support or take the screen separately.
Stereo jack to be connected with the two earphones in series (do not connect the central mass terminal).
2 knobs for tuning and reaction.
mammoths for connections.
Directional stylus antenna.
For resistances to the maximum use from half a watt but also 1 / 4W should not give problems.

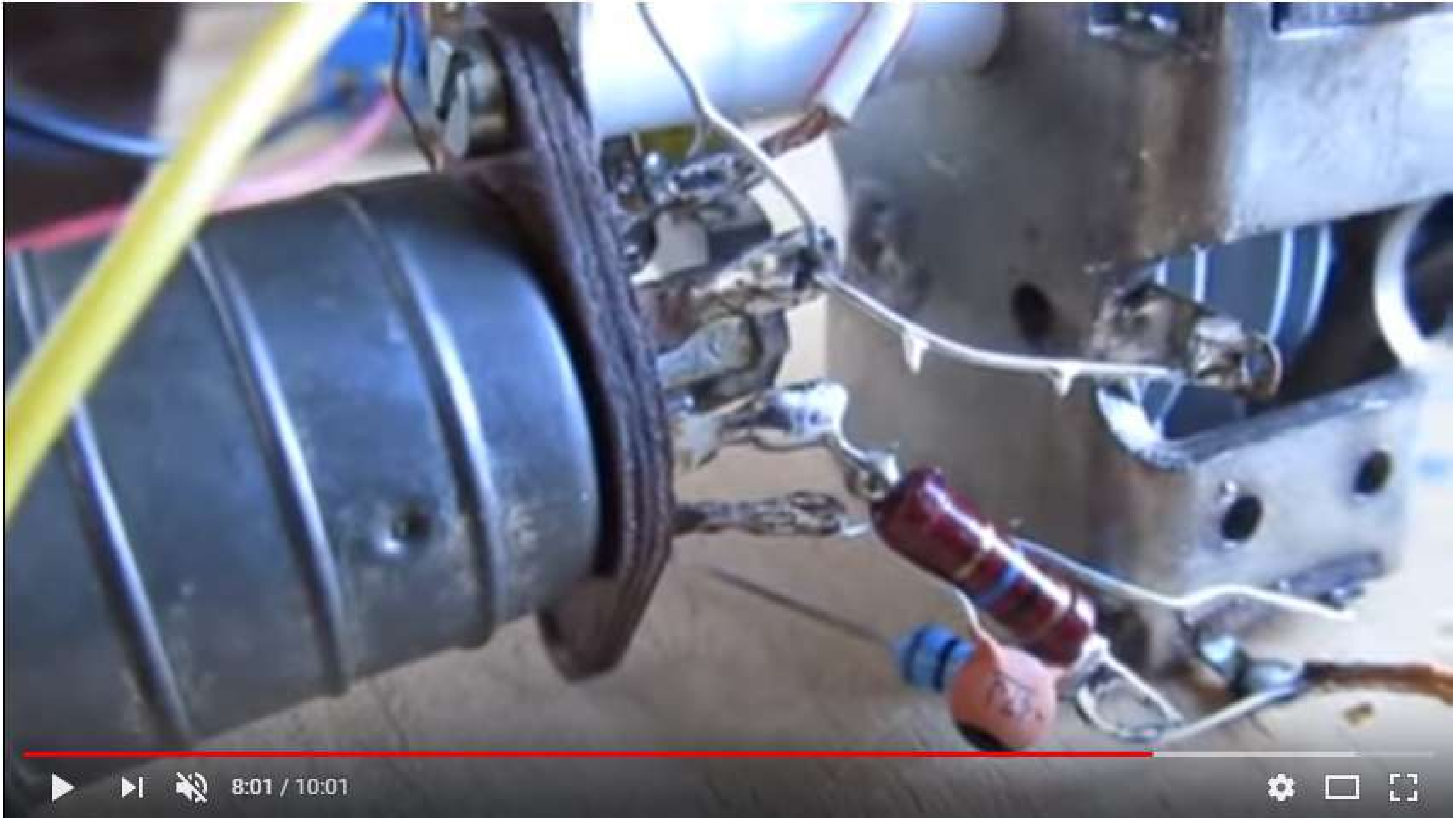
Ricevitore in superreazione con valvola ECC81 12AT7 Primo montaggio.mp4

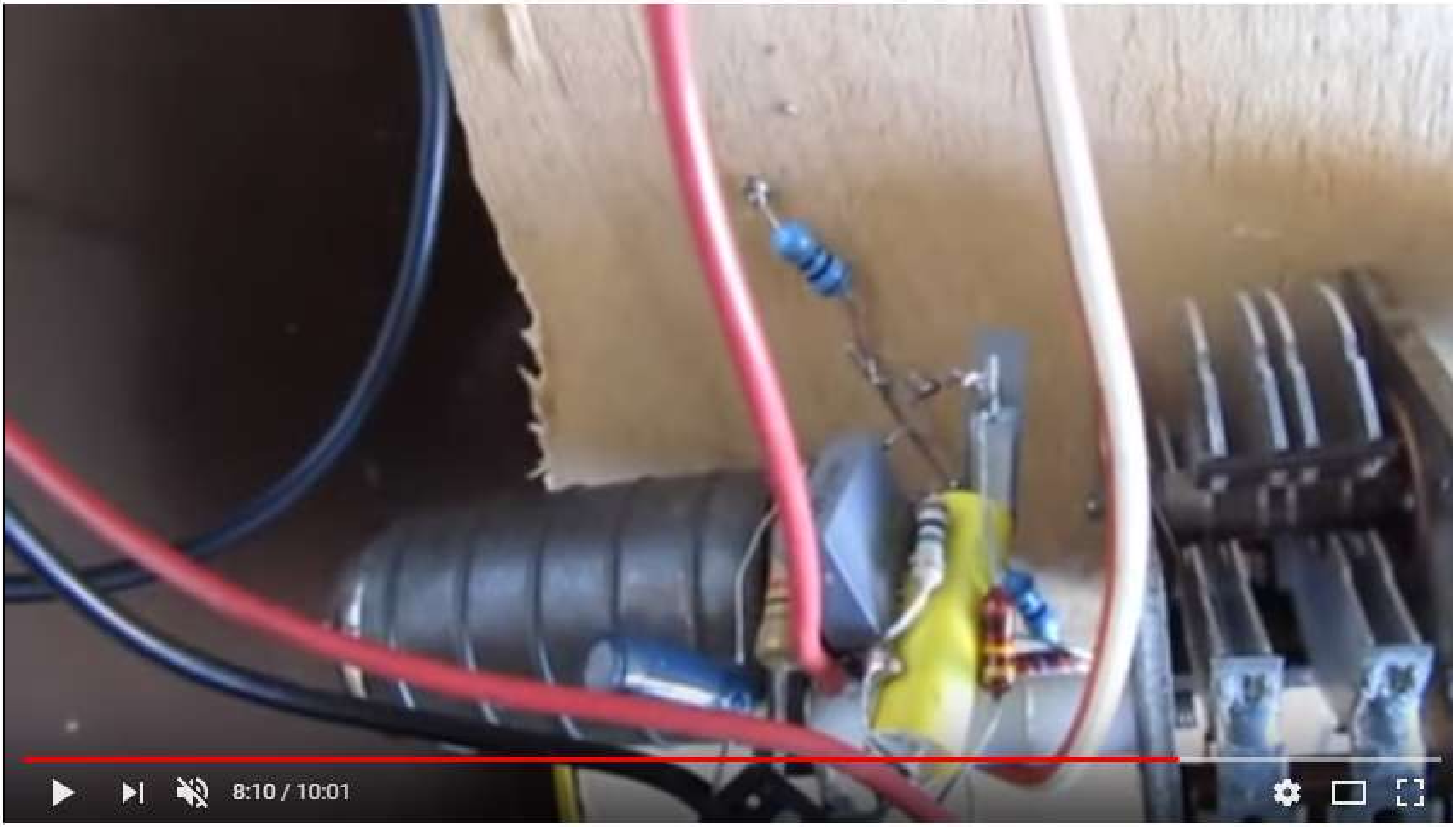

230 V 50-60 Hz
9 V - 3,2 VA
1:27 / 10:01

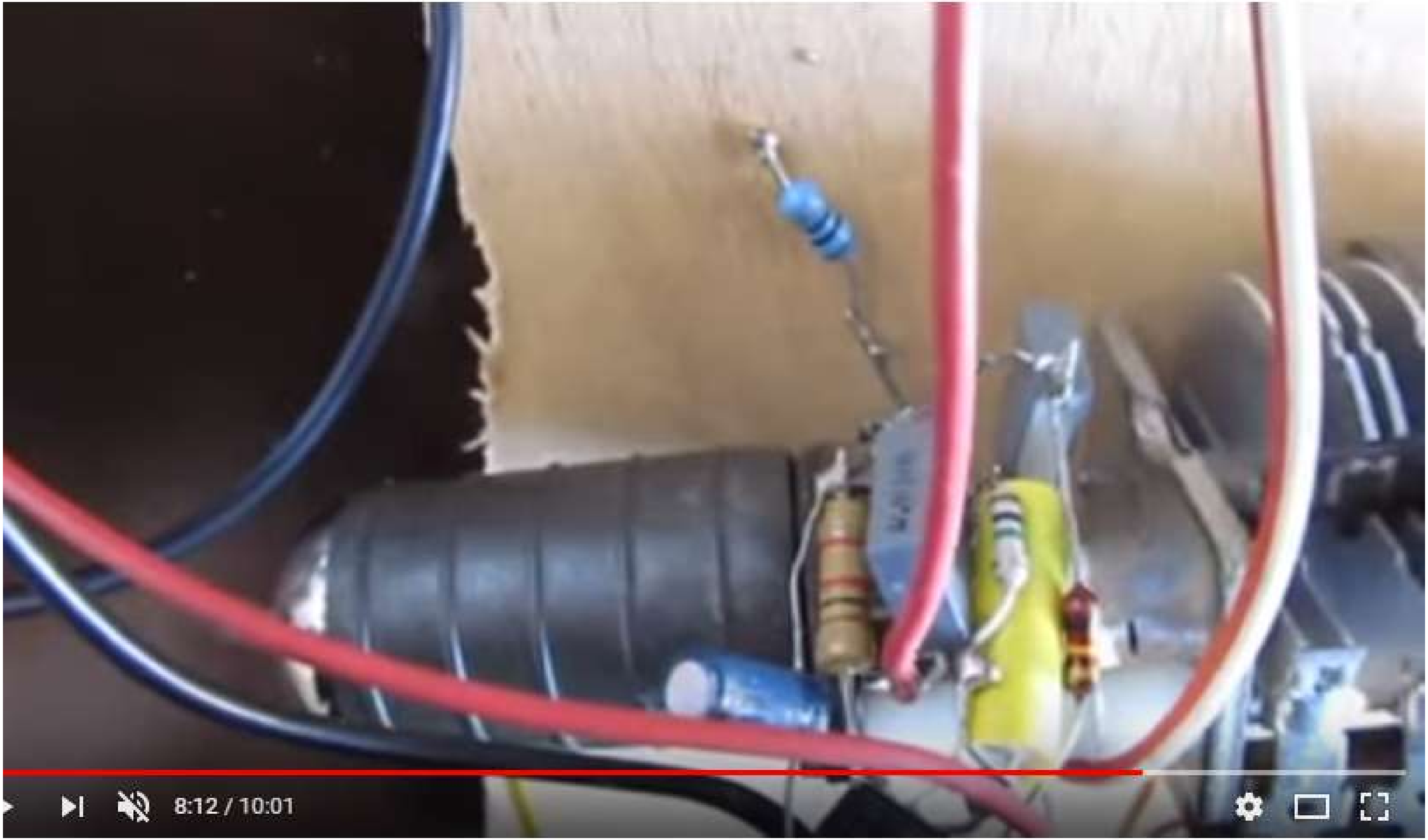

7:51 / 10:01

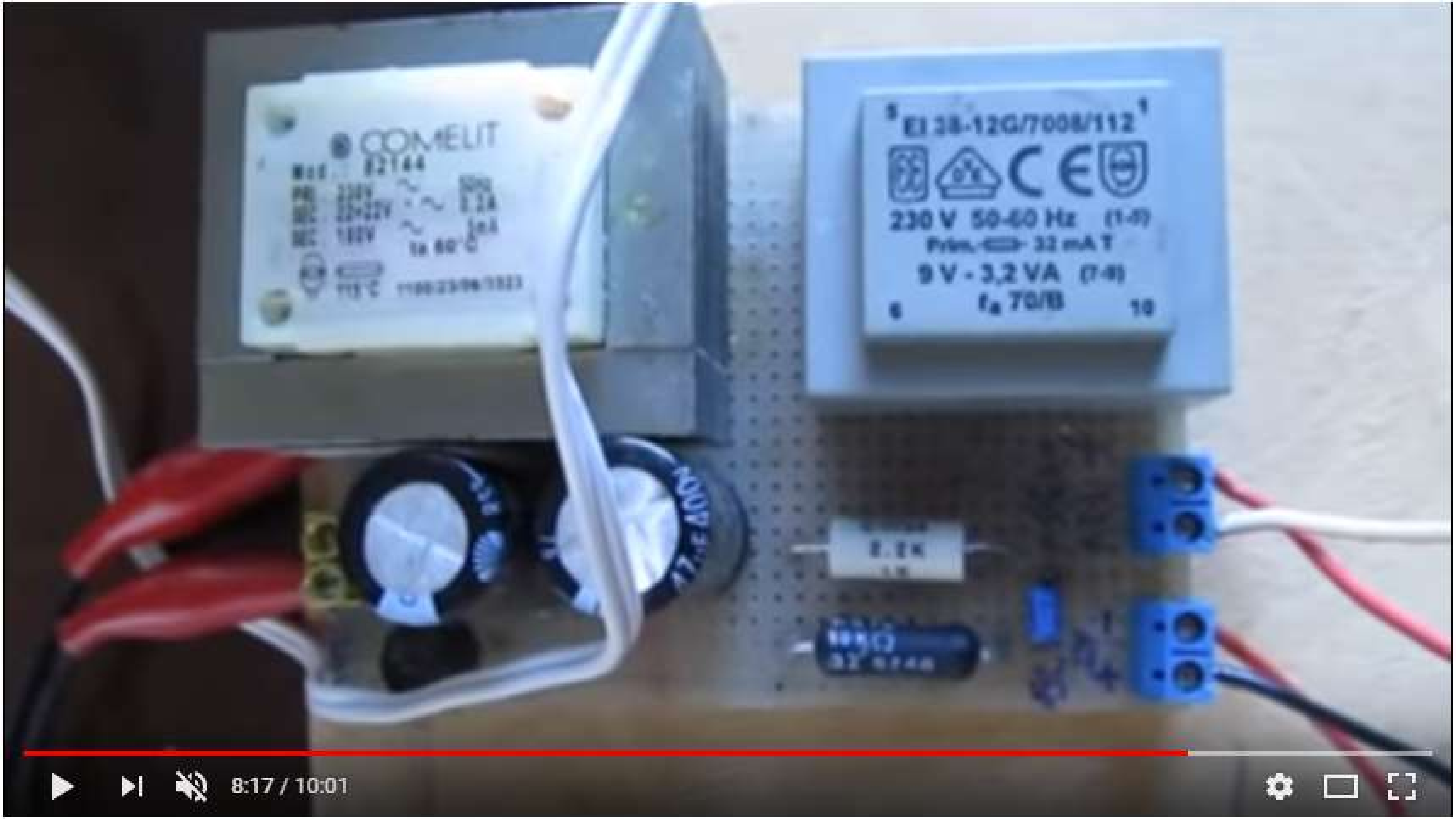

7:55 / 10:01

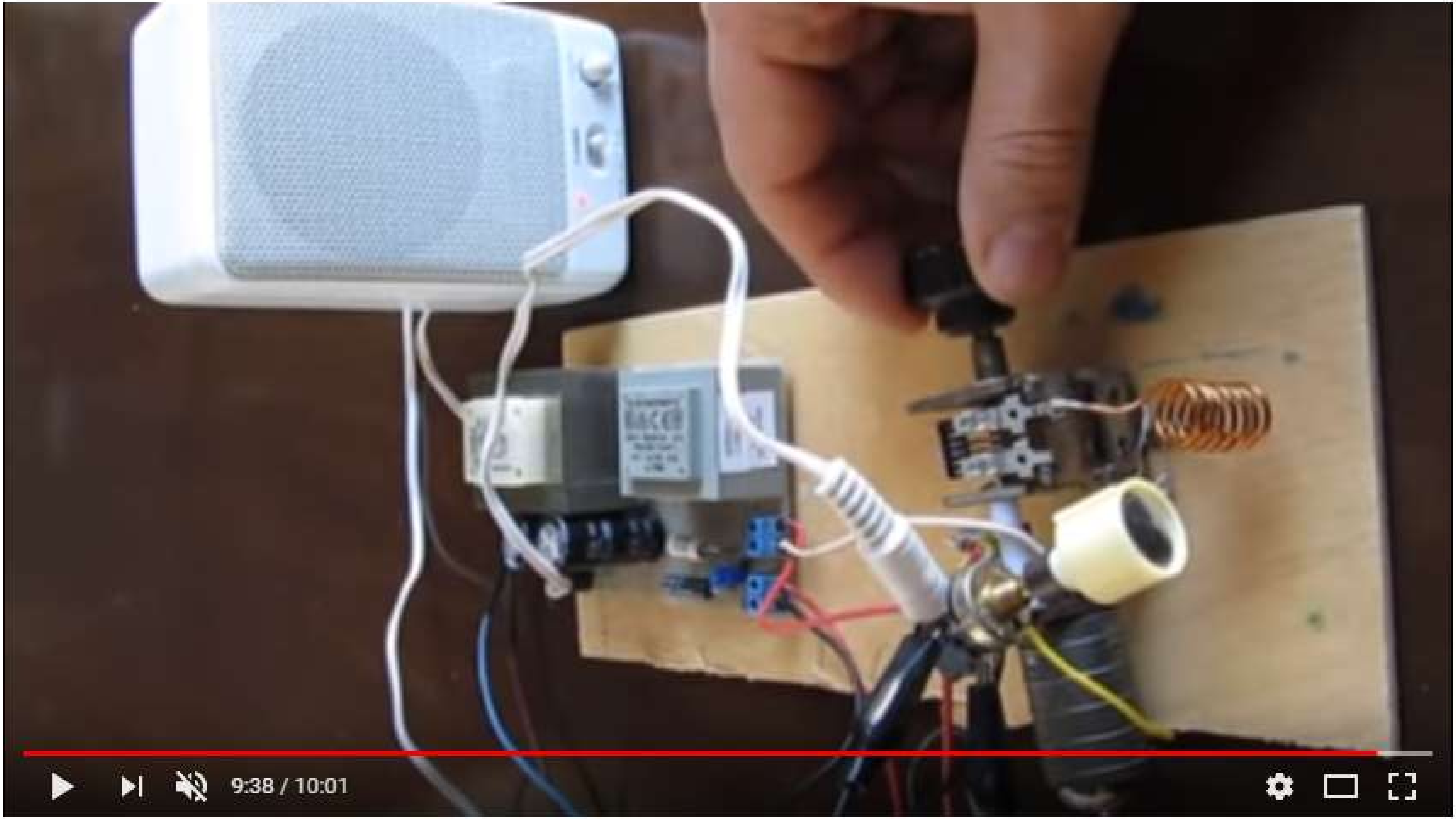

7:58 / 10:01


8:01 / 10:01

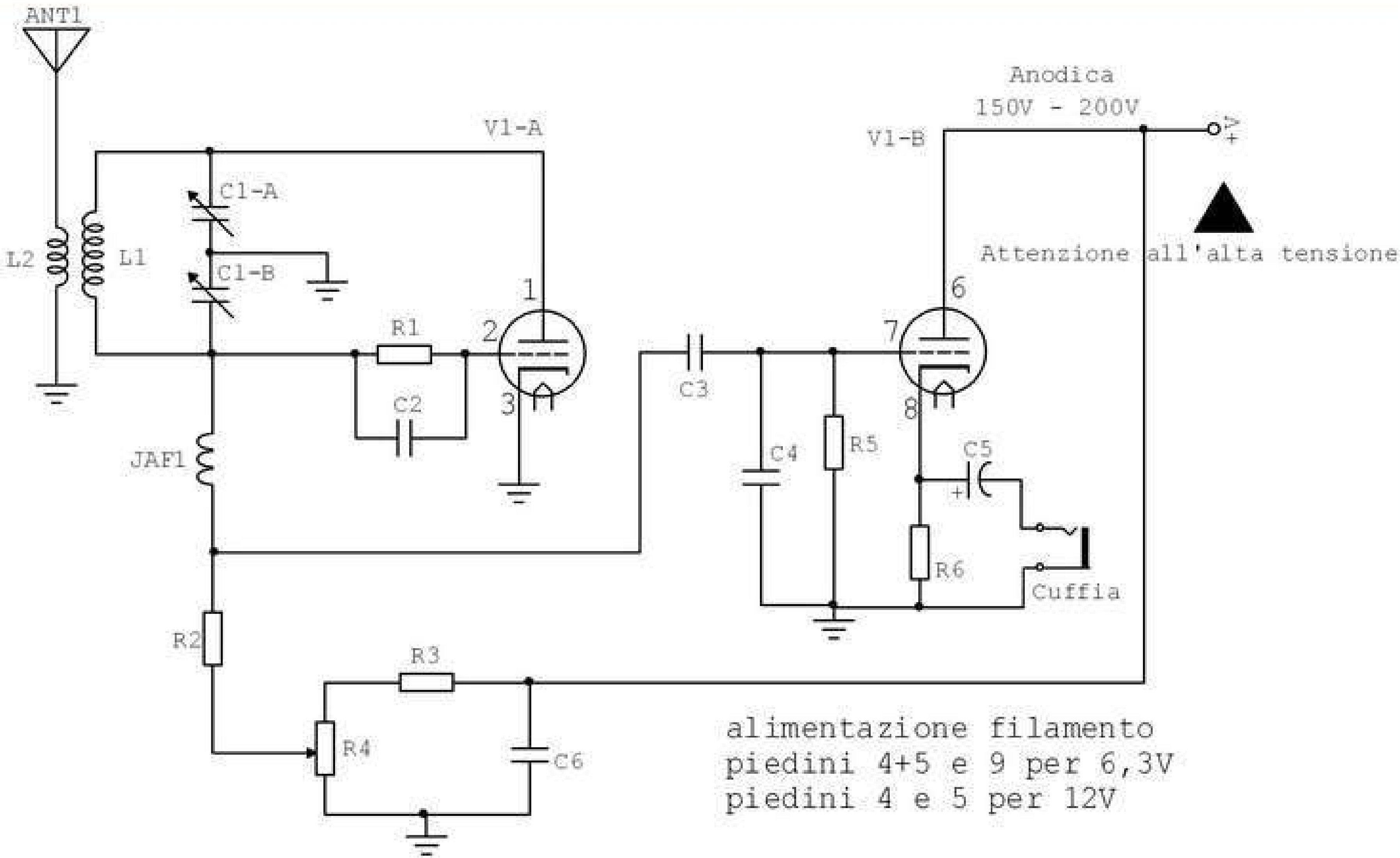

8:10 / 10:01


8:12 / 10:01

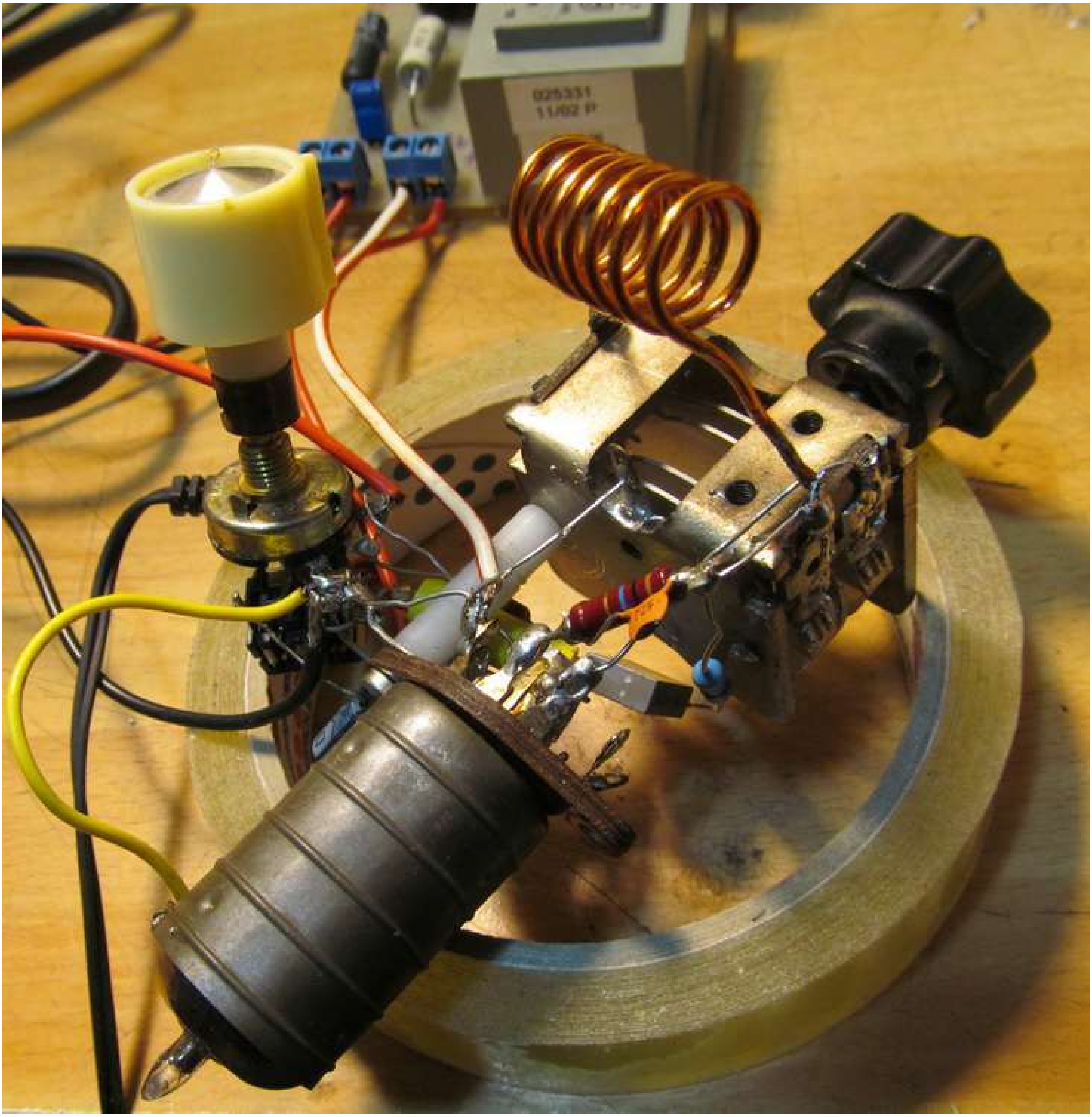

COMELIT
EI 28-12G/7008/112
230 V 50-60 Hz
9 V - 3,2 VA
8:17 / 10:01

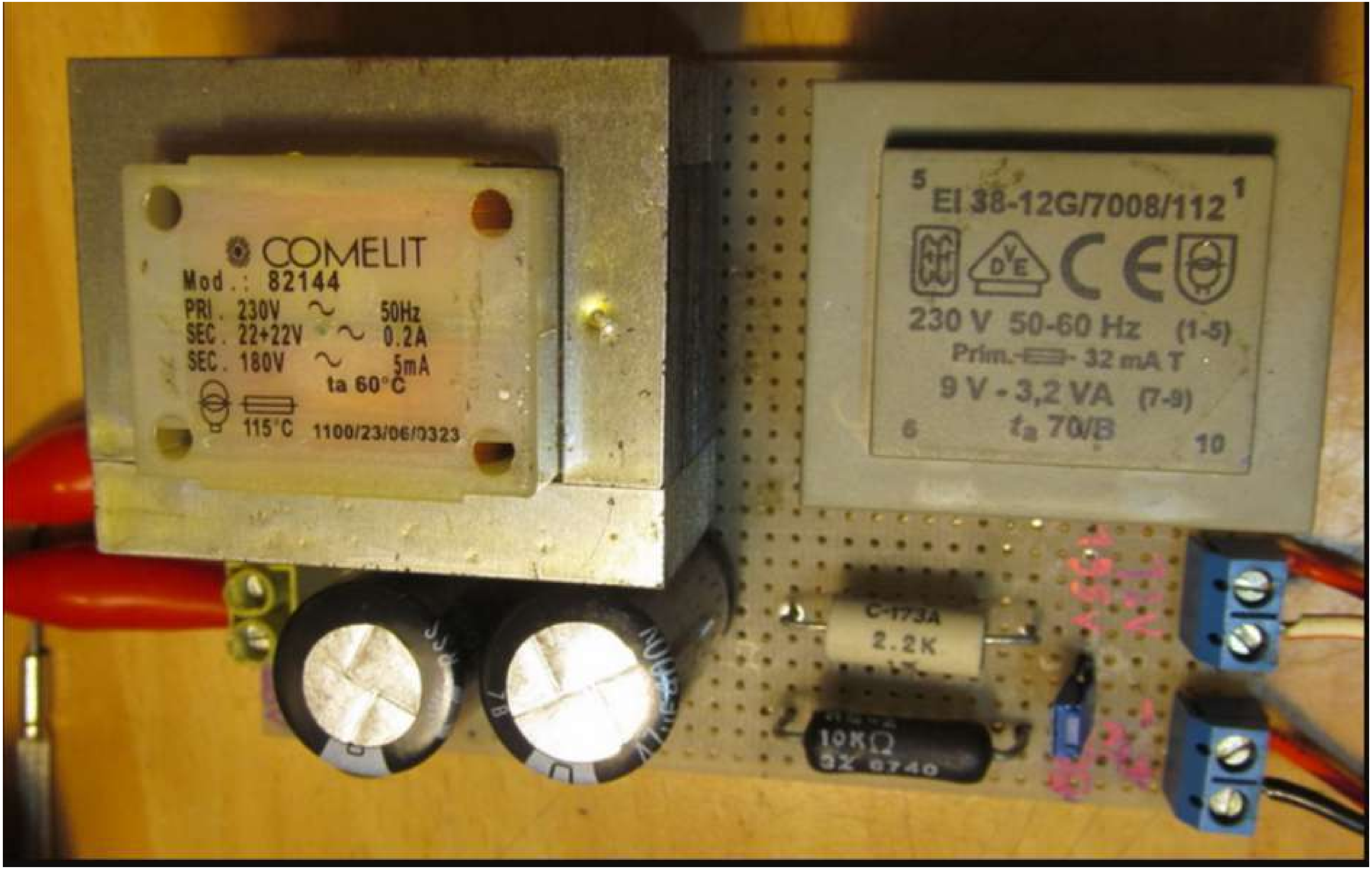

9:38 / 10:01

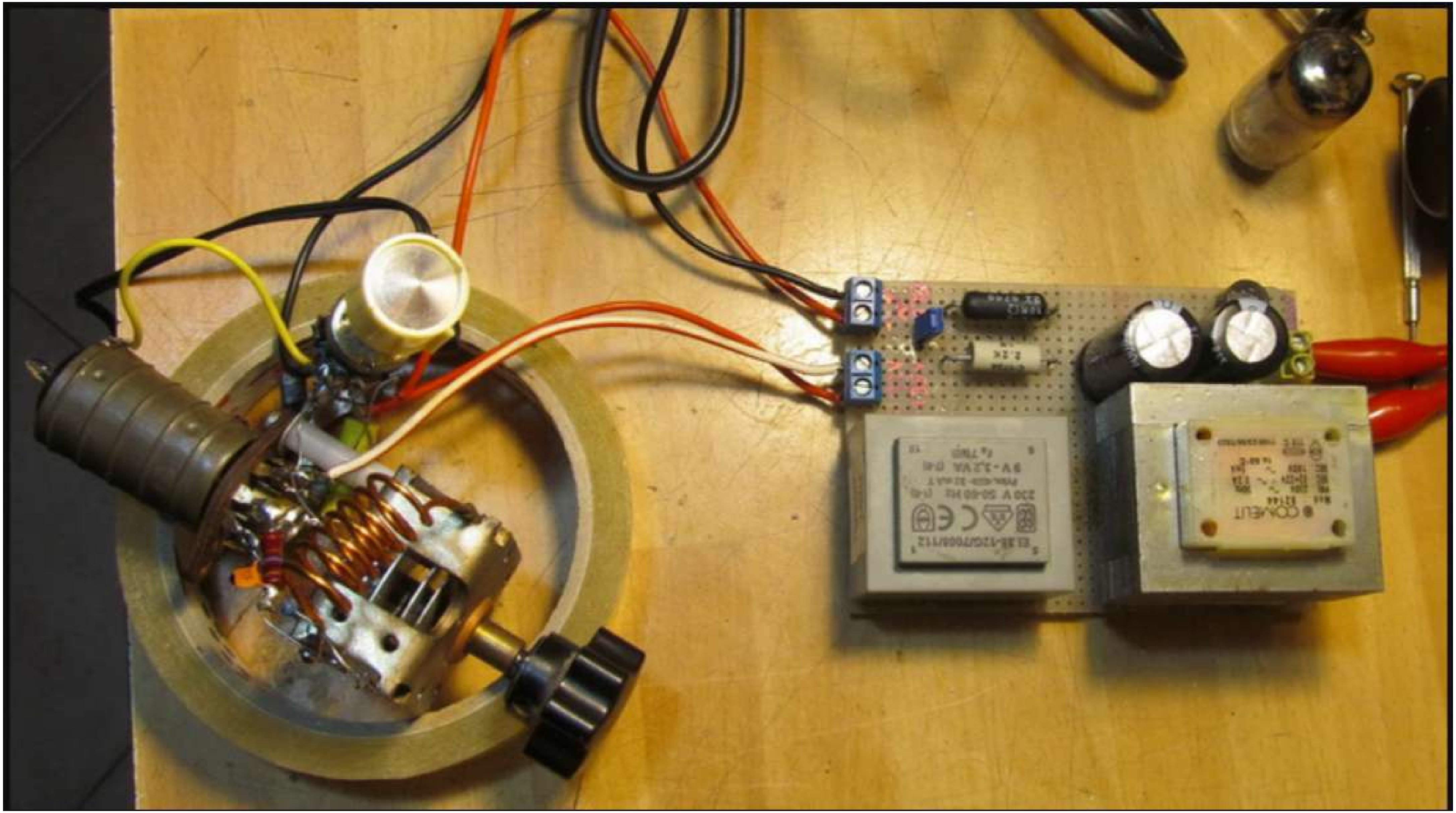
Superreaction receiver with ECC81
Regenerative RX with 12AT7



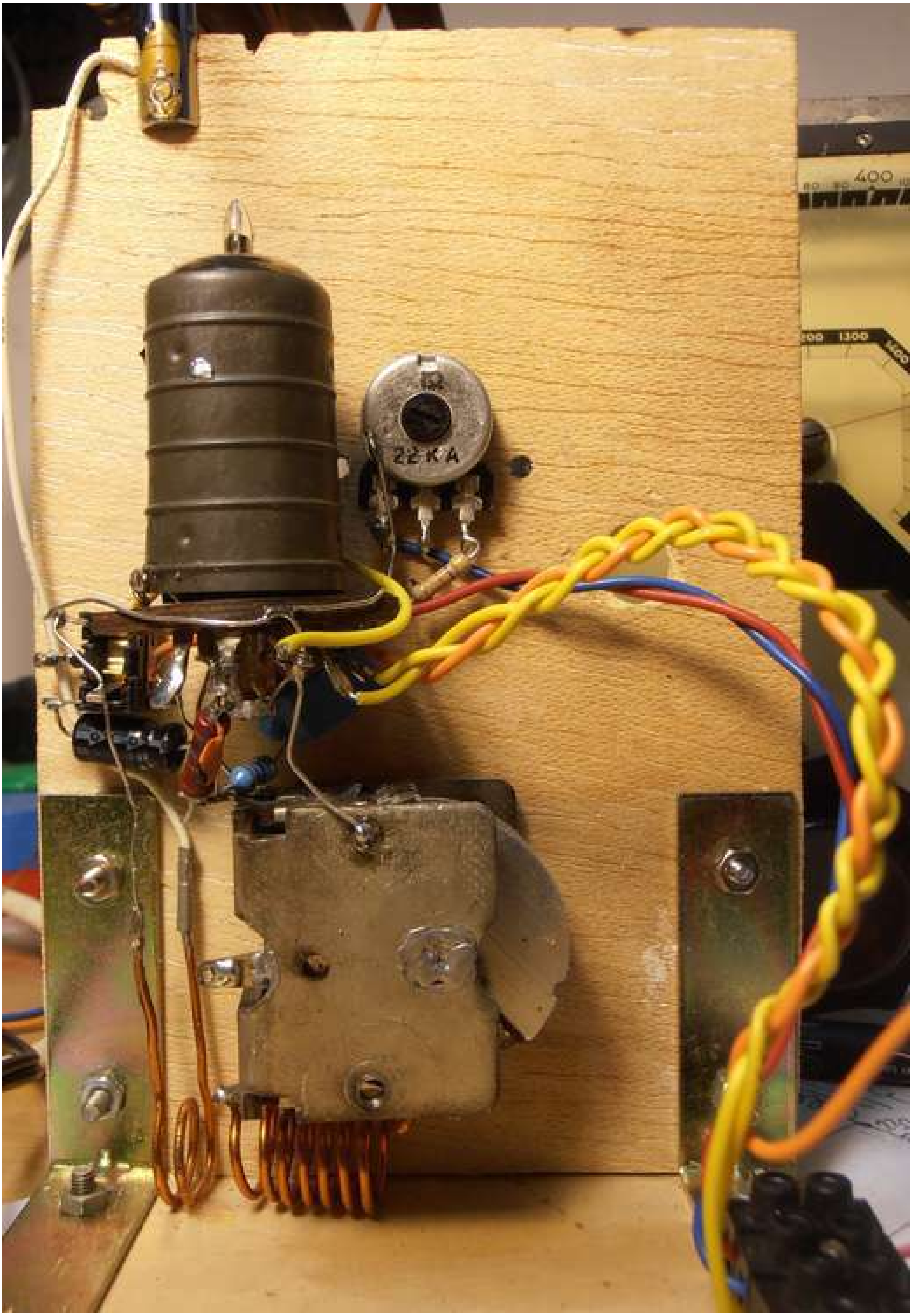
Ricevitore FM in super reazione con ECC81-12AT7

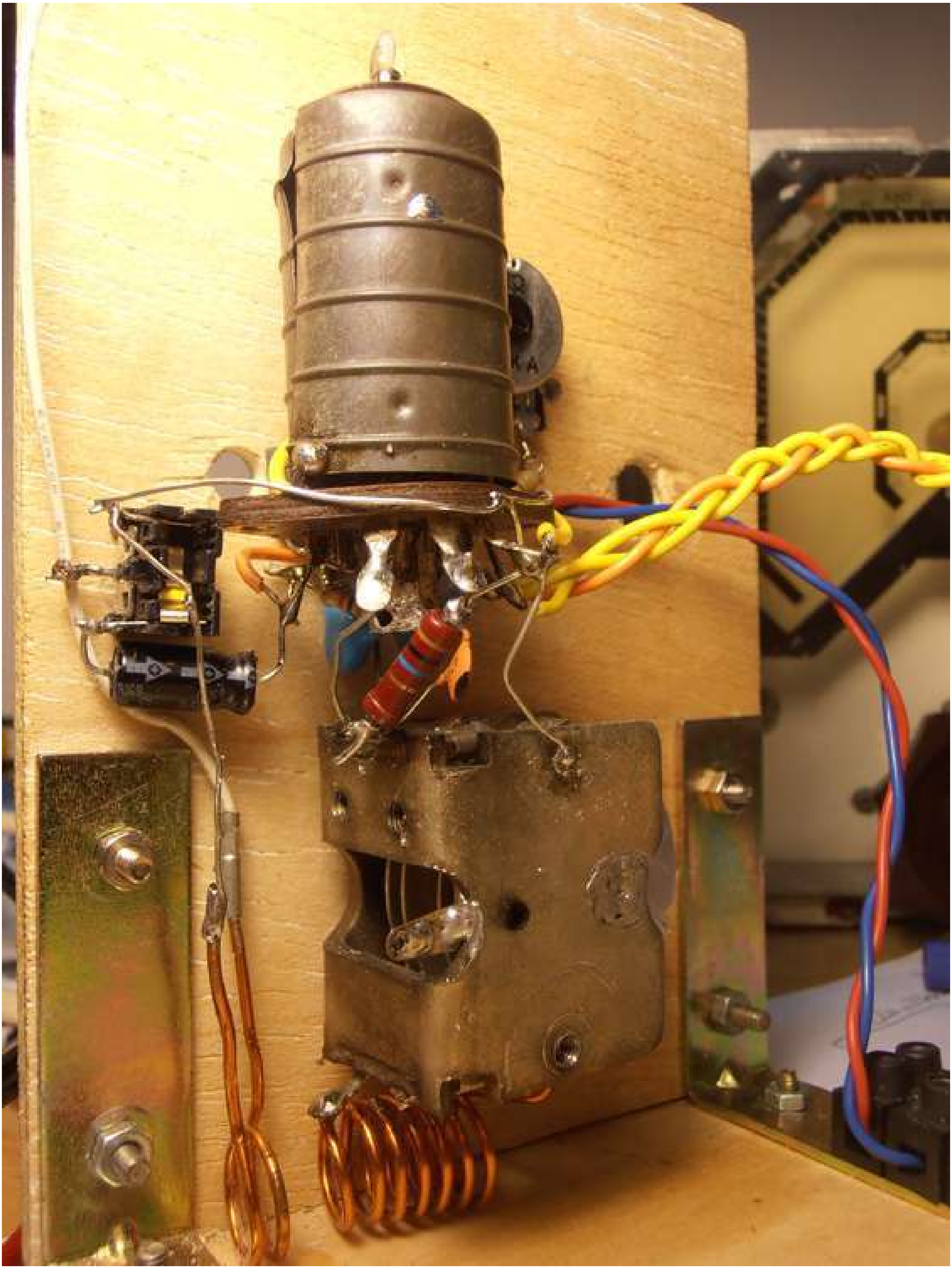

025331
11/02 P

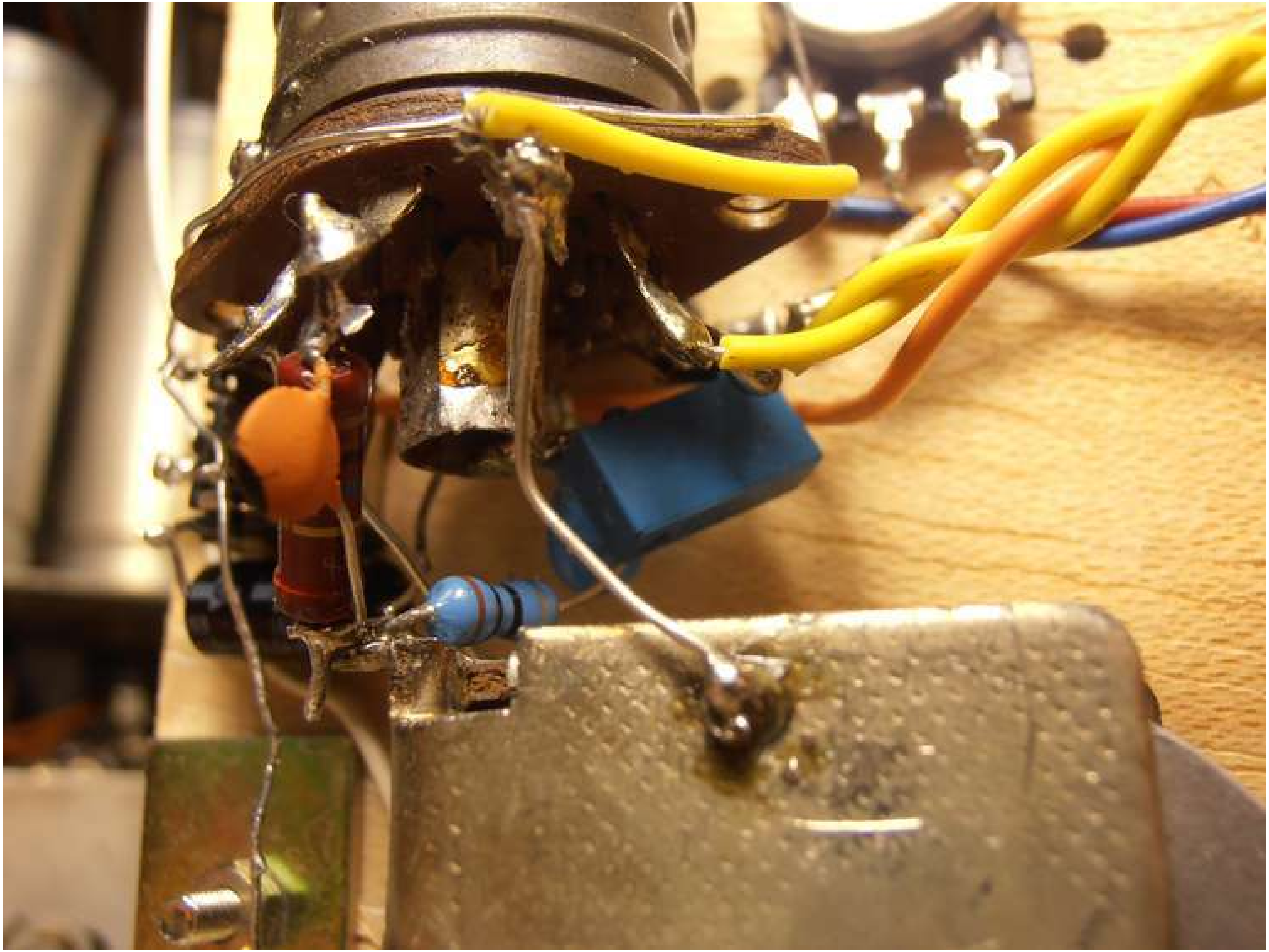

COMELIT
Mod.: 82144
PRI. 230V ~ 50Hz
SEC. 22+22V ~ 0.2A
SEC. 180V ~ 5mA
ta 60°C
115°C
1100/23/06/0323
5
EI 38-12G/7008/112
1
230 V 50-60 Hz (1-5)
Prim. 32 mA T
9 V - 3,2 VA (7-9)
6
ta 70/B
10
C-173A
2.2K
10KΩ

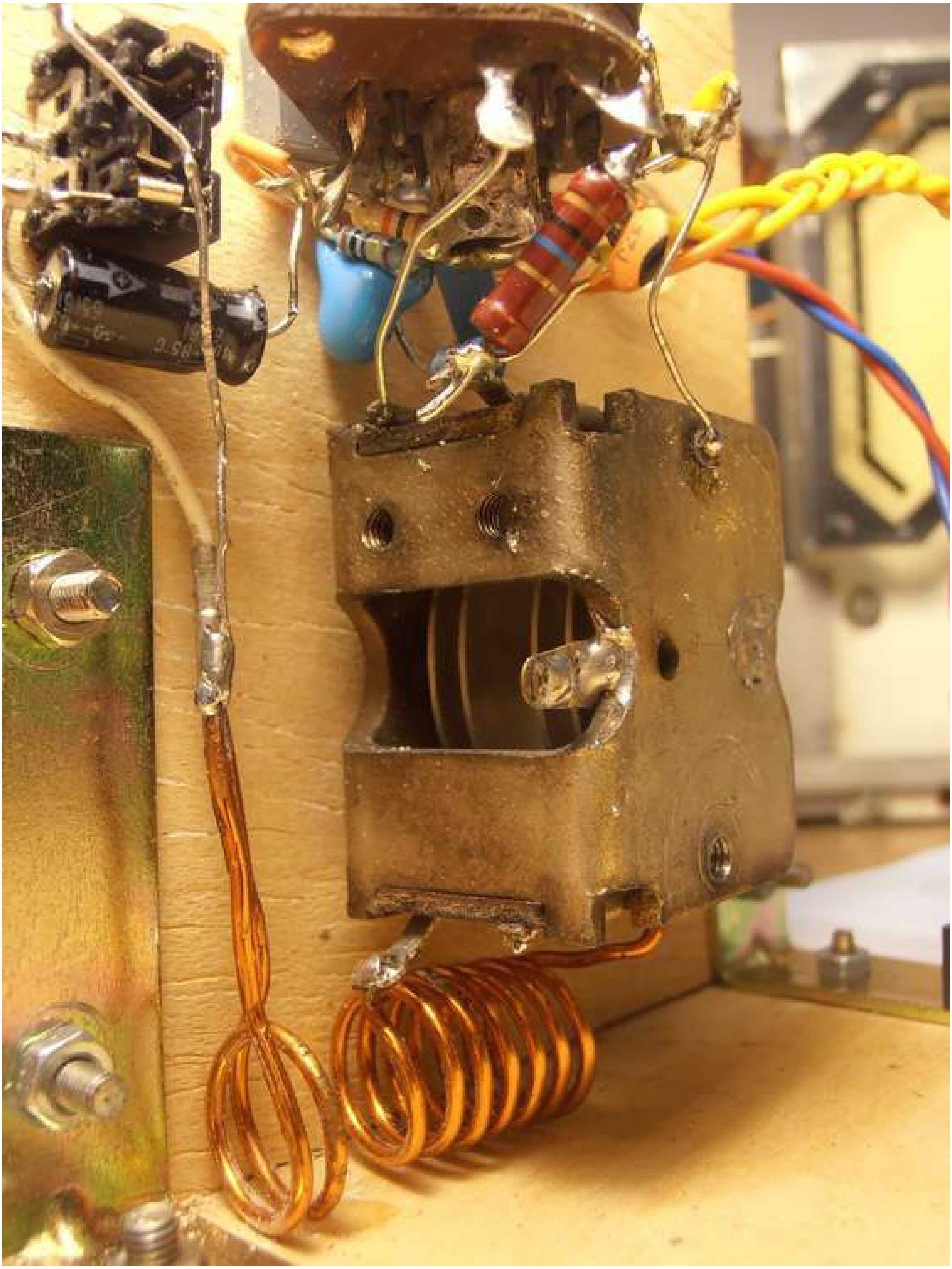


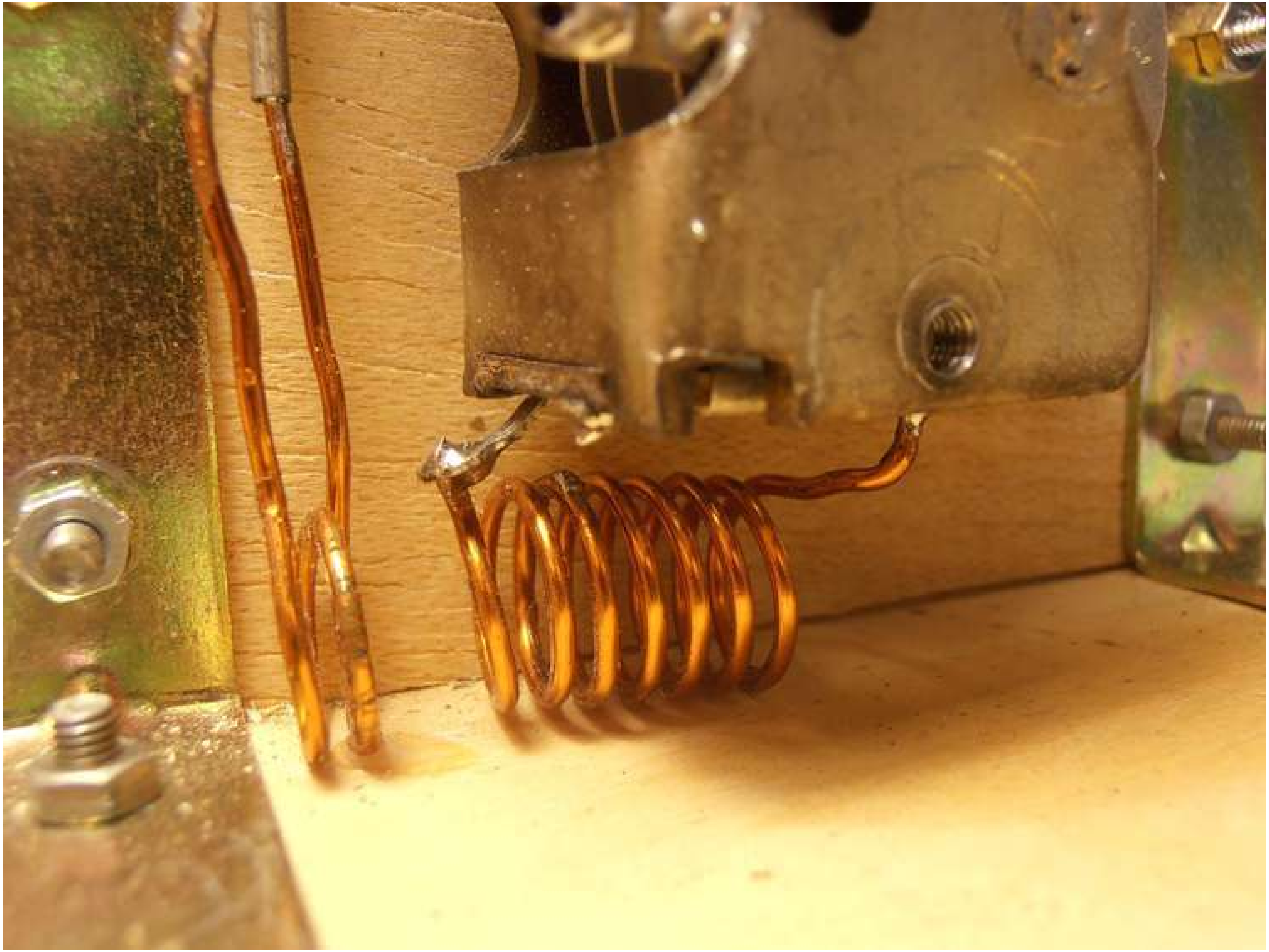

VOLUME

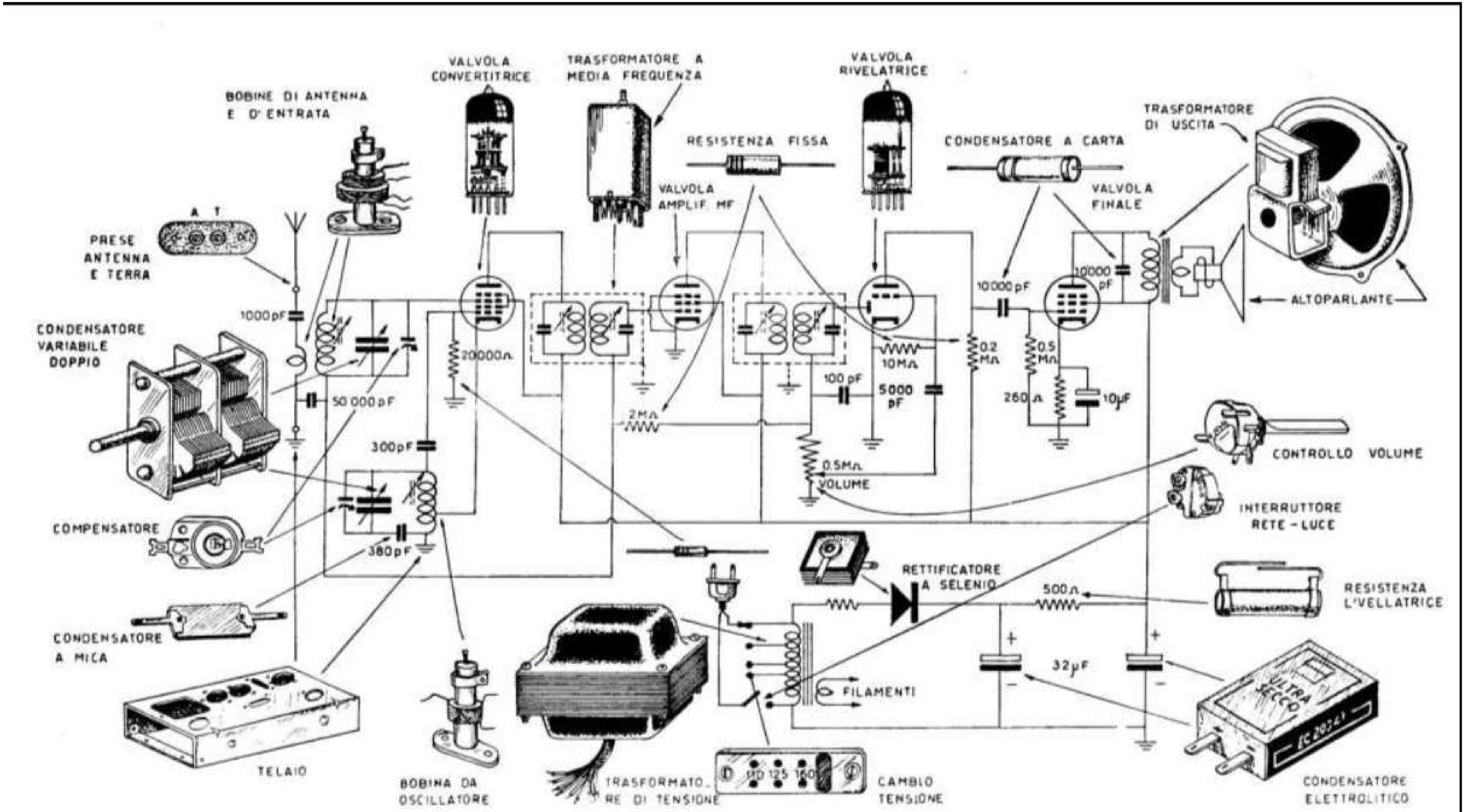

400
1300
22K A





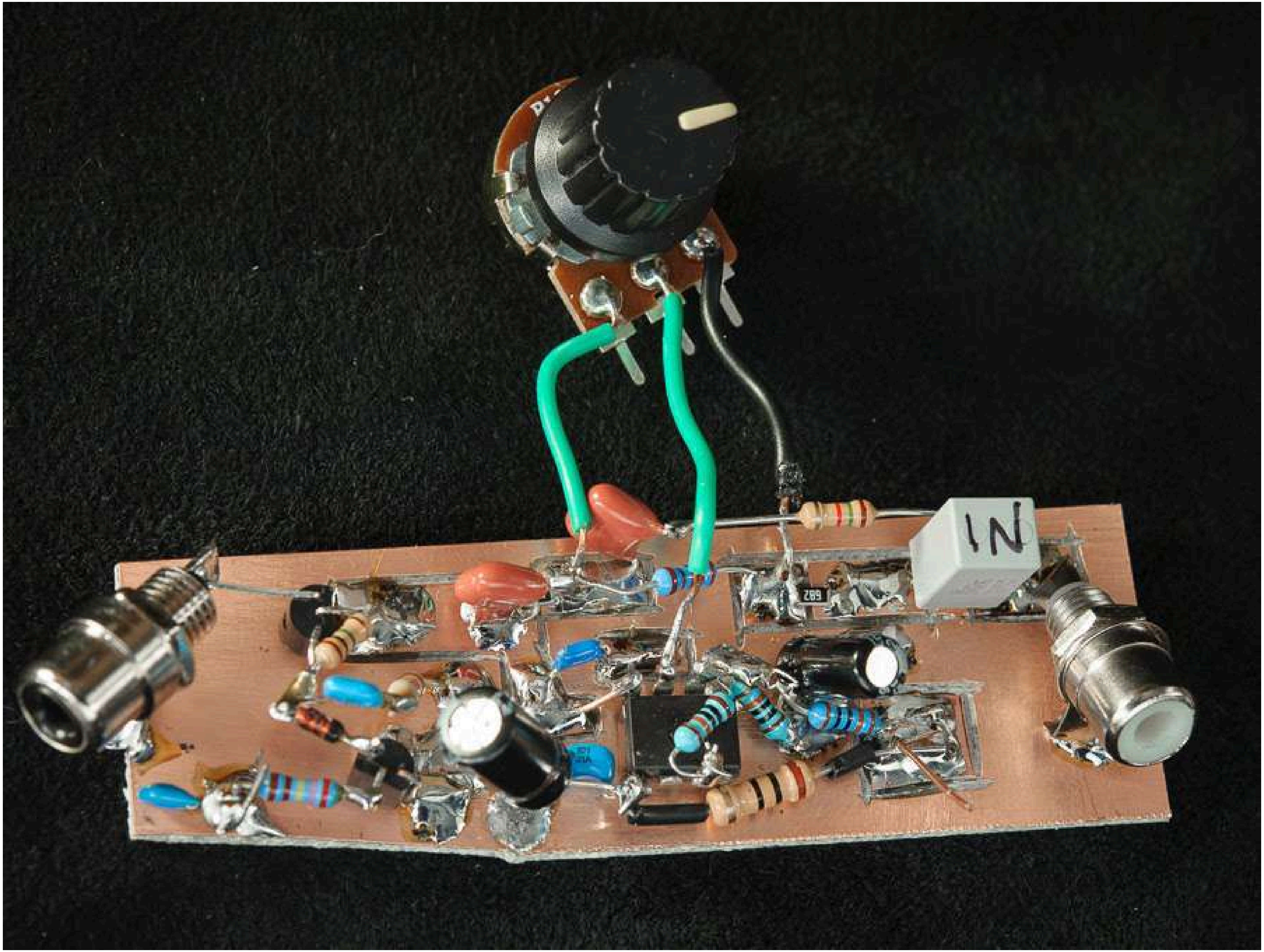




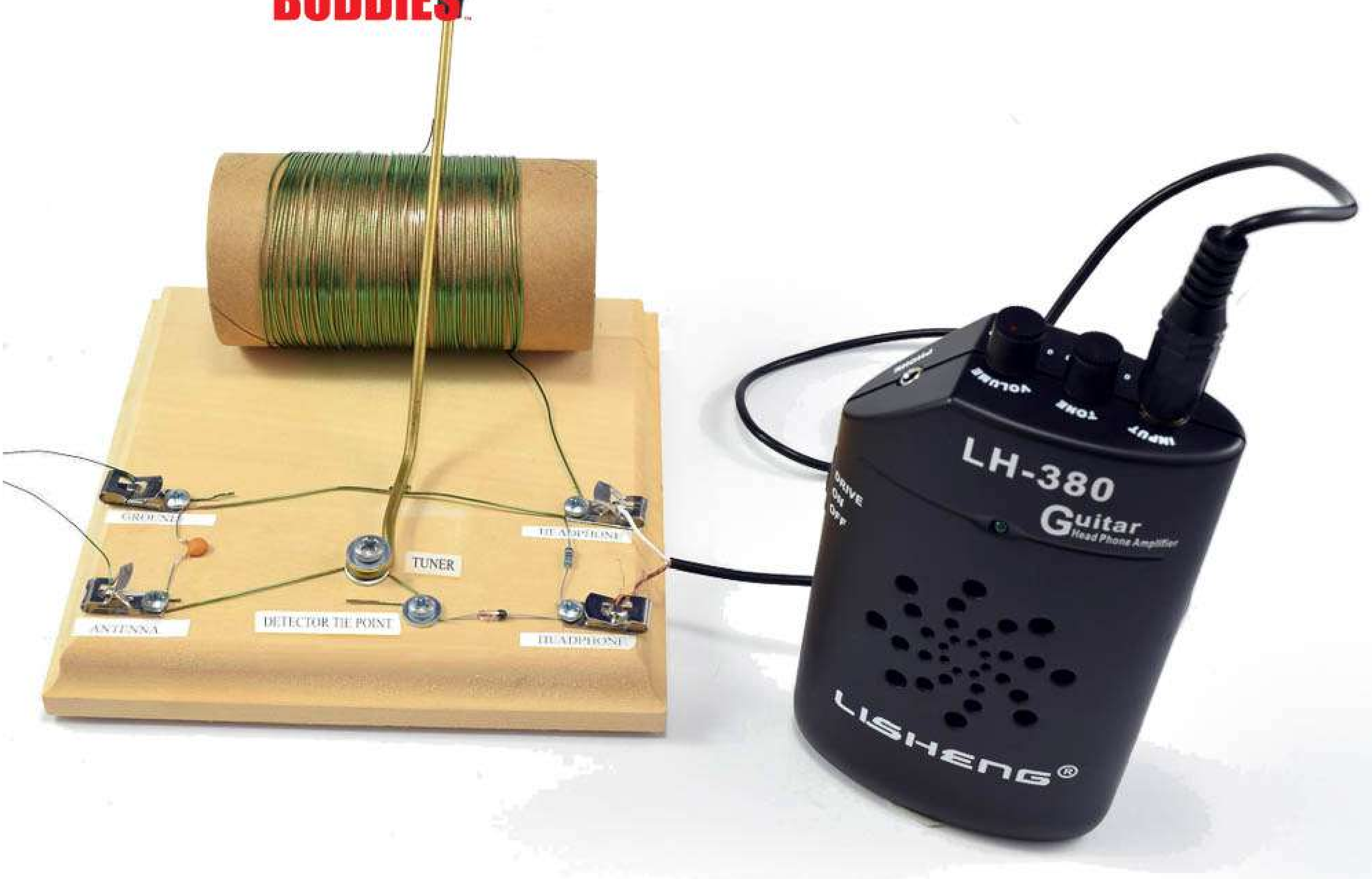

VALVOLA CONVERTITRICE
TRASFORMATORE A MEDIA FREQUENZA
VALVOLA RIVELATRICE
BOBINE DI ANTENNA E D'ENTRATA
RESISTENZA FISSA
CONDENSATORE A CARTA
TRASFORMATORE DI USCITA
A T
PRESE ANTENNA E TERRA
VALVOLA AMPLIF. MF
VALVOLA FINALE
1000 pF
CONDENSATORE VARIABILE DOPPIO
20000 Ω
10000 pF
10000 pF
ALTOPARLANTE
0.2 MΩ
0.5 MΩ
10 MΩ
50.000 pF
100 pF
5000 pF
260 Ω
10 μF
2 MΩ
300 pF
0.5 MΩ
VOLUME
CONTROLLO VOLUME
COMPENSATORE
INTERRUTTORE RETE - LUCE
380 pF
RETTIFICATORE A SELENIO
500 Ω
RESISTENZA L'VELLATRICE
CONDENSATORE A MICA
32 μF
FILAMENTI
TELAIO
BOBINA DA OSCILLATORE
TRASFORMATORE DI TENSIONE
110 125 160
CAMBIO TENSIONE
ULTRA SECCO
CONDENSATORE ELETTROLITICO

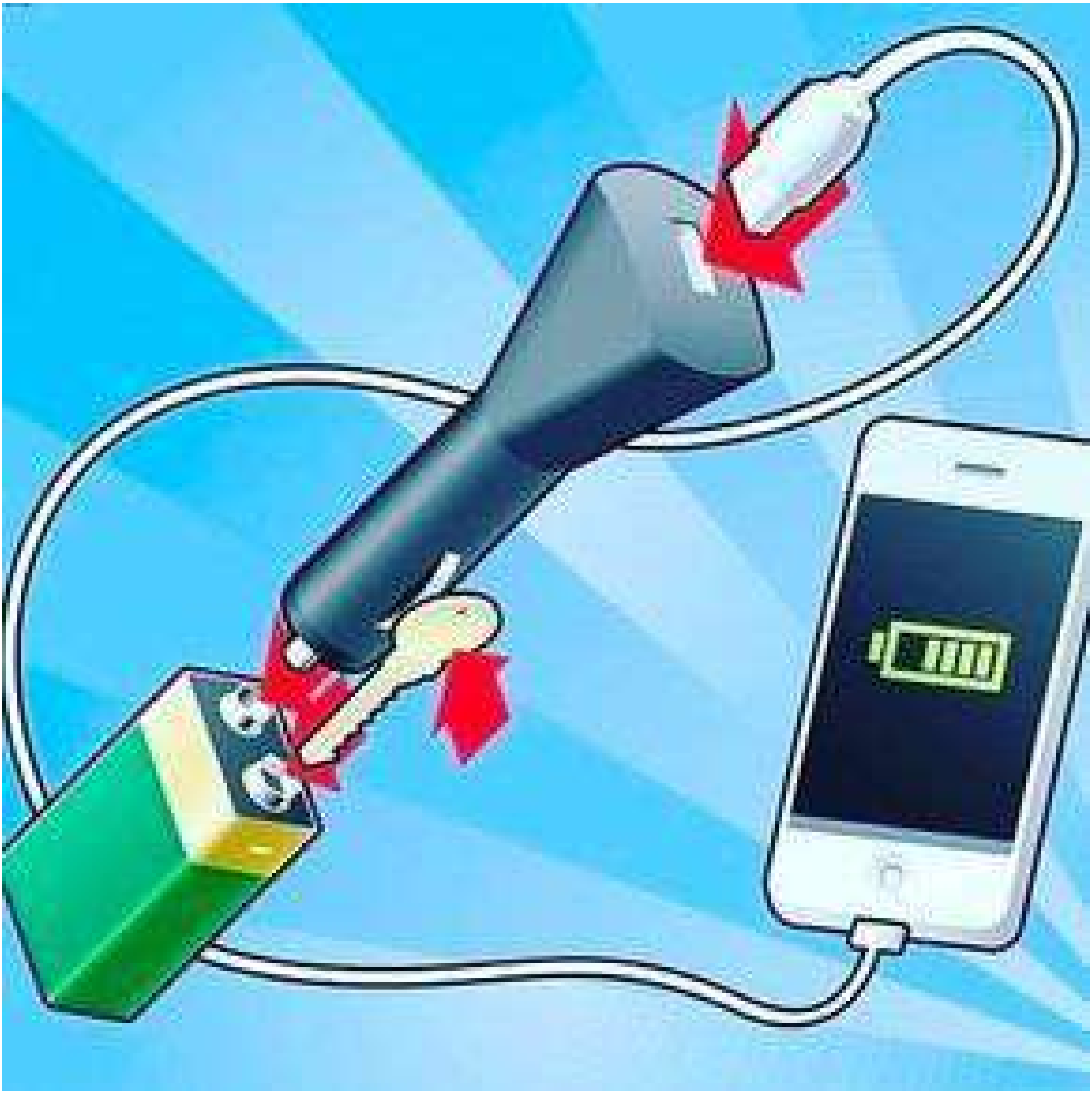
What will happen to a human if he gets a lightning strike? Will Nikita get some extrasensory power?

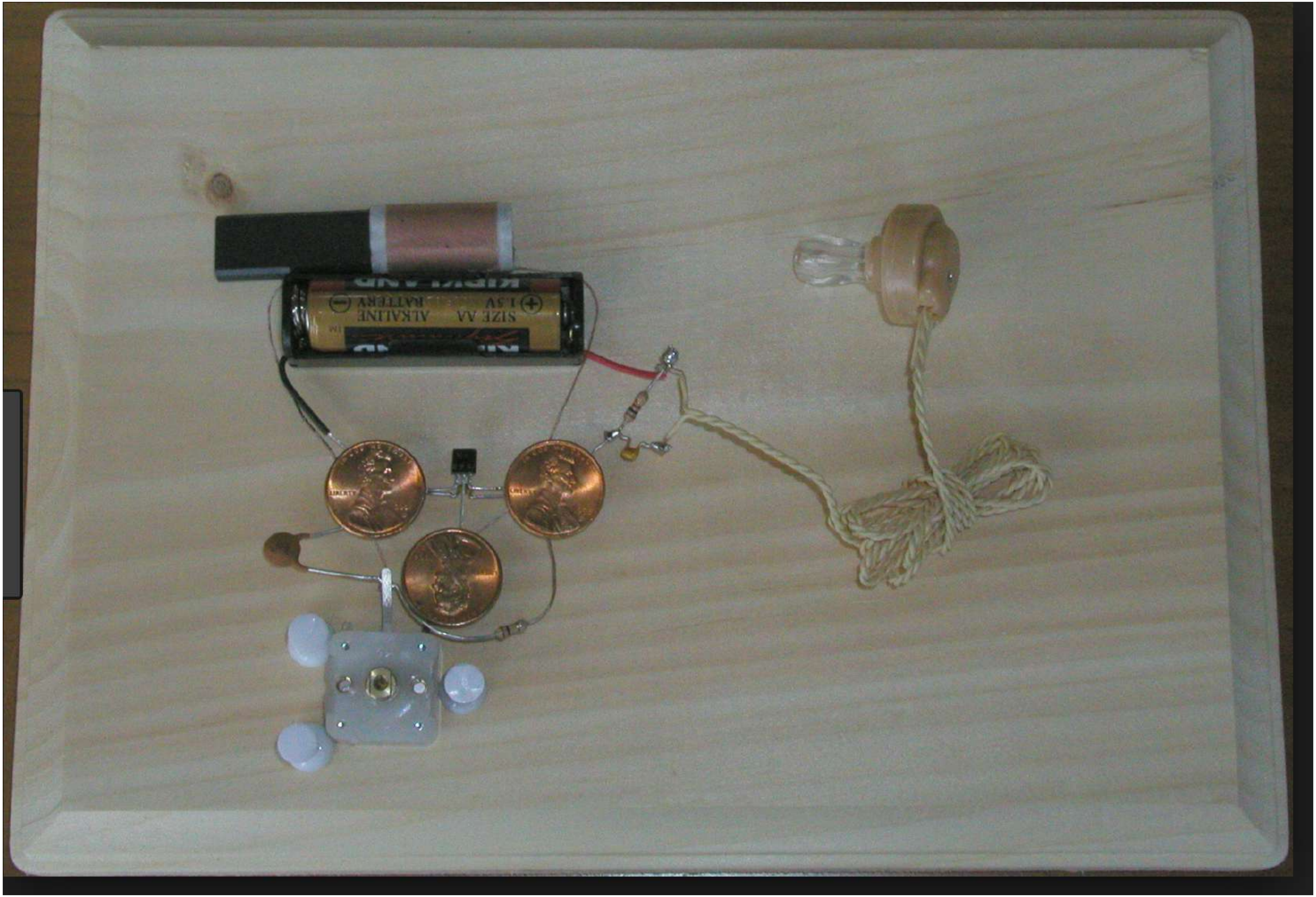
What will happen to a human if he gets a lightning strike? Will Nikita get some extrasensory power?

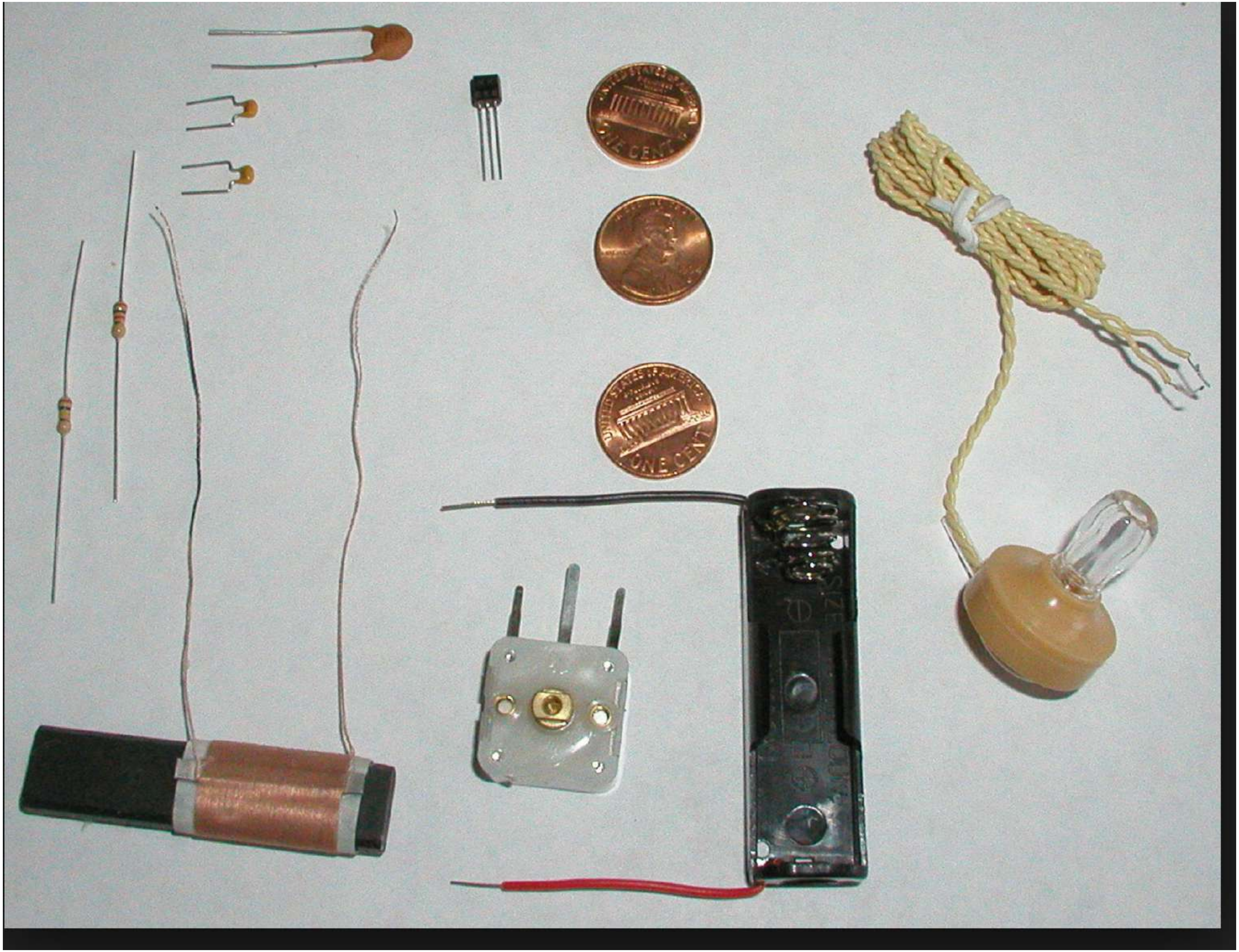

IN

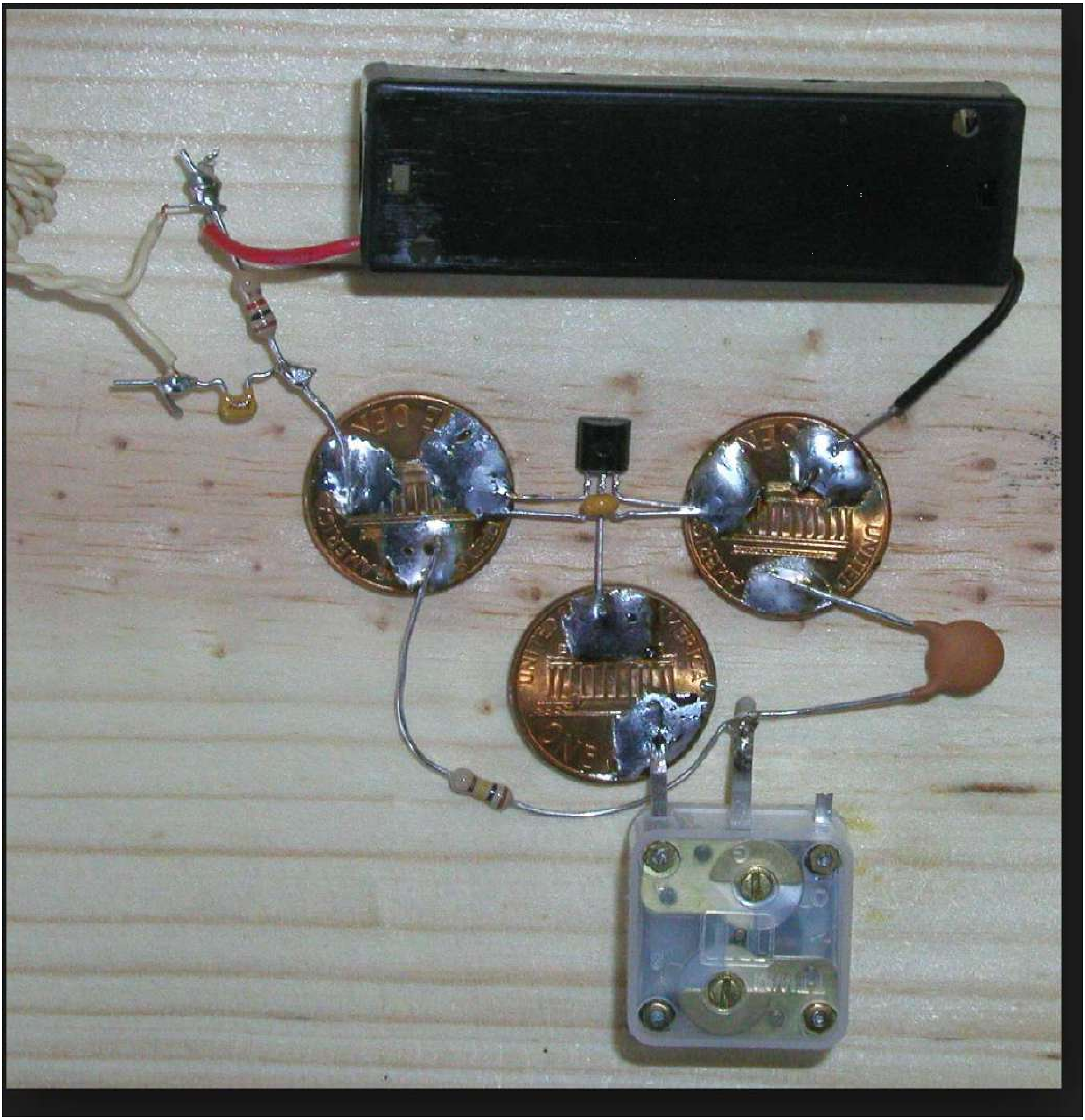
SCIENCE BUDDIES

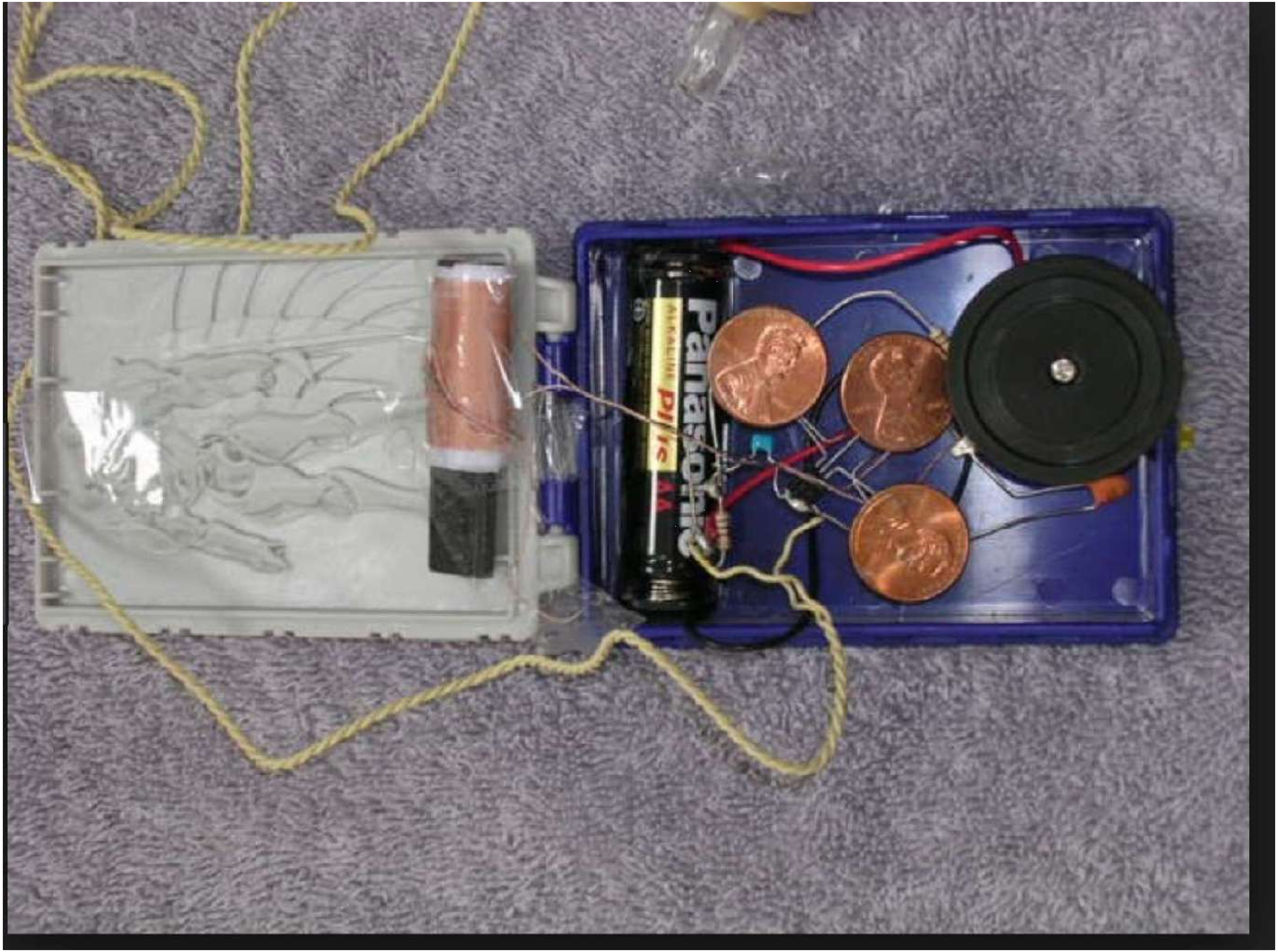


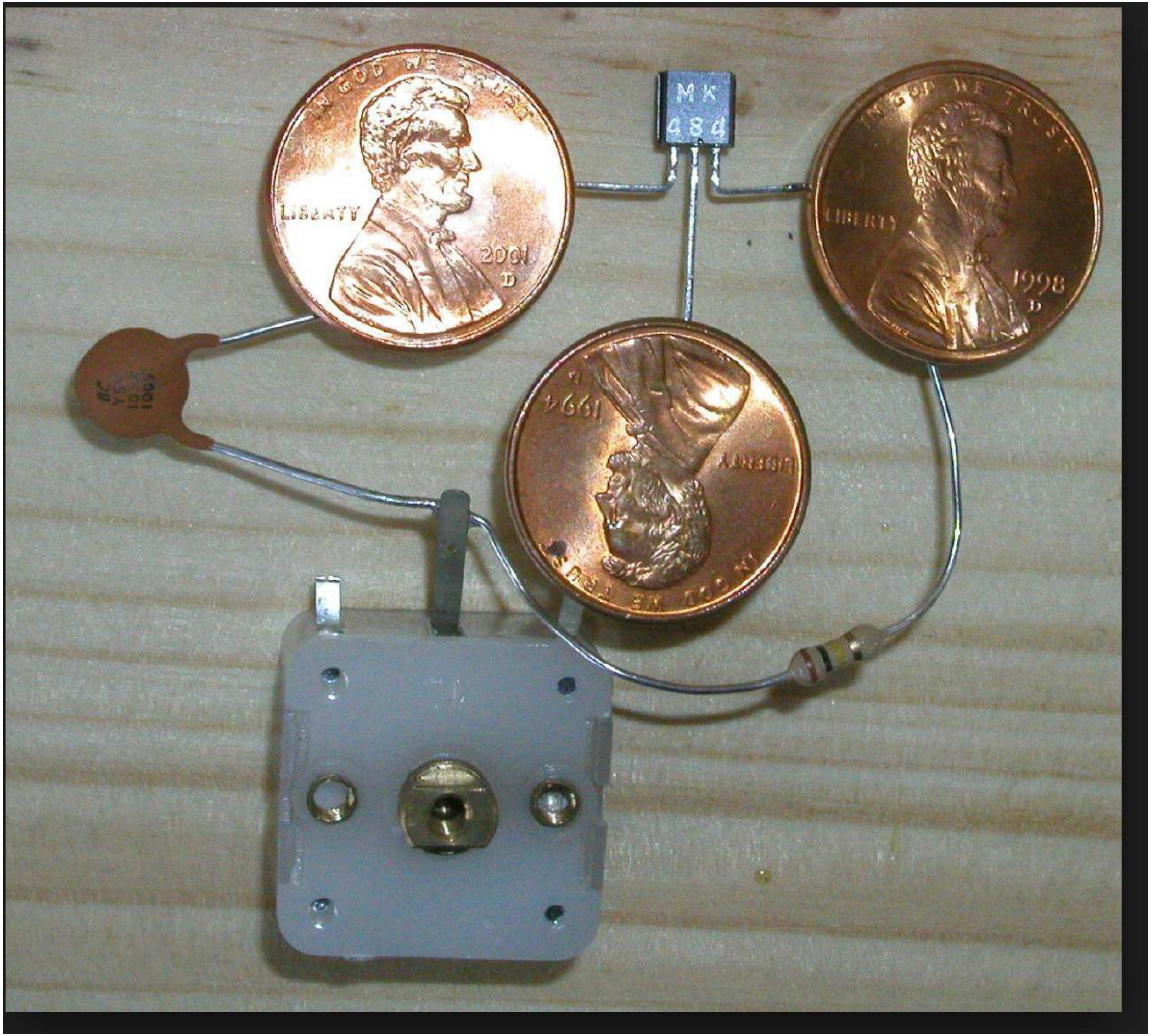


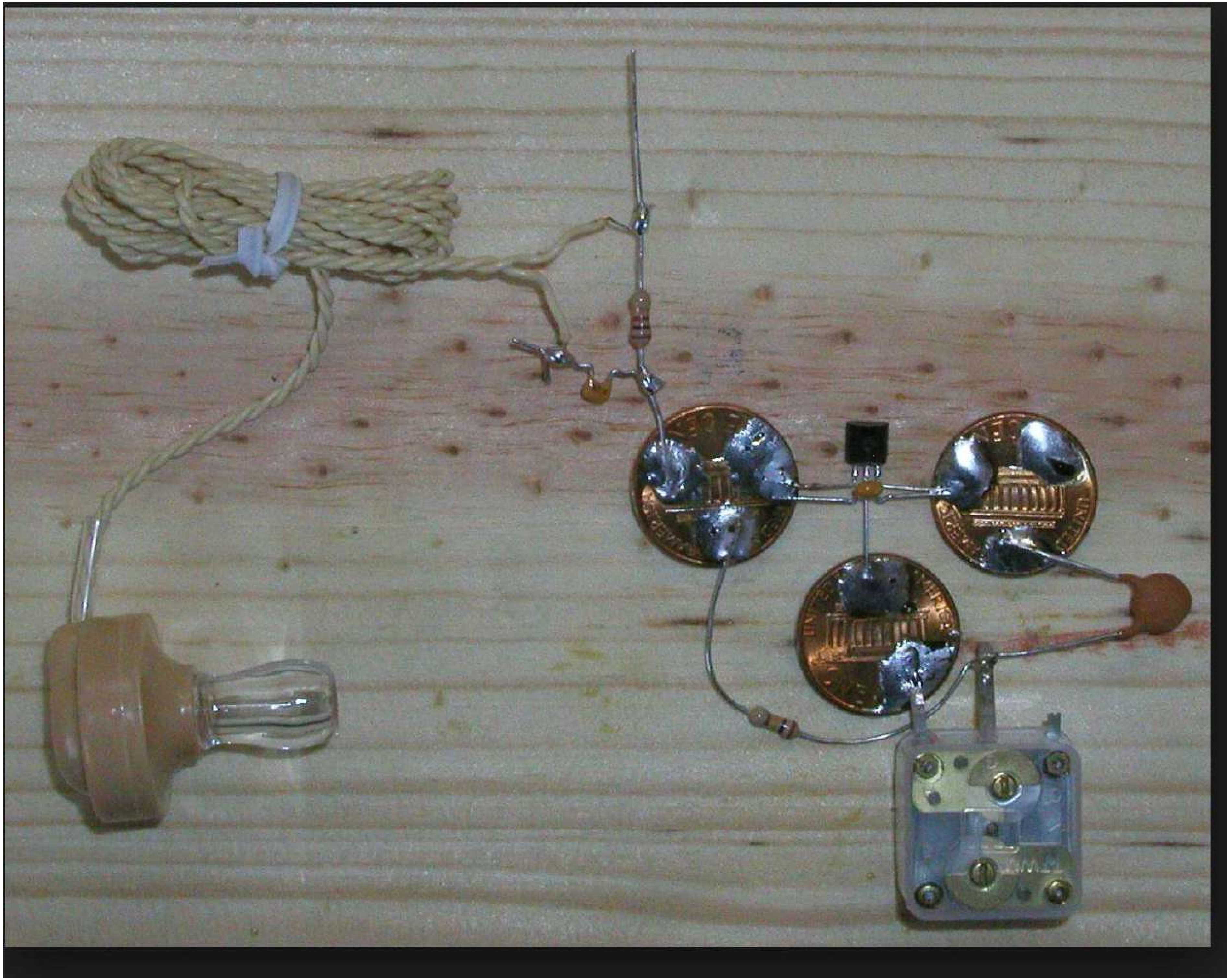

SIZE AA
1.5V
ALKALINE
BATTERY

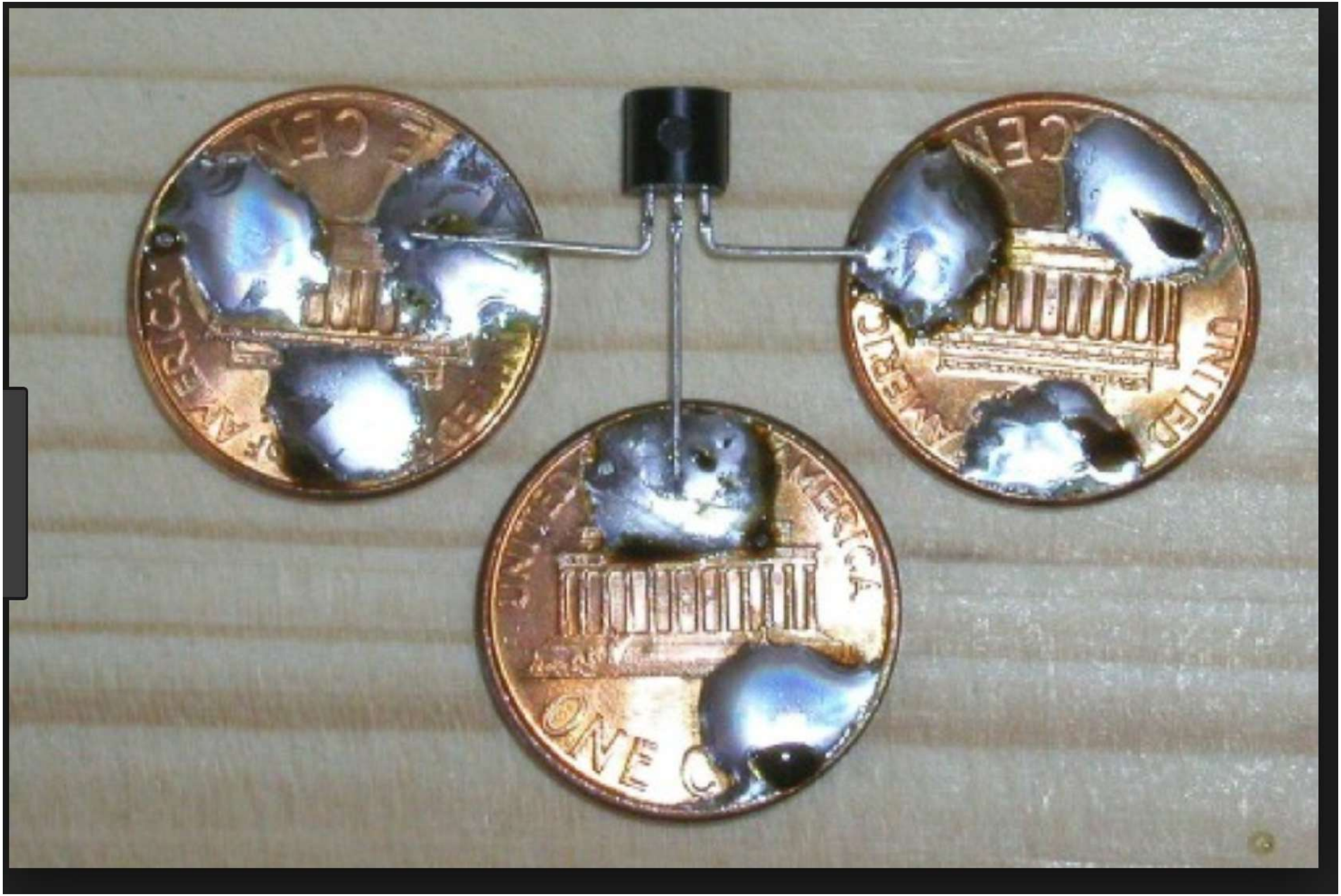

ONE CENT

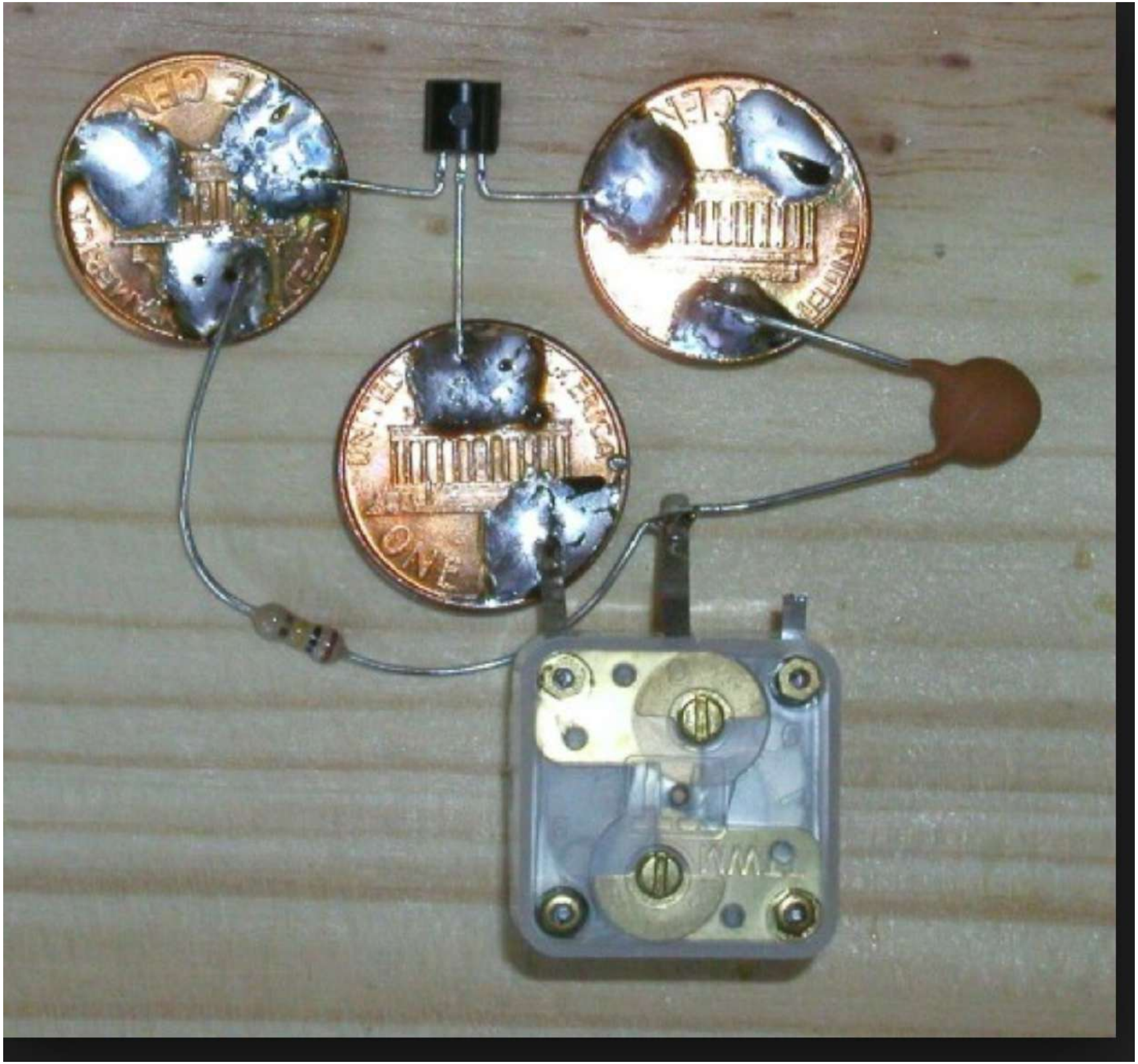


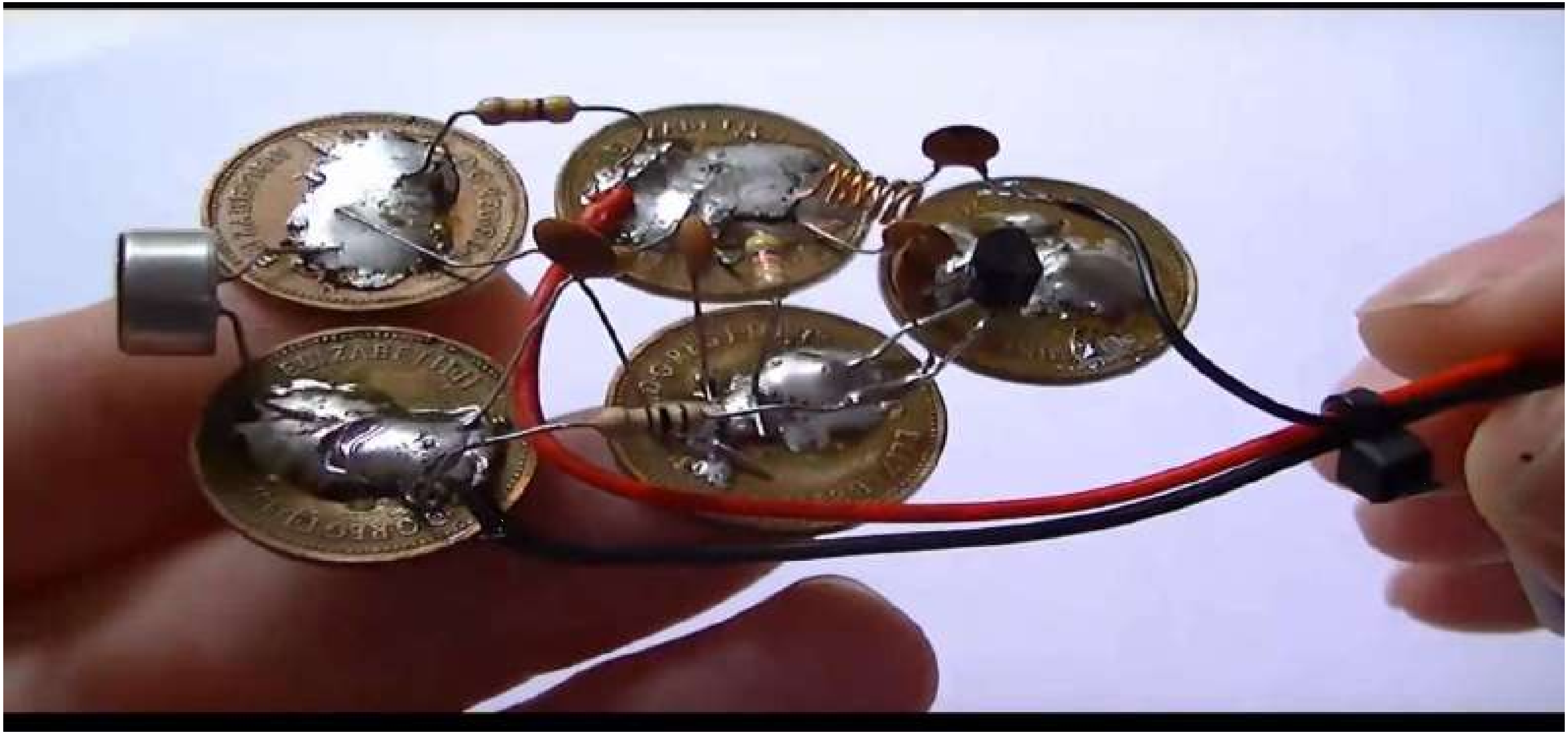

Panasonic
ALKALINE Plus
AA

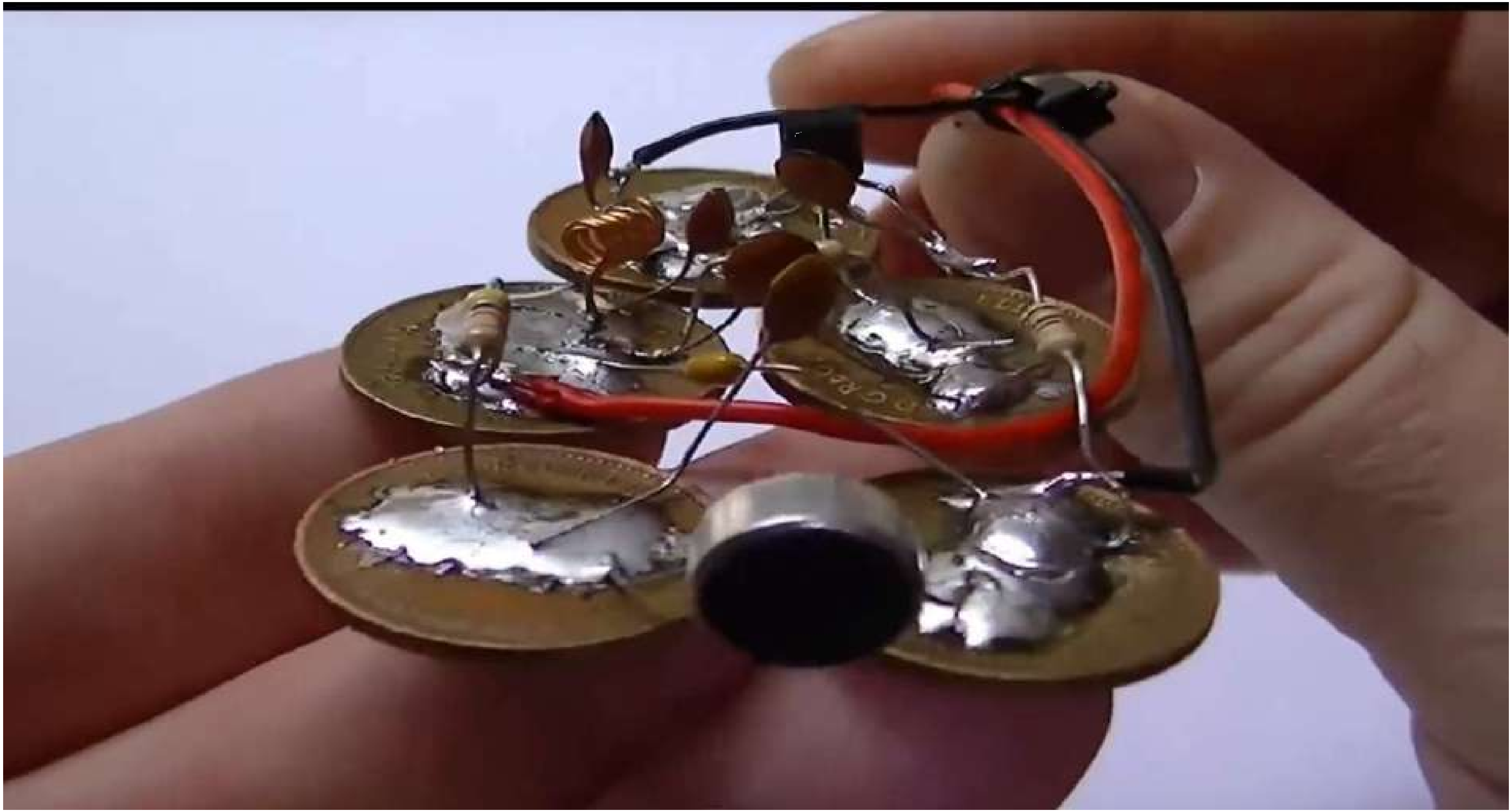

MK
484
IN GOD WE TRUST
LIBERTY
2001
D
IN GOD WE TRUST
LIBERTY
1998
D

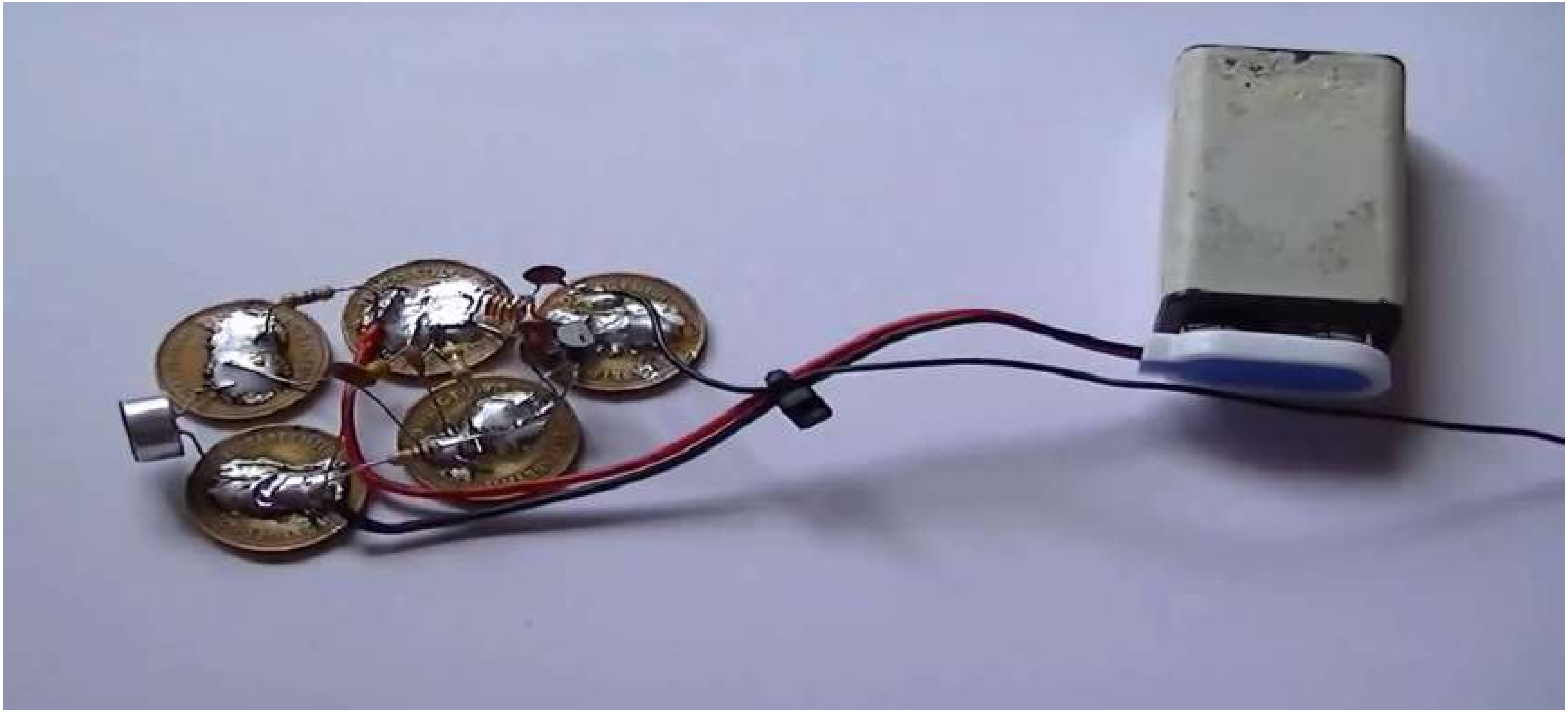



UNITED

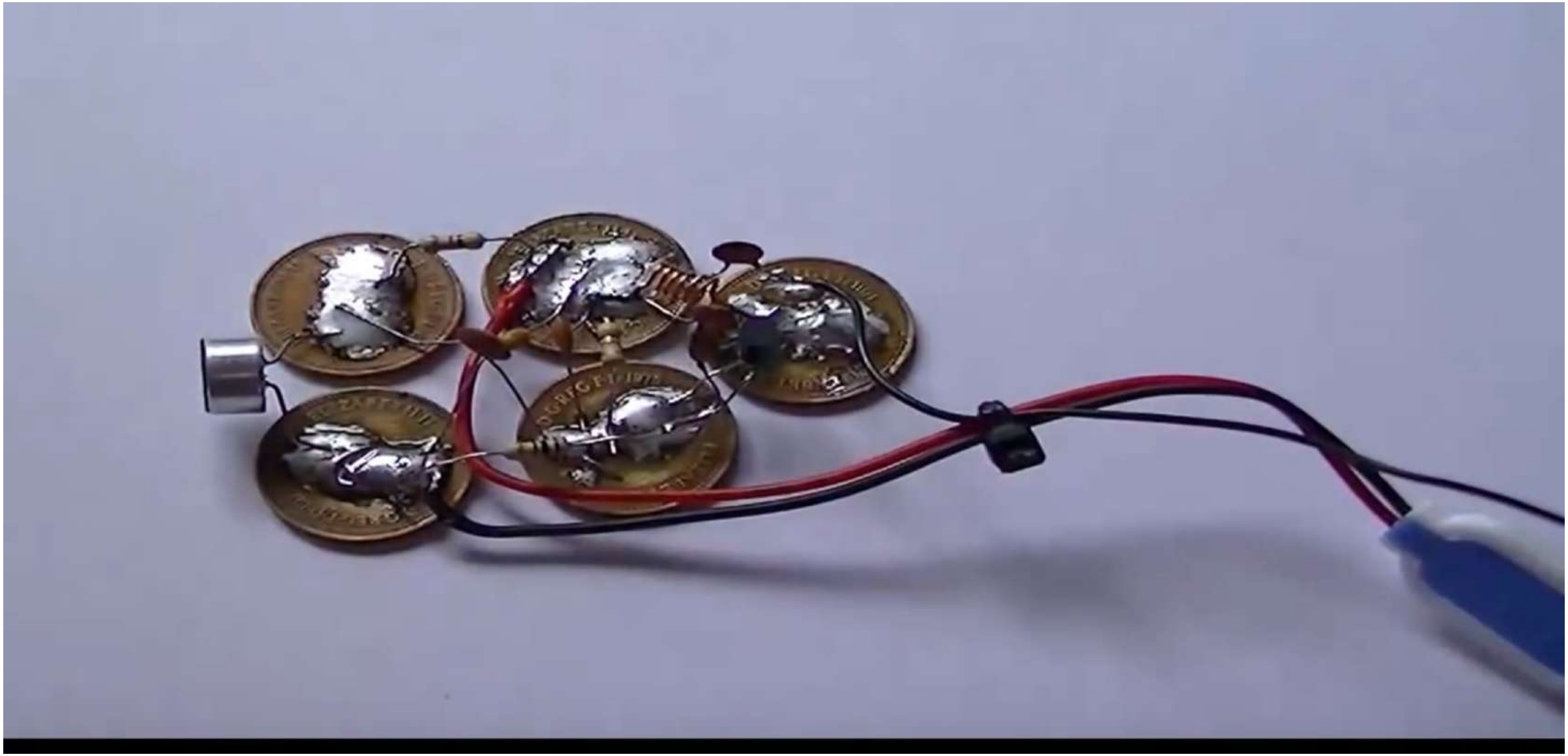


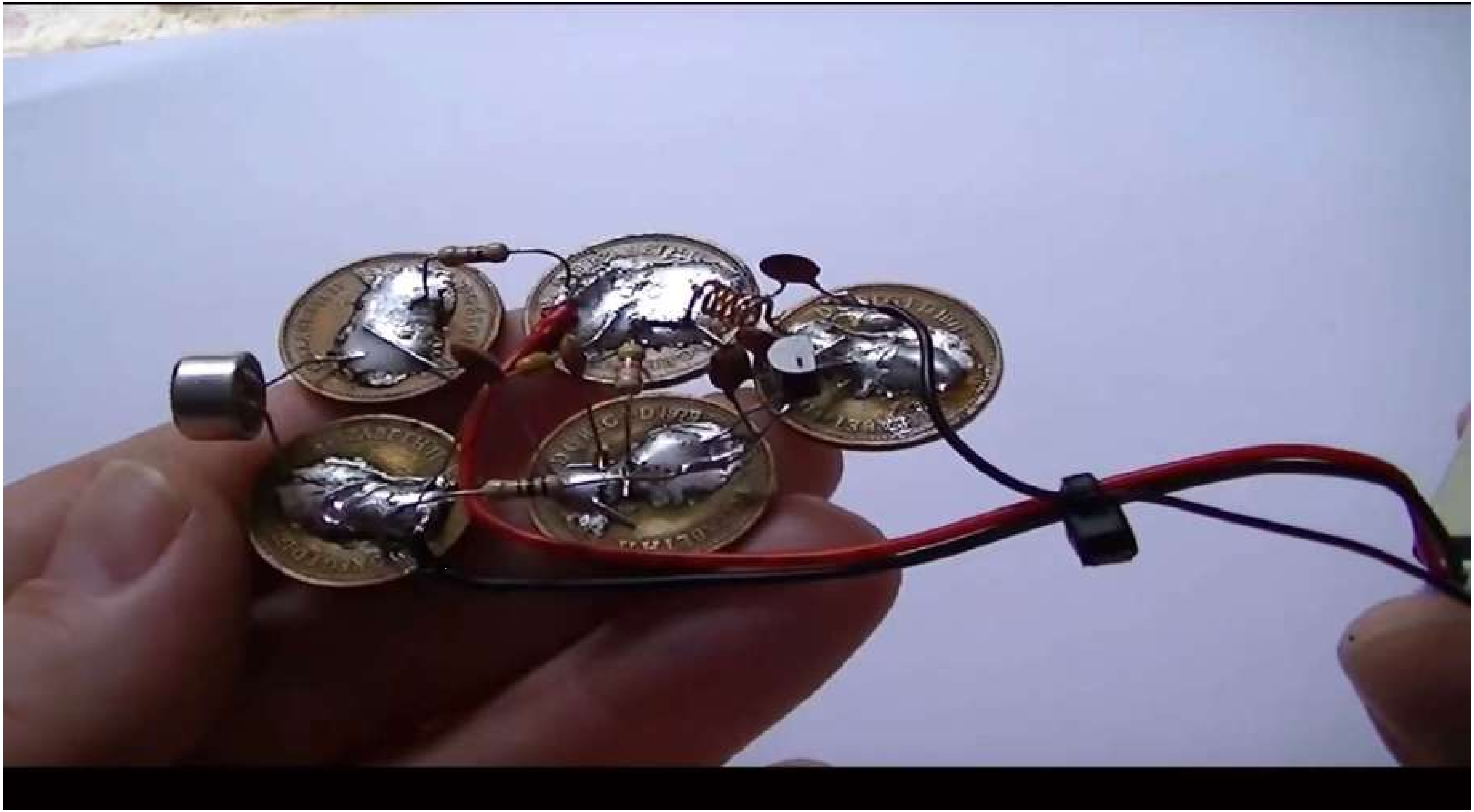


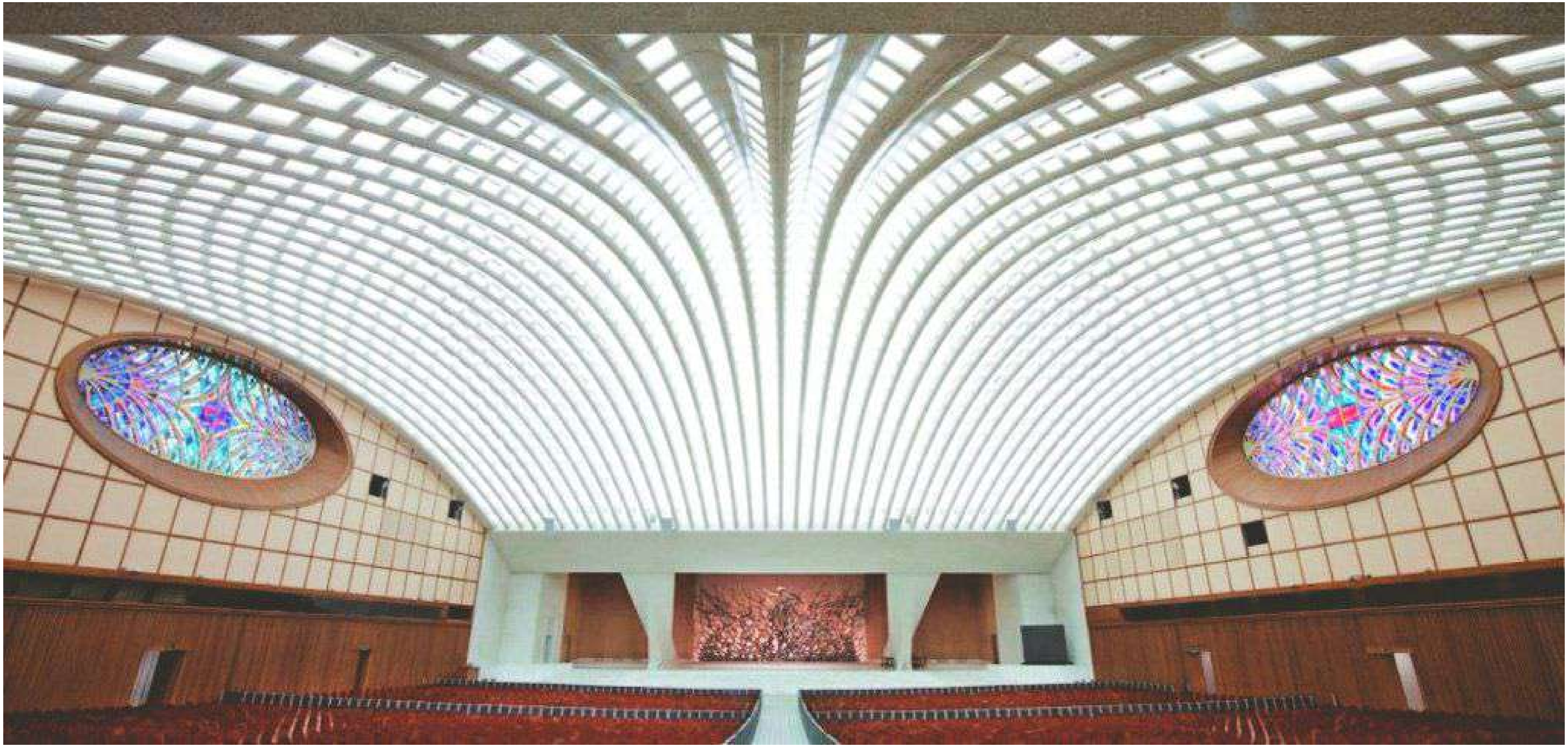


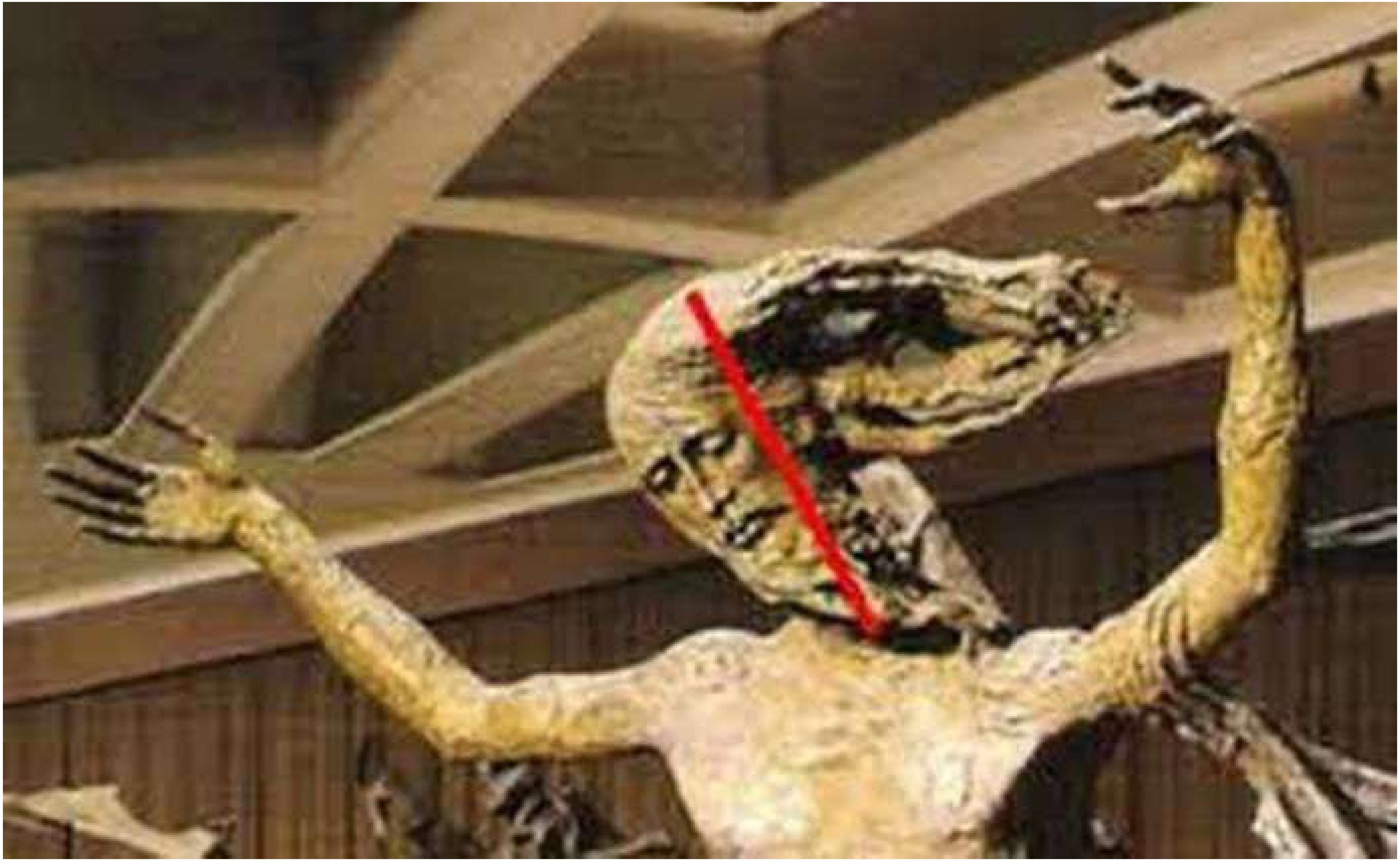



GOOIT
Frequency Counter
Multikey










Francisco en Brasil 2013 OANNES

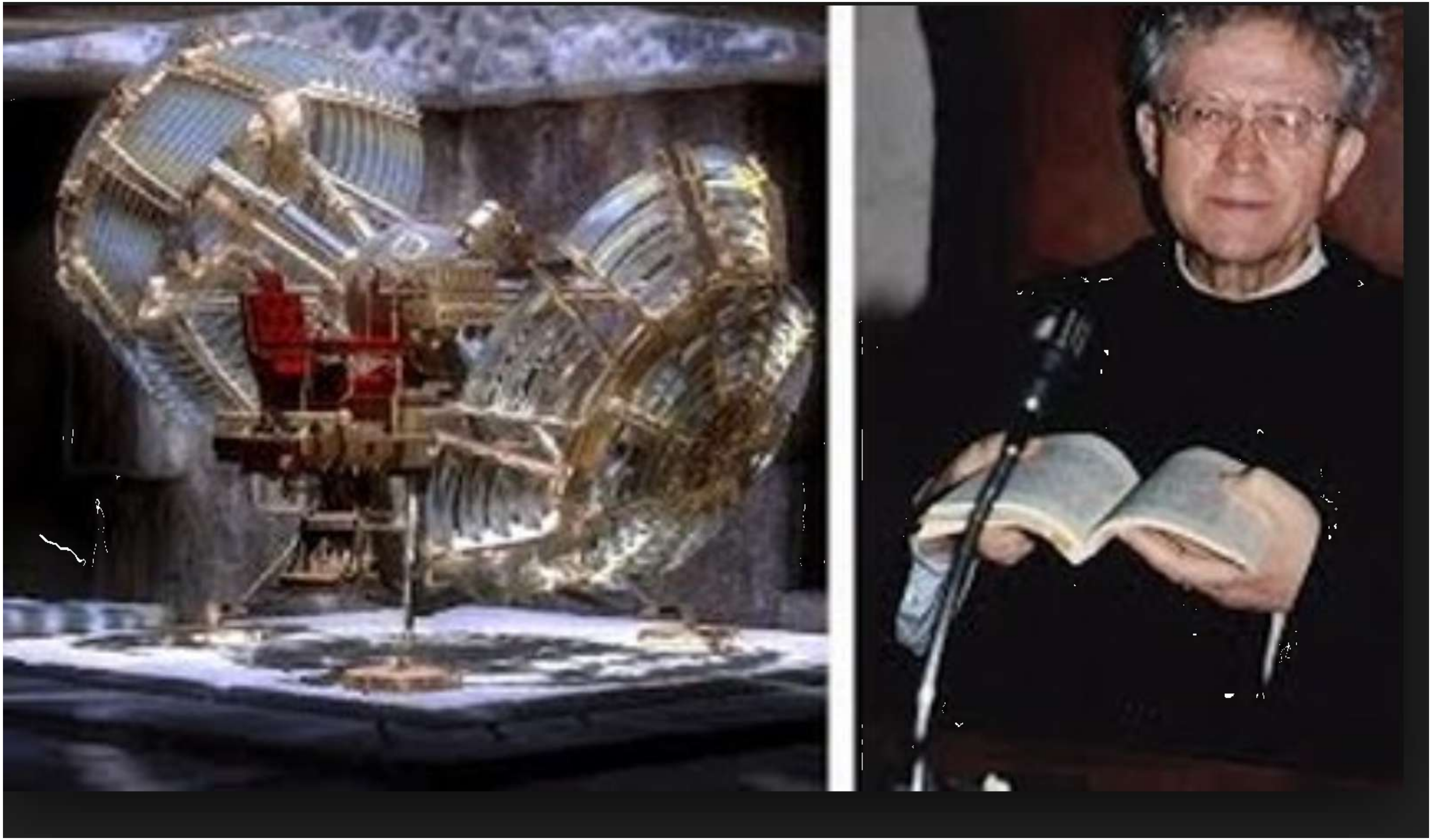
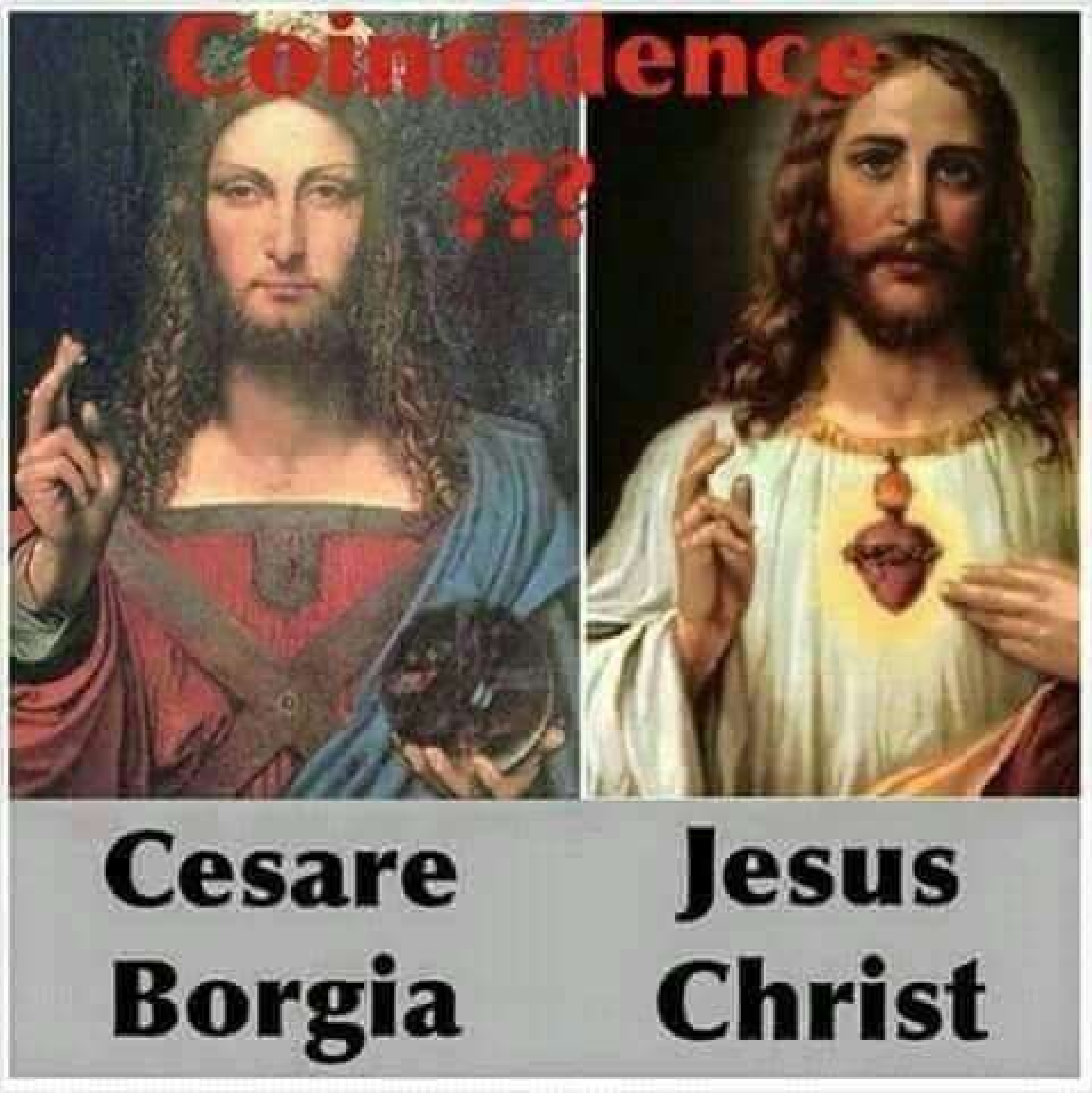
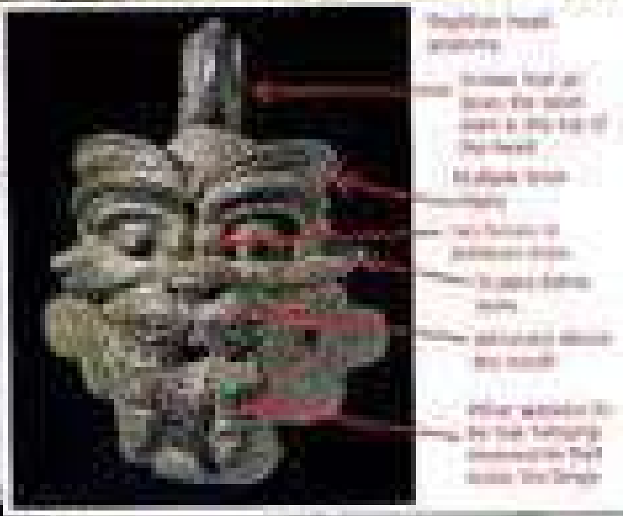
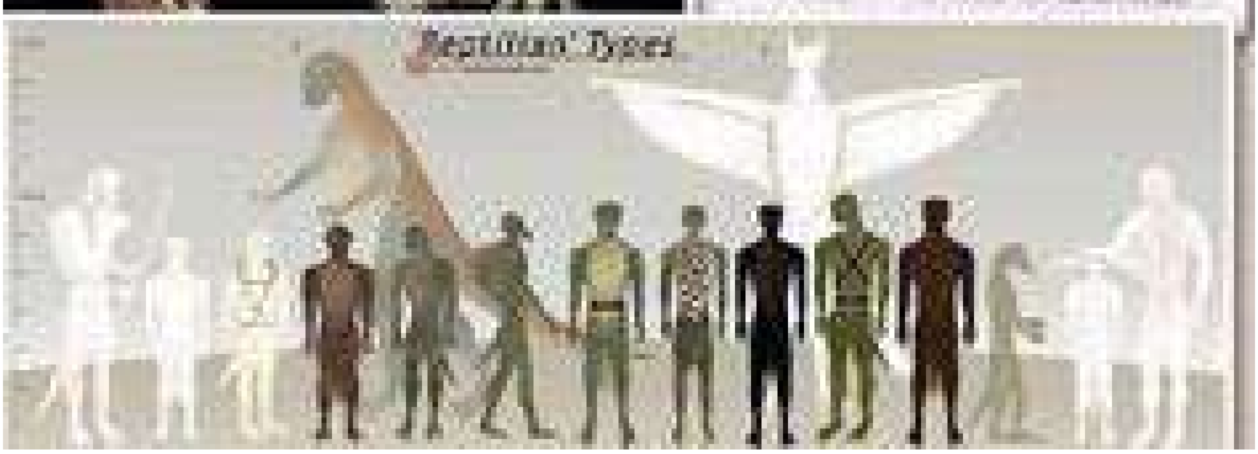


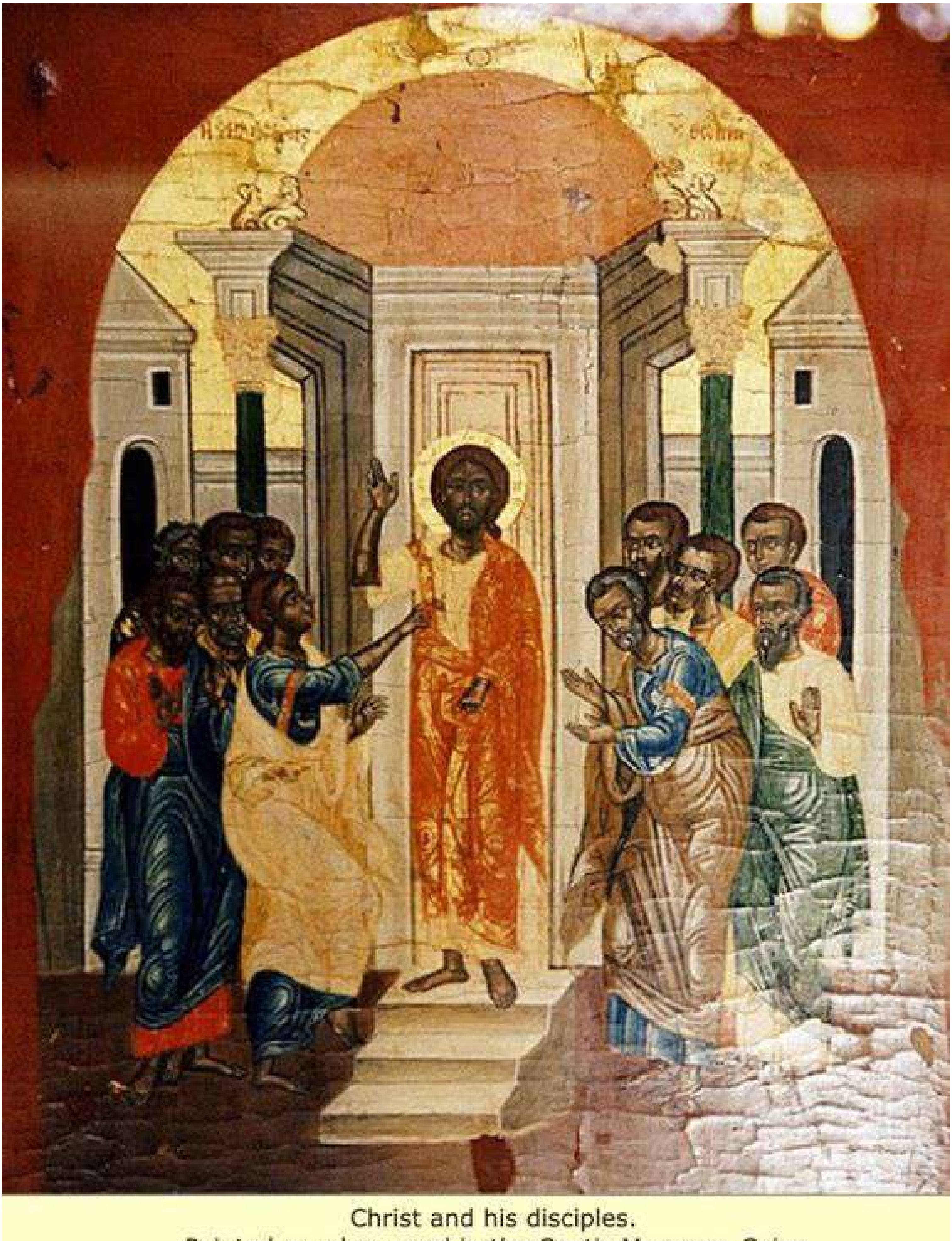
FIG.14C-3. - WARD HILL LAMON SITS IMMEDIATELY TO ABE'S RIGHT IN THE MOMENTS AFTER THE GETTYSBURG ADDRESS, NERVOUSLY SCANNING THE CROWD FOR VAMPIRE ASSASSINS. A CLOSER LOOK AT THE EDGE OF THE PHOTO SUGGESTS THAT HIS FEARS MAY HAVE BEEN JUSTIFIED.



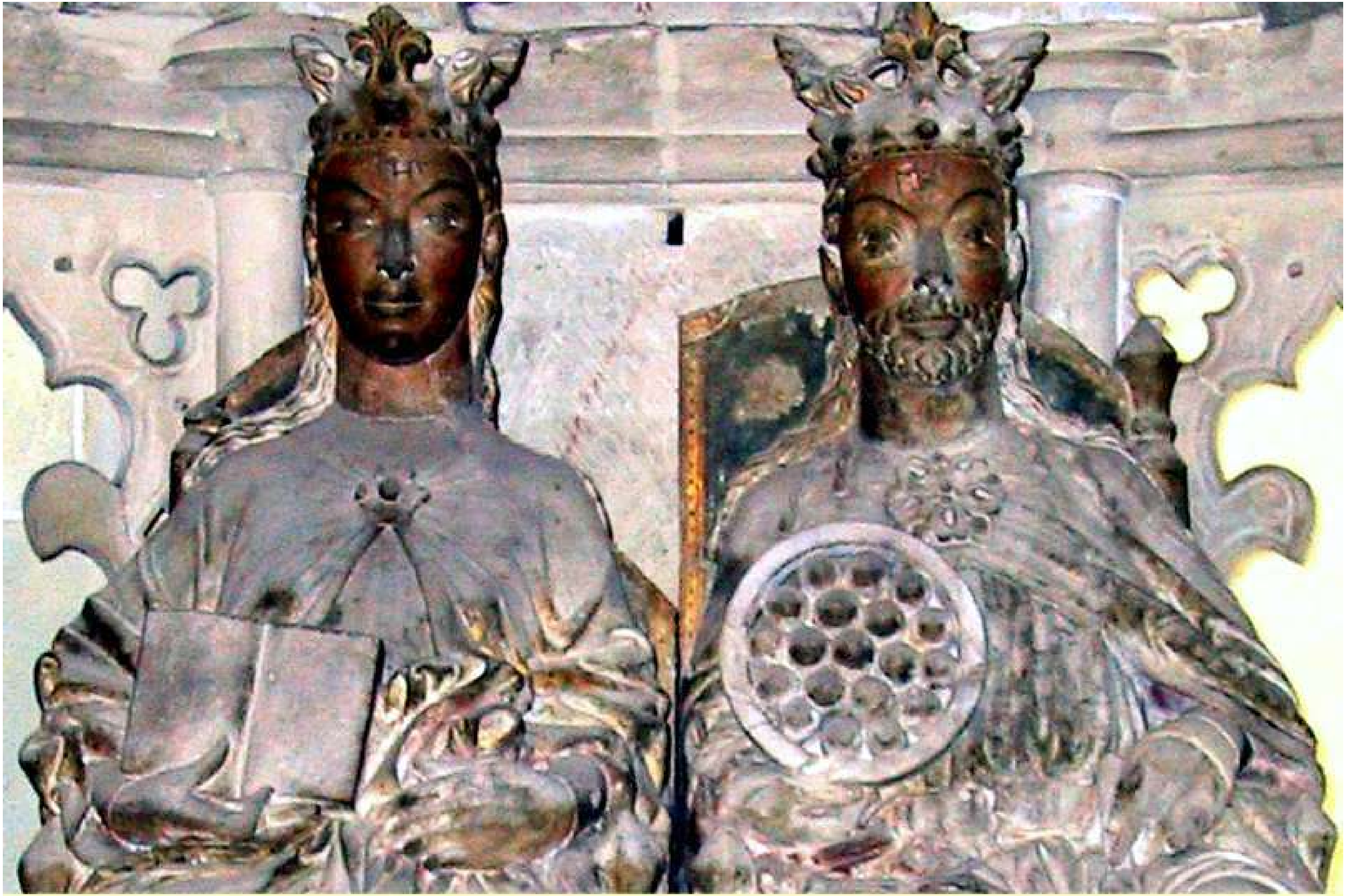
Open your eyes people the truth is right in front of you




Reptilian Types



Christ and his disciples.
Painted wooden panel in the Coptic Museum, Cairo.

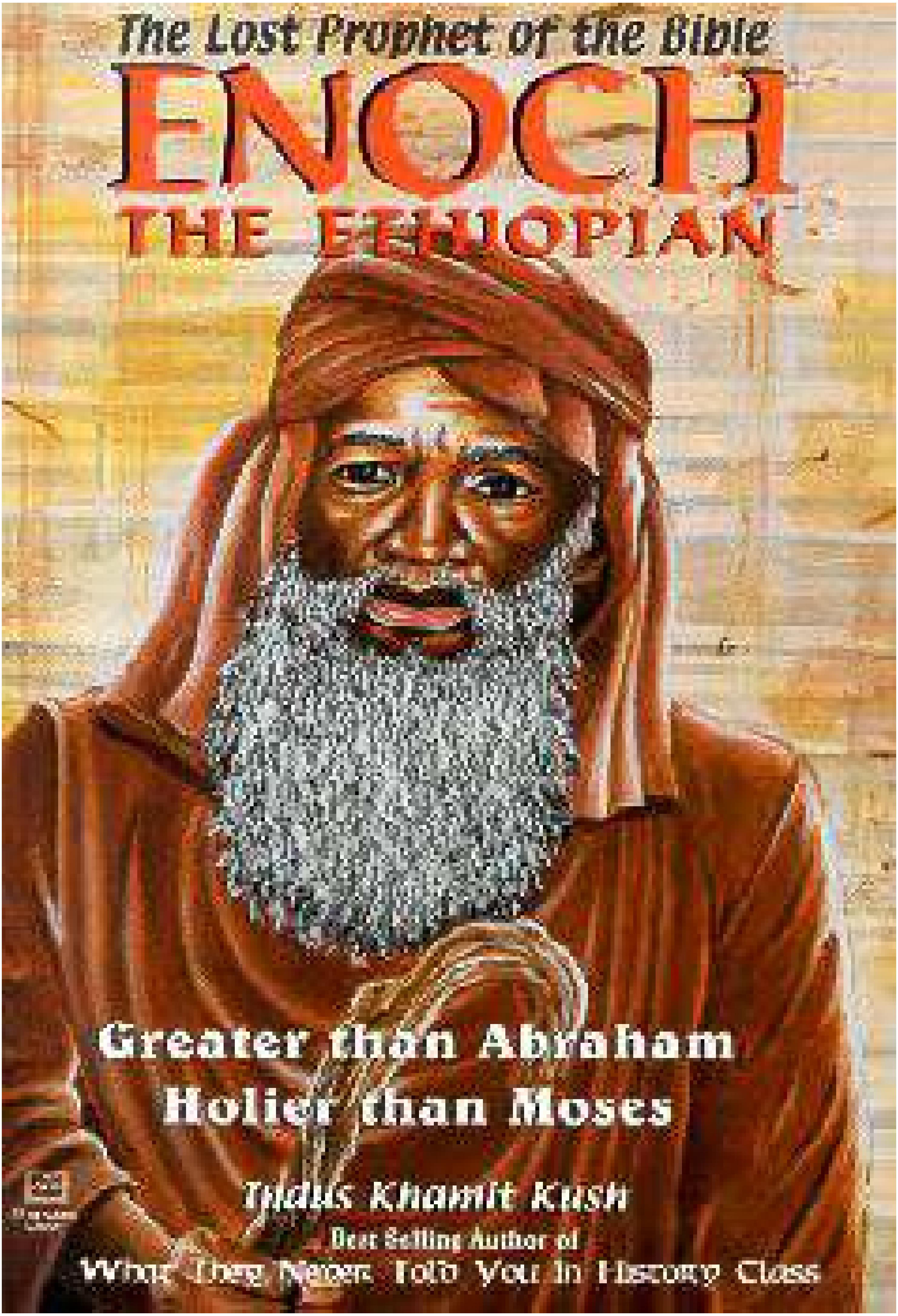


Edith of England and Otto I, Holy Roman Emperor - Married in 929 A.D.

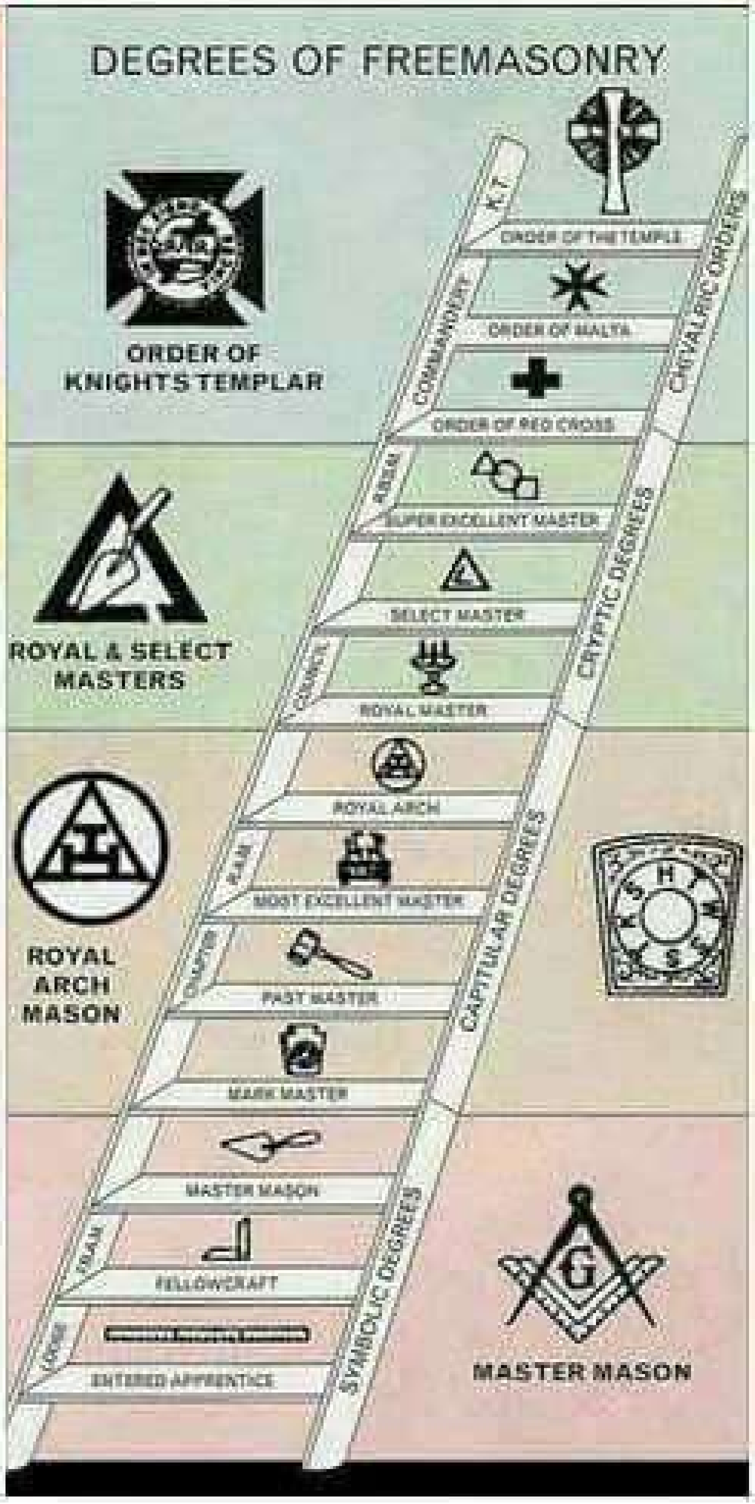
Before

After

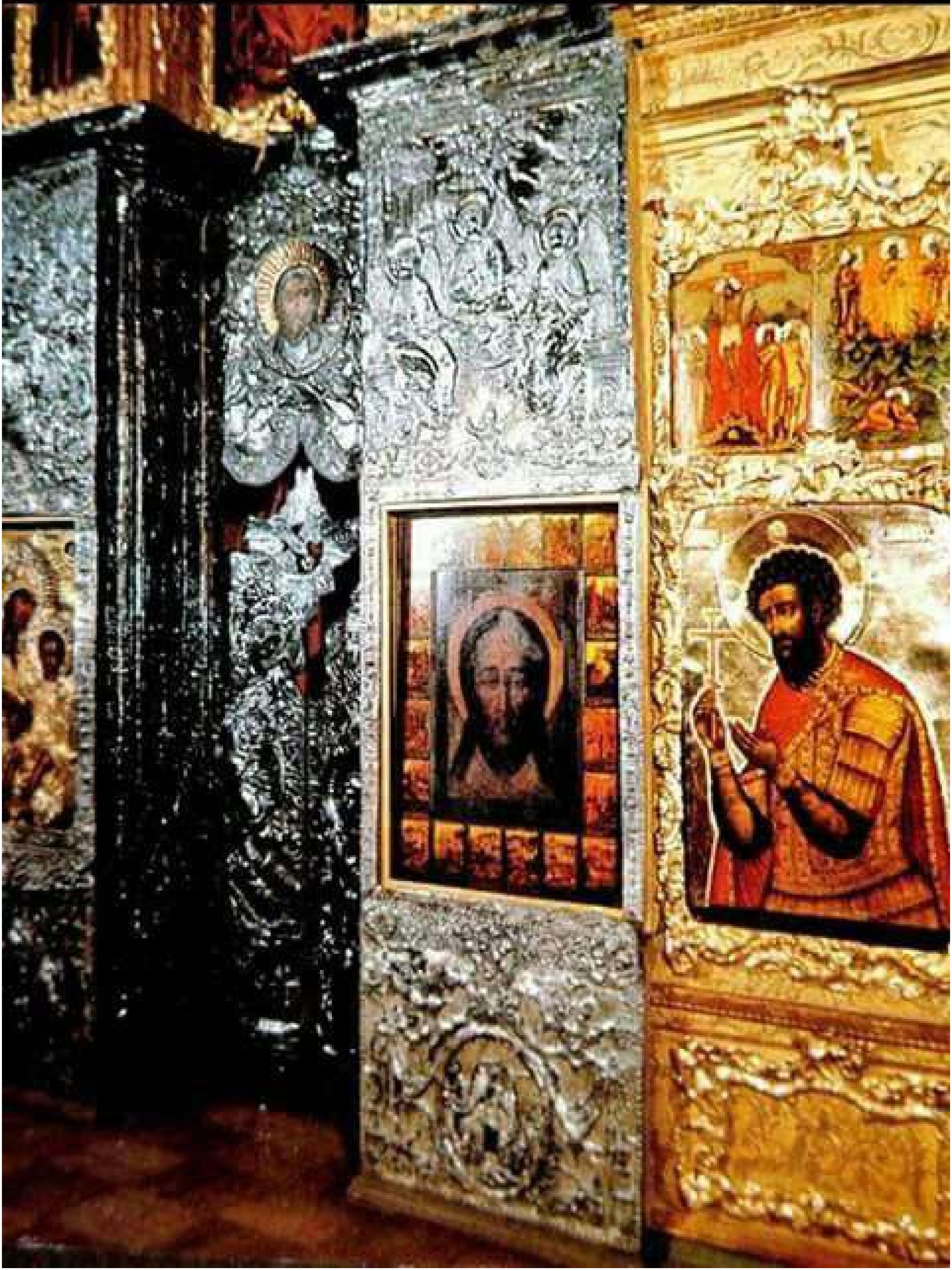

WINNIPEG JACK. BLACKFOOT INDIANS


The Lost Prophet of the Bible
ENOCH
THE ETHIOPIAN
Greater than Abraham
Holier than Moses
Indus Khamit Kush
Best Selling Author of
What They Never Told You in History Class

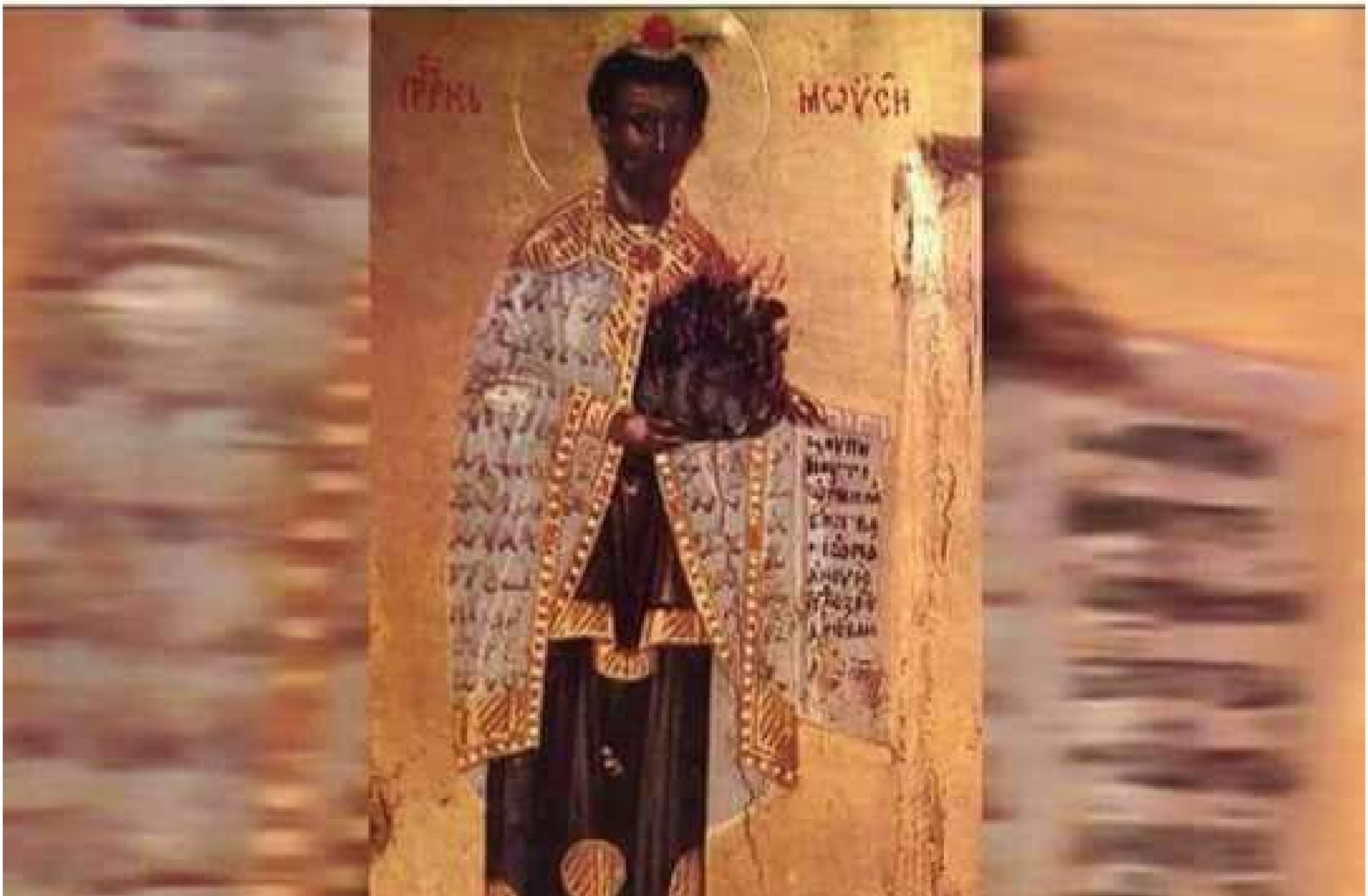
THE GREATEST OPERATIVE MASON MEETS THE GREATEST SPECTULATIVE MASON is Ben Bey Emmanuel Mu Ali, historically known as Benjamin Banneker really Prince Hall? Benjamin Banneker (November 9, 1731 – October 9, 1806) was a free African American astronomer, mathematician, surveyor, almanac author and farmer. Prince Hall (c.1735 – December 4, 1807), Hall formed the African Grand Lodge of North America.

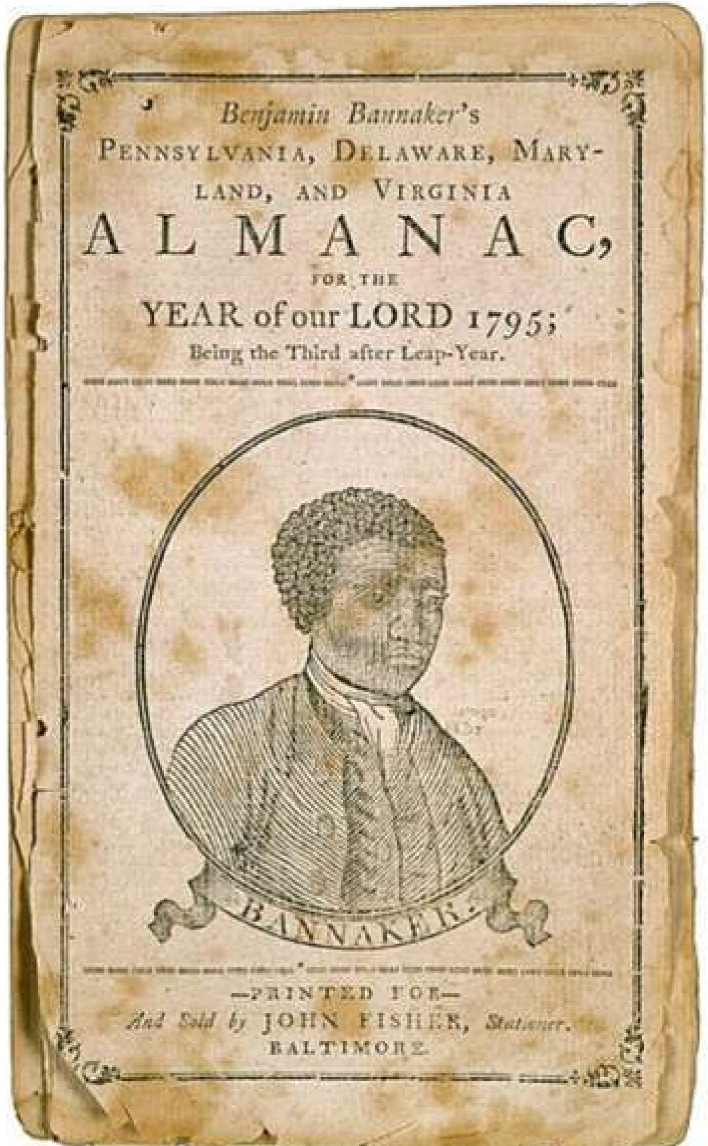

DEGREES OF FREEMASONRY
ORDER OF KNIGHTS TEMPLAR
ROYAL & SELECT MASTERS
ROYAL ARCH MASON
MASTER MASON
K.T.
COMMANDERY
COUNCIL
CHAPTER
ORDER OF THE TEMPLE
ORDER OF MALTA
ORDER OF RED CROSS
SUPER EXCELLENT MASTER
SELECT MASTER
ROYAL MASTER
ROYAL ARCH
MOST EXCELLENT MASTER
PAST MASTER
MARK MASTER
MASTER MASON
FELLOWCRAFT
ENTERED APPRENTICE
CHIVALRIC ORDERS
CRYPTIC DEGREES
CAPITULAR DEGREES
SYMBOLIC DEGREES

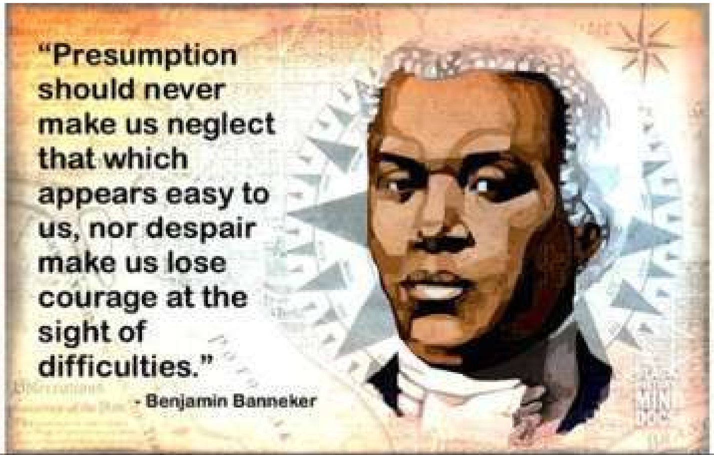
A CHURCH WALL IN RUSSIA.



MOSES THEY COULDNT WHITE WASH FOUND IN THE CATACOMBS IN RUSSIA




Benjamin Bannaker's
PENNSYLVANIA, DELAWARE, MARY-
LAND, AND VIRGINIA
ALMANAC,
FOR THE
YEAR of our LORD 1795;
Being the Third after Leap-Year.
BANNAKER.
—PRINTED FOR—
And Sold by JOHN FISHER, Stationer.
BALTIMORE.

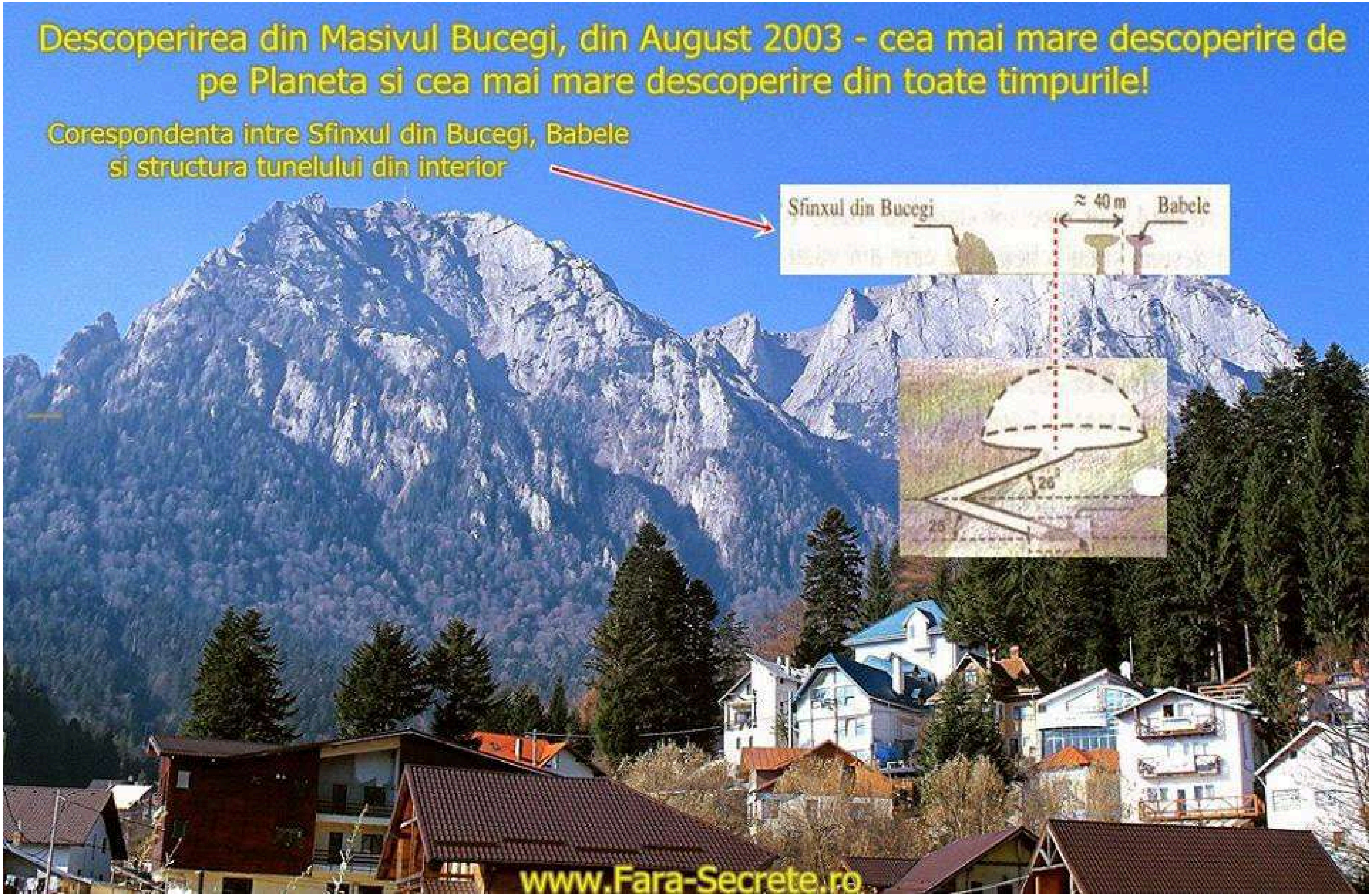

"Presumption should never make us neglect that which appears easy to us, nor despair make us lose courage at the sight of difficulties."
- Benjamin Banneker


AT 22, USING A BORROWED WATCH AS A MODEL, A POCKET KNIFE AS HIS ONLY TOOL, HE CONSTRUCTED THE FIRST CLOCK MADE IN AMERICA.—IT KEPT ACCURATE TIME FOR OVER 20 YEARS!
BENJAMIN
BANNEKER
ASTRONOMER-CITY PLANNER
ON THE ADVICE OF THOMAS JEFFERSON, HE WAS PLACED ON THE COMMISSION WHICH SURVEYED AND LAID OUT THE CITY OF WASHINGTON, D.C.!
PLANNING FOR PEACE IN TIME OF WAR WAS ADVOCATED BY BANNEKER IN HIS FAMOUS ALMANAC IN 1793!

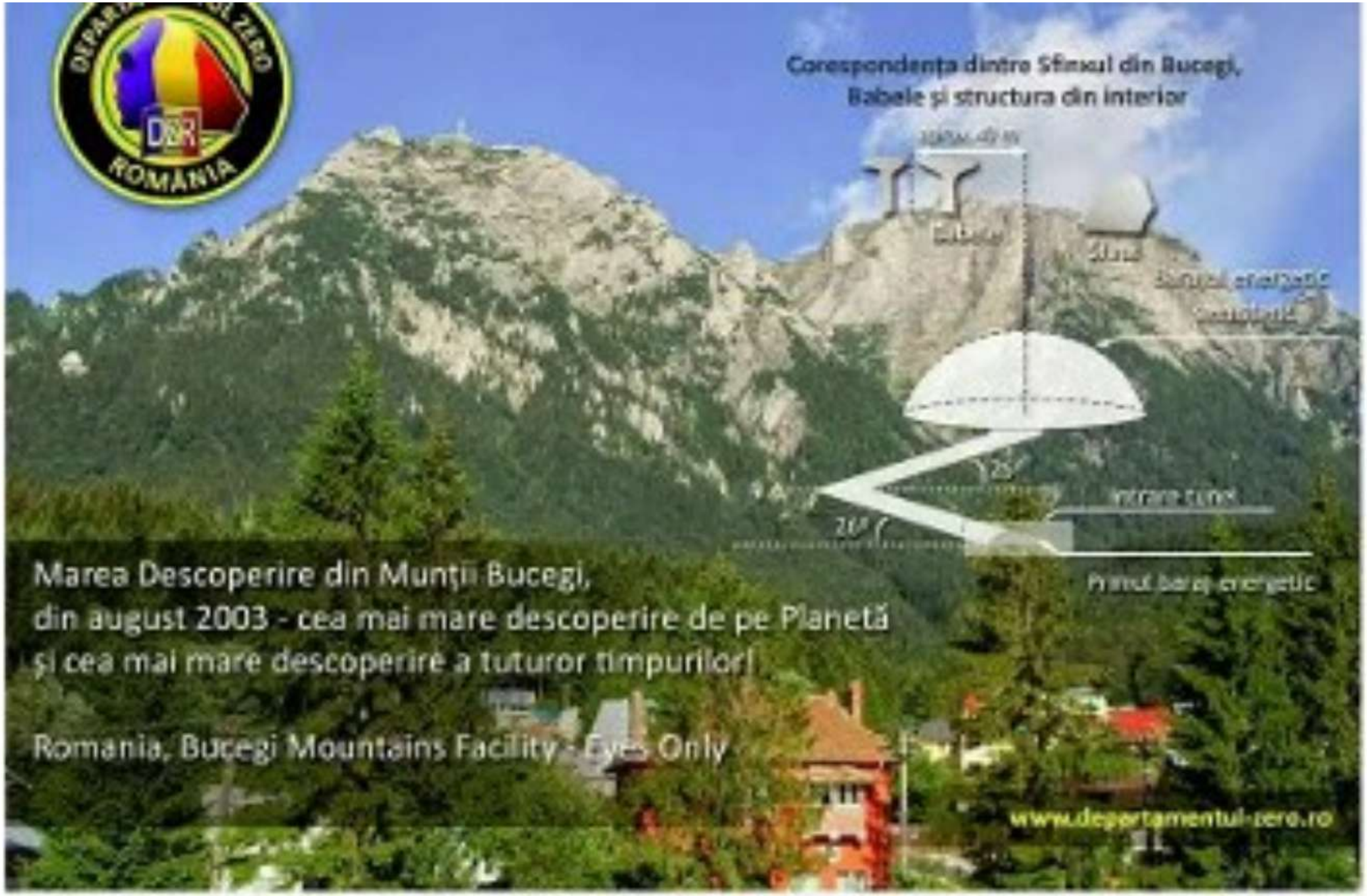

Benjamin Banneker
Black Heritage USA 15c

BosnianPyramid.com
1
2
3
4
5
6
7
8
BOSANSKA DOLINA PIRAMIDA
BOSNIAN VALLEY OF THE PYRAMIDS
1 Bosanska piramida Sunca
Bosnian Pyramid of the Sun
2 Bosanska piramida Mjeseca
Bosnian Pyramid of the Moon
3 Bosanska piramida Ljubavi
Bosnian Pyramid of the Love
4 Hram majke Zemlje
Temple of Mother Earth
5 Piramida bosanskog Zmaja
Pyramid of the Bosnian Dragon
6 Tunel KTK
Tunnel KTK
7 Tunel "Ravne"
Tunnel "Ravne"
8 Tumulus "Kameni hram", Gornja Vratnica
Tumulus "Stone Temple", Gornja Vratnica

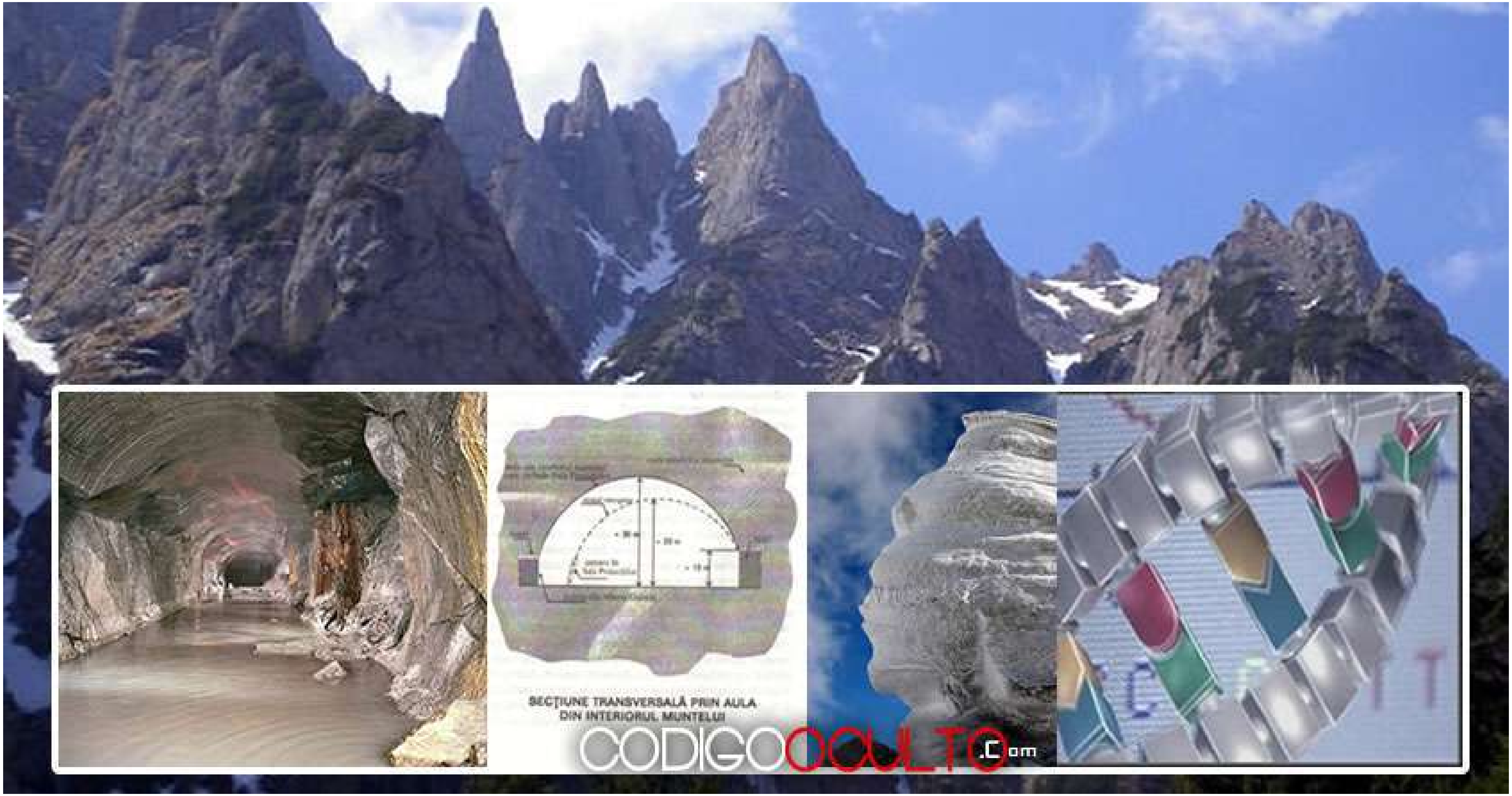

DEPARTAMENTUL ZERO
DZR
ROMÂNIA
Corespondența dintre Sfinxul din Bucegi,
Babele și structura din interior
aprox. 40 m
Babele
Sfinx
Barajul energetic
semisferic
26°
Intrare tunel
26°
Primul baraj energetic
Marea Descoperire din Munții Bucegi,
din august 2003 - cea mai mare descoperire de pe Planetă
și cea mai mare descoperire a tuturor timpurilor!
Romania, Bucegi Mountains Facility - Eyes Only
www.departamentul-zero.ro

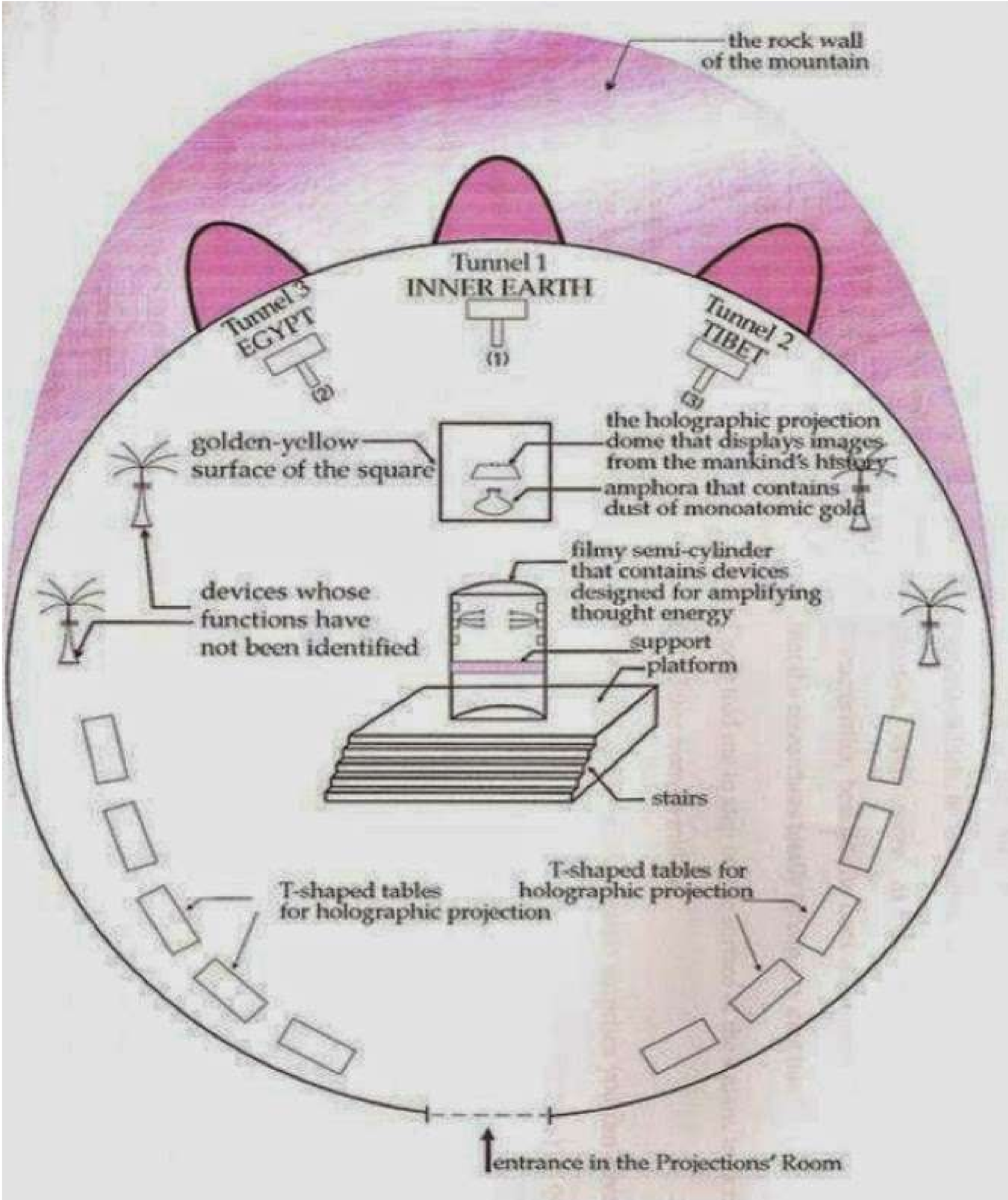

Descoperirea din Masivul Bucegi, din August 2003 - cea mai mare descoperire de pe Planeta si cea mai mare descoperire din toate timpurile!
Corespondenta intre Sfinxul din Bucegi, Babele si structura tunelului din interior
Sfinxul din Bucegi
≈ 40 m
Babele
26°
26°
www.Fara-Secrete.ro

WWW.PIRAMIDASUNCA.BA
Fondacija Arheološki park: Bosanska piramida Sunca Sarajevo, Bosna i Hercegovina
The Archaeological Park: Bosnian Pyramid of the Sun Foundation Sarajevo, Bosnia and Herzegovina
BOSANSKA DOLINA PIRAMIDA
BOSNIAN VALLEY OF THE PYRAMIDS
Piramida bosanskog Zmaja
Pyiramid of the Bosnian Dragon
Hram majke Zemlje
Temple of Mother Earth
Bosanska piramida Mjeseca
Bosnian Pyramid of the Moon
Bosanska piramida Ljubavi
Bosnian Pyiramid of Love
Bosanska piramida Sunca
Bosnian Pyramid of the Sun
Tunel „Ravne“
Tunnel „Ravne“
Tunel KTK
Tunnel KTK
Grad Visoko, BiH
Visoko City, B&H
Tumulus „Kameni hram“, Gornja Vratnica
Tumulus „Stone Temple“, Gornja Vratnica



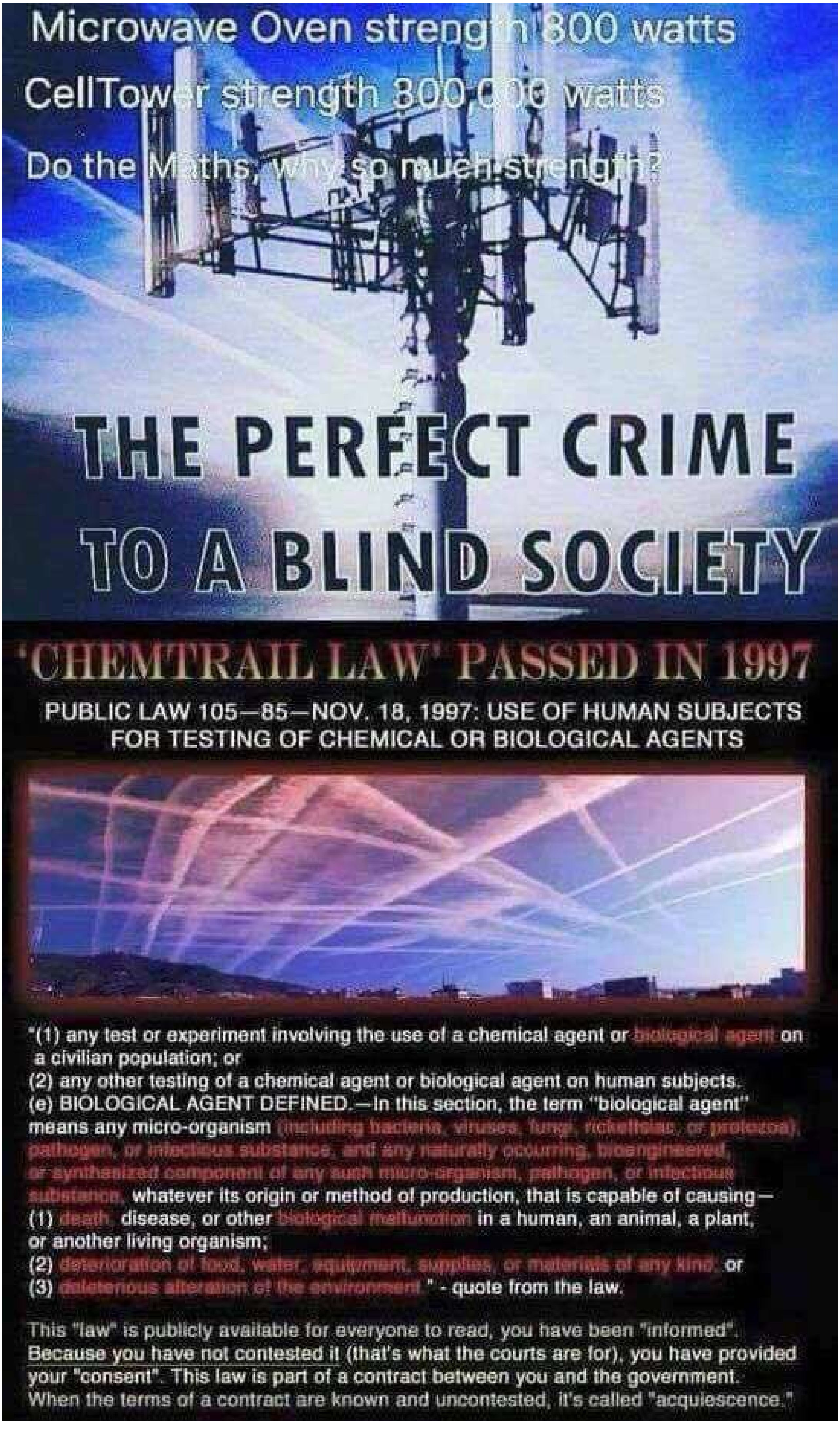
The location of the alien base inside the 'Masivul Bucegi' mountain, Romania. Also, notice the locations of the Sphinx of Bucegi and the Babele monoliths above the alien base. – See

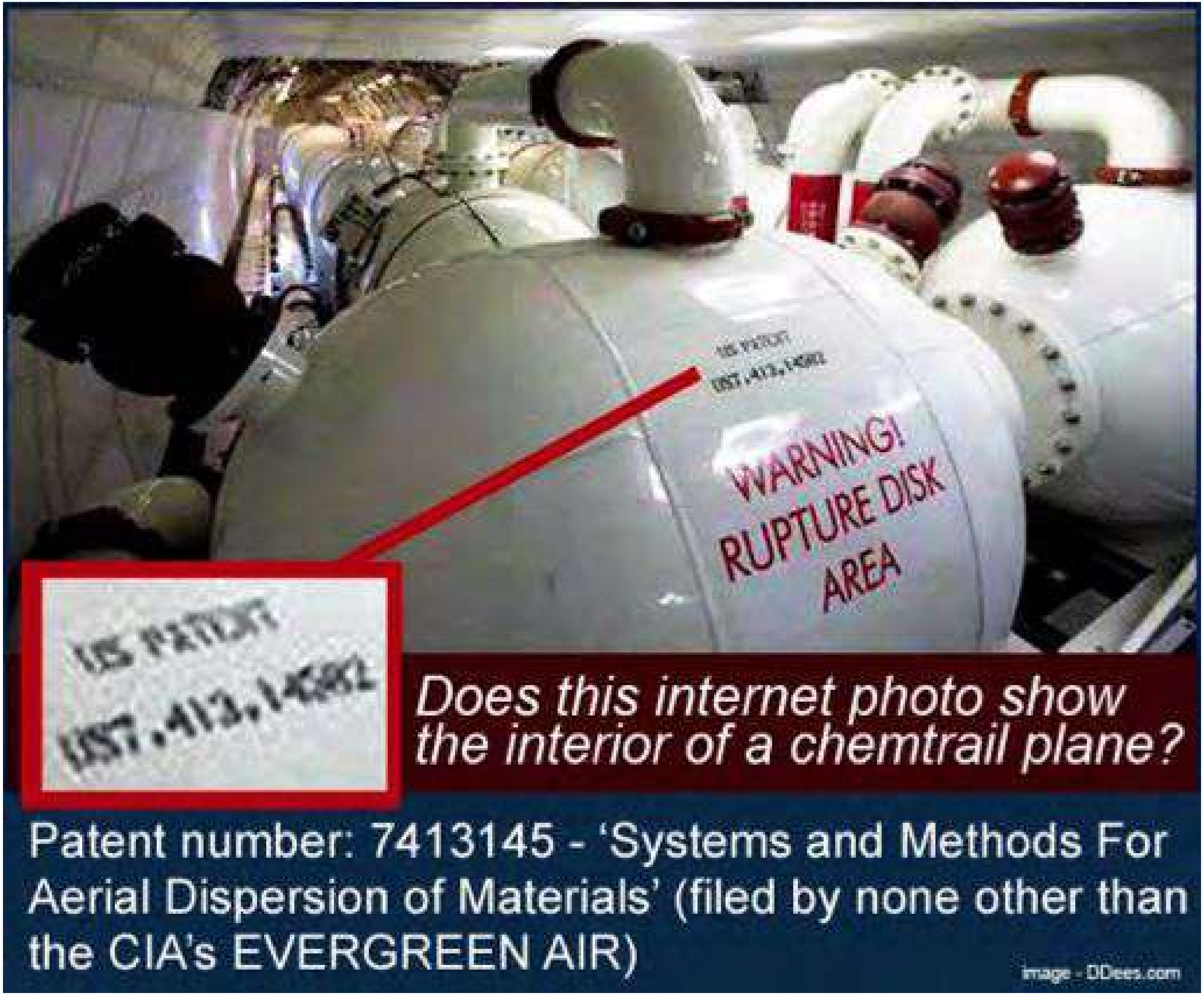

SECȚIUNE TRANSVERSALĂ PRIN AULA
DIN INTERIORUL MUNTELUI
CODIGOOCULTO.Com


the rock wall of the mountain
Tunnel 1 INNER EARTH
(1)
Tunnel 3 EGYPT
(2)
Tunnel 2 TIBET
(3)
golden-yellow surface of the square
the holographic projection dome that displays images from the mankind's history
amphora that contains dust of monoatomic gold
filmy semi-cylinder that contains devices designed for amplifying thought energy
devices whose functions have not been identified
support
platform
stairs
T-shaped tables for holographic projection
T-shaped tables for holographic projection
entrance in the Projections' Room

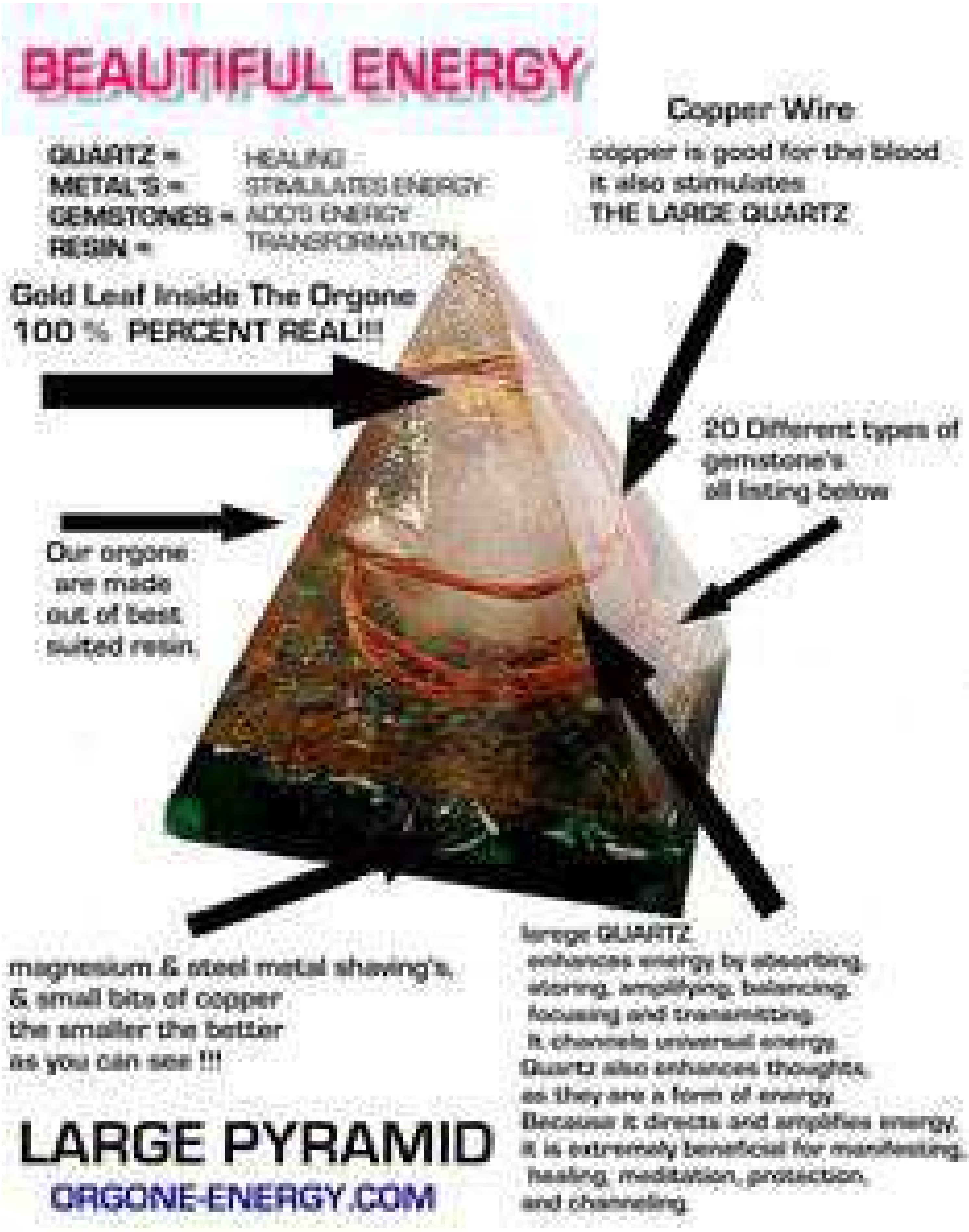

www.piramidasunca.ba

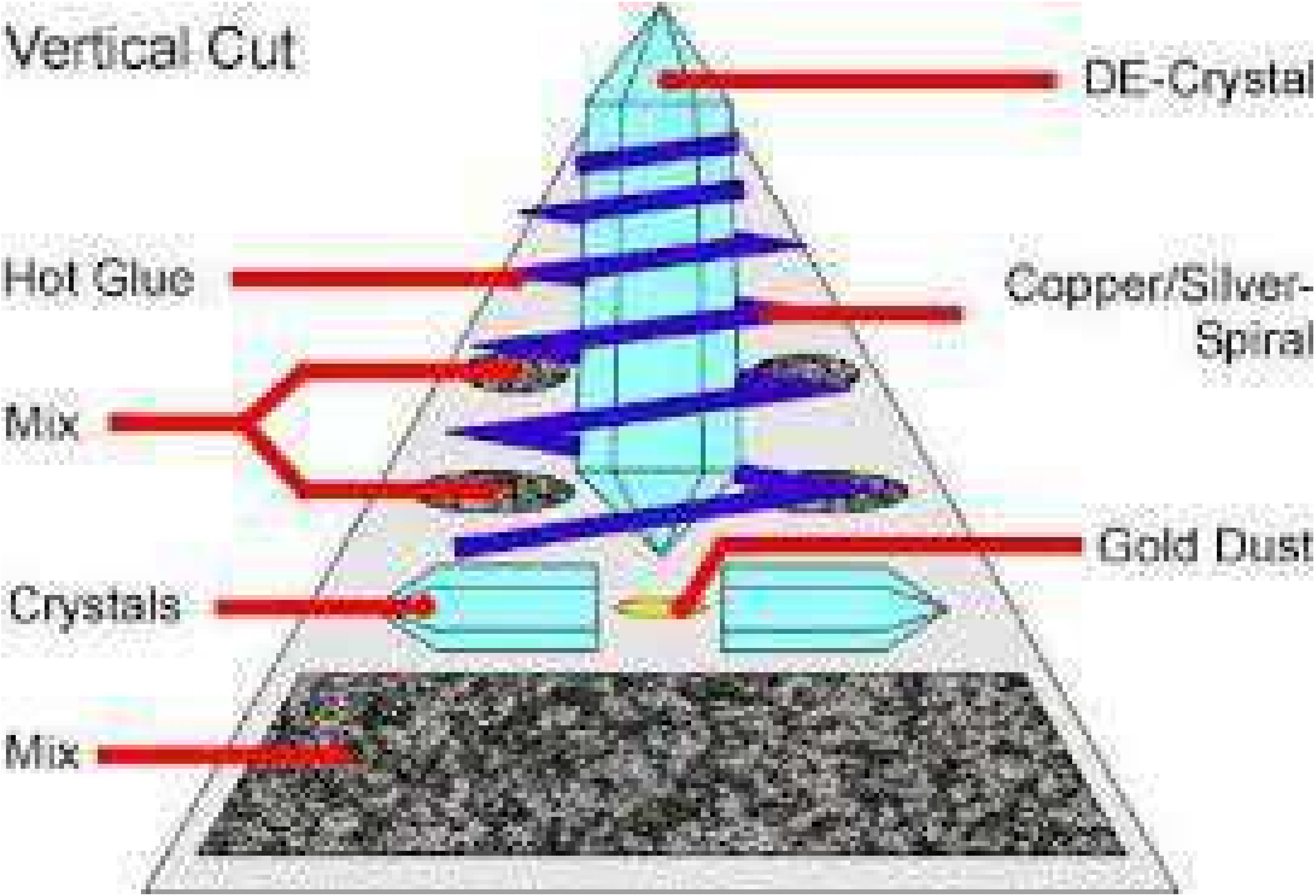

WE ARE SPRAYING YOU WITH
ALUMINUM OXIDE, BARIUM, STRONTIUM,
COPPER SULFATE POTASSIUM IODIDE
AND ALL YOU WANT TO DO IS
PARTY... DUMB SHEEP!


Microwave Oven strength 800 watts
CellTower strength 800 000 watts
Do the Maths, why so much strength?
THE PERFECT CRIME
TO A BLIND SOCIETY
'CHEMTRAIL LAW' PASSED IN 1997
PUBLIC LAW 105—85—NOV. 18, 1997: USE OF HUMAN SUBJECTS FOR TESTING OF CHEMICAL OR BIOLOGICAL AGENTS
"(1) any test or experiment involving the use of a chemical agent or biological agent on a civilian population; or
(2) any other testing of a chemical agent or biological agent on human subjects.
(e) BIOLOGICAL AGENT DEFINED.—In this section, the term ''biological agent'' means any micro-organism (including bacteria, viruses, fungi, rickettsiae, or protozoa), pathogen, or infectious substance, and any naturally occurring, bioengineered, or synthesized component of any such micro-organism, pathogen, or infectious substance, whatever its origin or method of production, that is capable of causing—
(1) death, disease, or other biological malfunction in a human, an animal, a plant, or another living organism;
(2) deterioration of food, water, equipment, supplies, or materials of any kind; or
(3) deleterious alteration of the environment." - quote from the law.
This "law" is publicly available for everyone to read, you have been "informed". Because you have not contested it (that's what the courts are for), you have provided your "consent". This law is part of a contract between you and the government. When the terms of a contract are known and uncontested, it's called "acquiescence."



US PATENT
WARNING!
RUPTURE DISK
AREA
Does this internet photo show
the interior of a chemtrail plane?
Patent number: 7413145 - 'Systems and Methods For
Aerial Dispersion of Materials' (filed by none other than
the CIA's EVERGREEN AIR)
image - DDees.com


BEAUTIFUL ENERGY
QUARTZ = HEALING
METAL'S = STIMULATES ENERGY
GEMSTONES = ADDS ENERGY
RESIN = TRANSFORMATION
Copper Wire
copper is good for the blood
it also stimulates
THE LARGE QUARTZ
Gold Leaf Inside The Orgone
100 % PERCENT REAL!!!
20 Different types of
gemstone's
all listing below
Our orgone
are made
out of best
suited resin.
magnesium & steel metal shaving's,
& small bits of copper
the smaller the better
as you can see !!!
larege QUARTZ
enhances energy by absorbing,
storing, amplifying, balancing,
focusing and transmitting.
It channels universal energy.
Quartz also enhances thoughts,
as they are a form of energy.
Because it directs and amplifies energy,
it is extremely beneficial for manifesting,
healing, meditation, protection,
and channeling.
LARGE PYRAMID
ORGONE-ENERGY.COM



Vertical Cut
DE-Crystal
Hot Glue
Copper/Silver-
Spiral
Mix
Gold Dust
Crystals
Mix


© Eddie Gowan


Join us on
Facebook
facebook.com/UFOatSection51
SECTION
51
0:44 / 2:08
HD

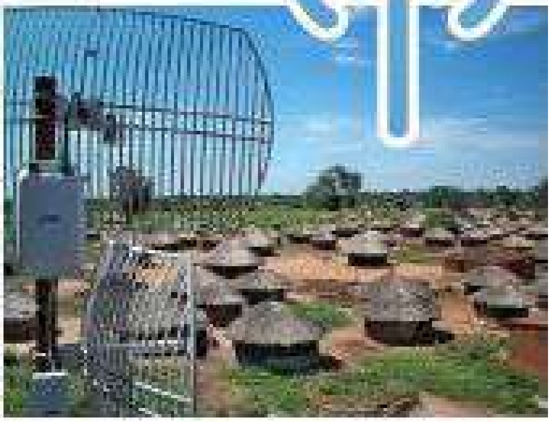

SECTION
51
0:05 / 2:08
HD


THE COAST OF ANTARCTICA, AND THE ANTARCTIC SHELF.
THIS IS THE ICE WALL, THE CONTAINER OF THE EARTH,
A GIANT LAND MASS SURROUNDING THE EARTH.
WATER ALWAYS LEVELS OUT AND ALWAYS TAKES
THE SHAPE OF ITS CONTAINER. THERE IS NO EDGE.
IF SOMEONE ASKS FOR A
PICTURE OF THE ICE WALL
#FLATEARTHMATTERS
SAR-27
#MOONHOAX
#SPACEHOAX
#GRAVITYHOAX
#RELATIVITYHOAX
#TRUSTFLATWATER
#FLATEARTH
SHOW THEM THIS PICTURE
FISH TANKS, TUBS, POOLS & LAKES OF WATER ARE FLAT AND LEVEL.

TUESDAY, AUGUST 24th at 7:30 P.M.

HISTORY OF MICROWAVES

From Weapons to Your WiFi



FREE LECTURE AT THE UNIVERSITY OF TORONTO WITH

BARRIE TROWER

Physicist & Former British Secret Service Microwave Weapon Specialist

During the Cold War, Barrie Trower's job for the British Secret Service was to debrief spies who were using stealth microwave weapons. Most notably, the Russians pulsed microwaves at the American Embassy where staff developed leukemia and other sicknesses.

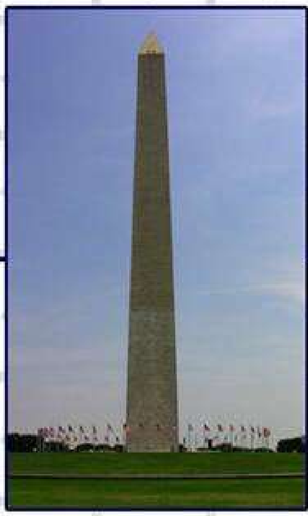
Today, Barrie Trower is shocked to see the proliferation of microwave technologies – WiFi, cell phones, cell towers, and more. THE HISTORY OF MICROWAVES: FROM WEAPONS TO WIFI will give you an understanding of microwave radiation from an insider who now speaks openly to governments, police, and the public.

EVENT LOCATION

HEALTH SCIENCES BLDG AUDITORIUM
155 College Street, Room 610
University of Toronto

what do these 3 cities have in common?

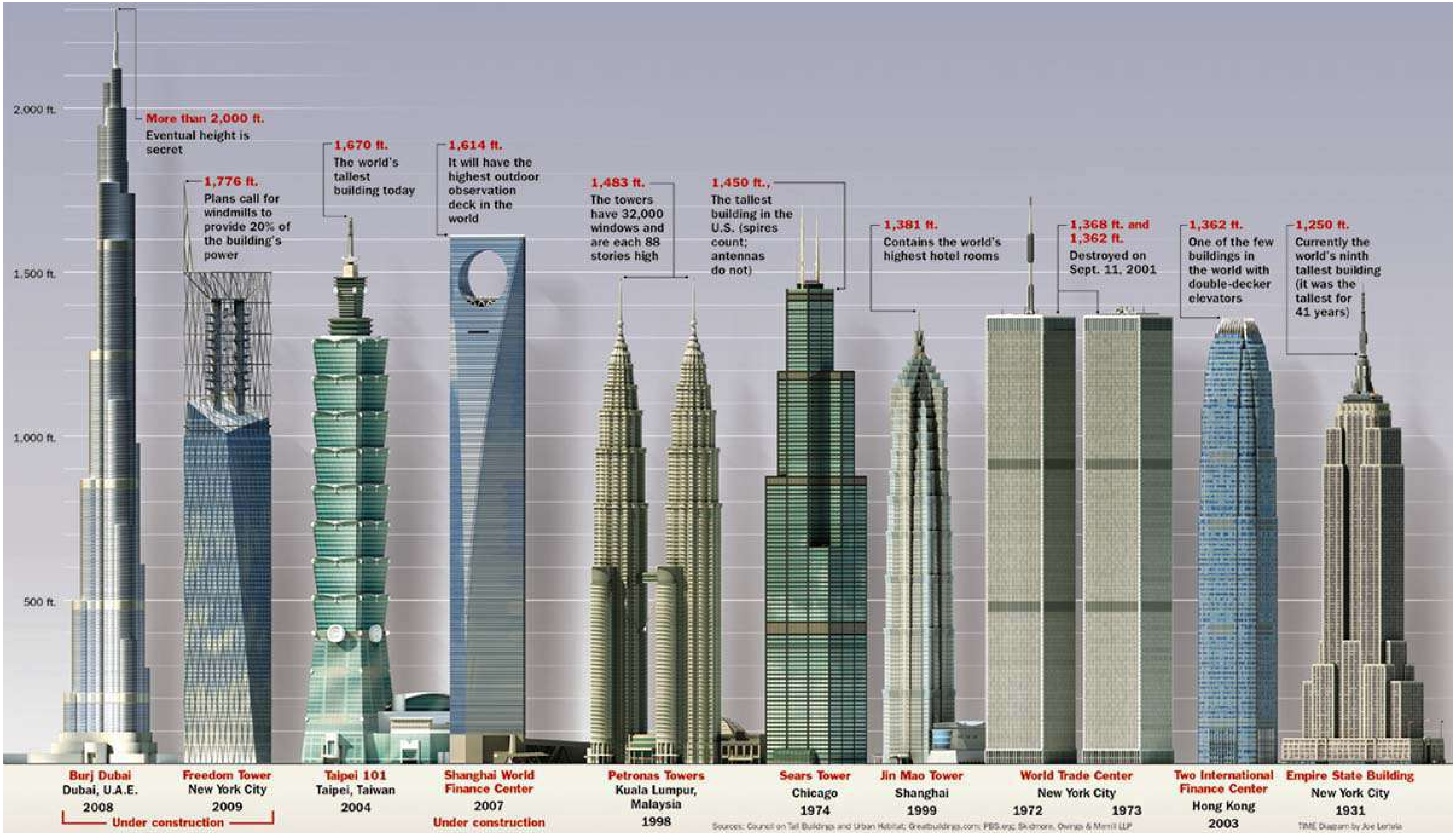
City of London



Washington
District of Columbia

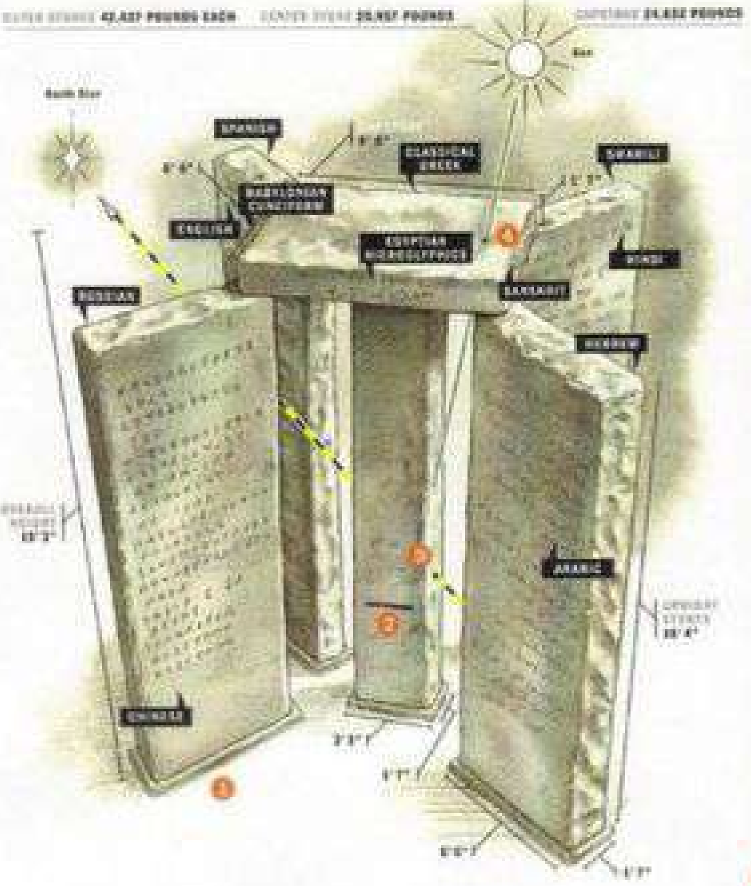
Vatican City

- they pay no taxes
- they are under no national authority
- they have totally Independent Identities from the rest of the world



2,000 ft.
1,500 ft.
1,000 ft.
500 ft.
More than 2,000 ft.
Eventual height is secret
1,776 ft.
Plans call for windmills to provide 20% of the building's power
1,670 ft.
The world's tallest building today
1,614 ft.
It will have the highest outdoor observation deck in the world
1,483 ft.
The towers have 32,000 windows and are each 88 stories high
1,450 ft.,
The tallest building in the U.S. (spires count; antennas do not)
1,381 ft.
Contains the world's highest hotel rooms
1,368 ft. and 1,362 ft.
Destroyed on Sept. 11, 2001
1,362 ft.
One of the few buildings in the world with double-decker elevators
1,250 ft.
Currently the world's ninth tallest building (it was the tallest for 41 years)
Burj Dubai
Dubai, U.A.E.
2008
Freedom Tower
New York City
2009
Under construction
Taipei 101
Taipei, Taiwan
2004
Shanghai World Finance Center
2007
Under construction
Petronas Towers
Kuala Lumpur, Malaysia
1998
Sears Tower
Chicago
1974
Jin Mao Tower
Shanghai
1999
World Trade Center
New York City
1972
1973
Two International Finance Center
Hong Kong
2003
Empire State Building
New York City
1931
Sources: Council on Tall Buildings and Urban Habitat; Greatbuildings.com; PBS.org; Skidmore, Owings & Merrill LLP
TIME Diagram by Joe Lertola

Who Are the Authors *of the* The Georgia Guidestones:

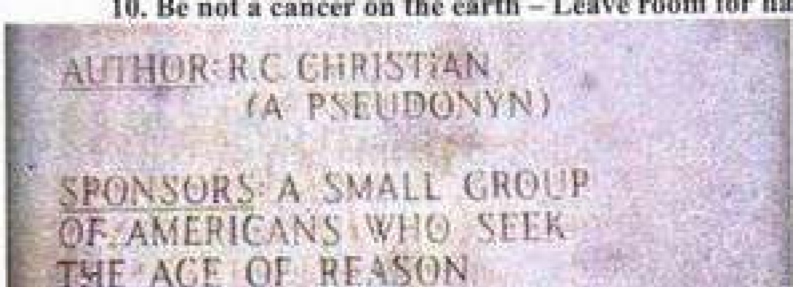


The English version of the Guidelines---The ten guides for a new Age of Reason are as follows:

1. Maintain humanity under 500,000,000 in perpetual balance with nature.

2. Guide reproduction wisely – improving fitness and diversity. **3. Unite humanity with a living new language.** 4. Rule passion – faith – tradition – and all things with tempered reason. 5. Protect people and nations with fair laws and just courts.
6. Let all nations rule internally resolving external disputes **in a world court.** 7. Avoid petty laws and useless officials.
8. Balance personal rights with **social duties.** 9. Prize truth – beauty – love – **seeking harmony with the infinite.**

10. Be not a cancer on the earth – Leave room for nature – Leave room for nature.



Who Are the Authors *of the* The Georgia Guidestones:

(Roman Catholic Rosicrucian Order) **Seeking entry into the Rosicrucian mysteries. (B) Notice the candidate is showing the hand sign of secrecy. Also notice the letters "RC", as in R.C. Christian.** Well, it is. R.C. Christian is a clear reference to Christian Rosenkreuz whose English name is **Christian Rose Cross**, the legendary founder of the Rosicrucian Order… http://vigilantcitizen.com/?p=5496

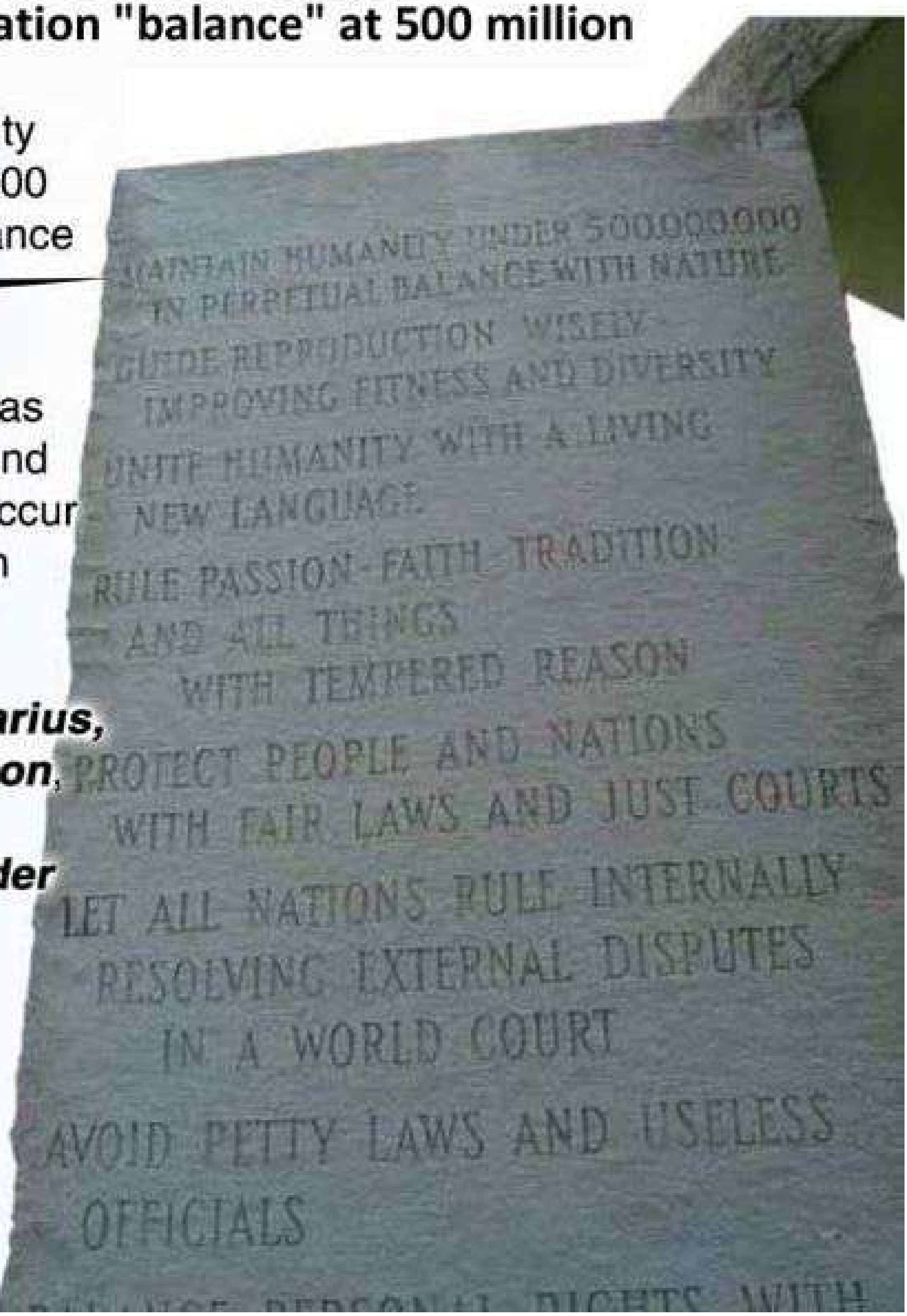
GEORGIA GUIDESTONES
NEW WORLD ORDER
Human population "balance" at 500 million

maintain humanity
under 500,000,000
in perpetual balance
with nature

the human cull has
been designed and
pre-planned to occur
in conjuction with
the ***day of the***
lord's wrath,
the ***age of aquarius,***
the ***age of reason***,
the
New World Order

located in
Elberton, Georgia

6 granite slabs
weighing more than
100 tons - almost
20 feet in height



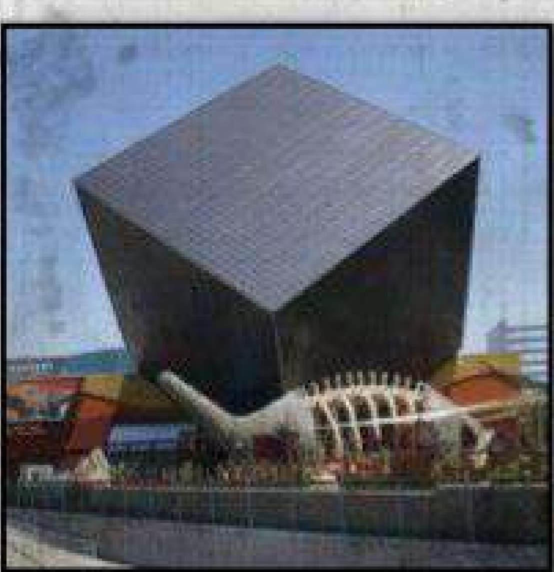
The Georgia Guidestones, sometimes referred to as the "American Stonehenge," is a granite monument erected in Elbert County, Ga., in 1979. The stones are engraved in eight languages — English, Spanish, Swahili, Hindi, Hebrew, Arabic, Chinese and Russian — each relaying 10 "new" commandments for "an Age of Reason." The stones also line up with certain astronomical features.

@conspiracystory

Though the monument contains no encrypted messages, its purpose and origin remain shrouded in mystery. They were commissioned by a man who has yet to be properly identified, who went by the pseudonym of R.C. Christian.

Of the 10 commandments, the first one is perhaps the most controversial: "Maintain humanity under 500,000,000 in perpetual balance with nature." Many have taken it to be a license to cull the human population down to the specified number, and critics of the stones have called for them to be destroyed. Some conspiracy theorists even believe they may have been designed by a "Luciferian secret society" calling for a new world order.

BLACK CUBE OF SATURN



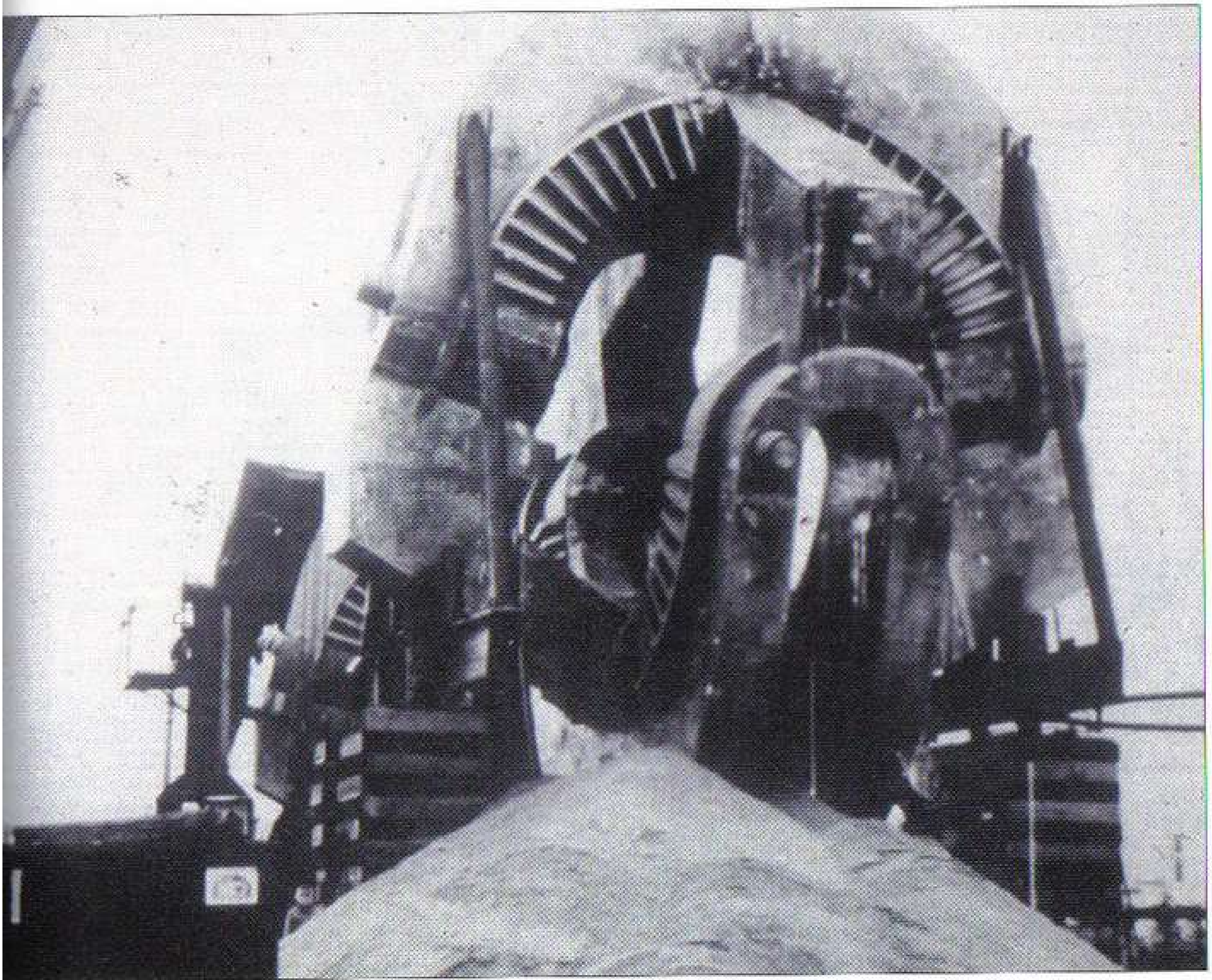
SANTA ANA

MANHATTAN

AUSTRALIA

DENMARK

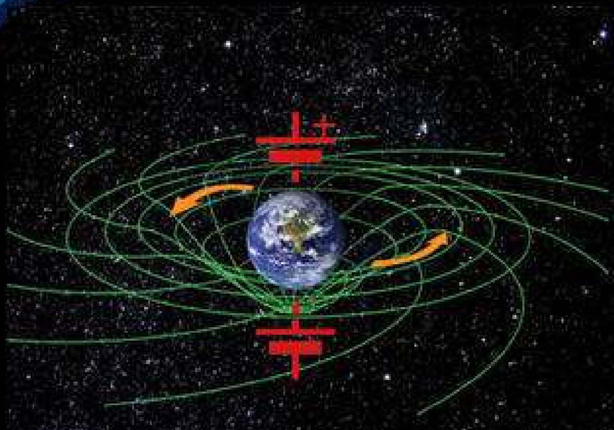

This amazing Veterans Day Memorial in Arizona, can only be seen perfectly at 11:11am, on 11/11 each year.
Mind Blowing Facts



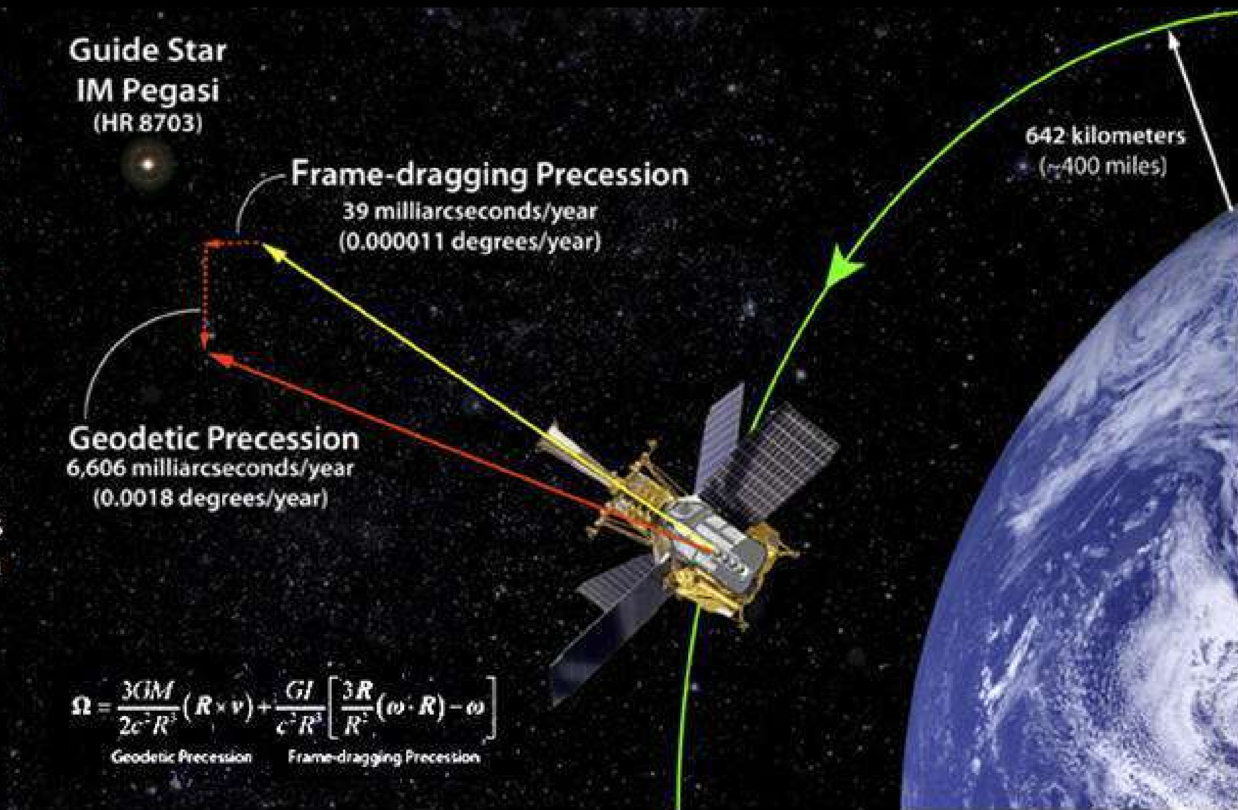
This amazing photo was given to us by a UFO researcher who prefers to remain anonymous. According to our informant, this huge piece of unidentified machinery was one of six excavated circa 1990 from a great depth on secret government property in the United States and promptly reburied in that same area. Dwarfing the dumpster of its left side, the surface of this apparatus is covered with peculiar hieroglyphics that appear similar to characters to ancient Hebrew, Arabic, and Sanskrit.

Aerial view of Hoover Dam - Stargate SG1 superlay

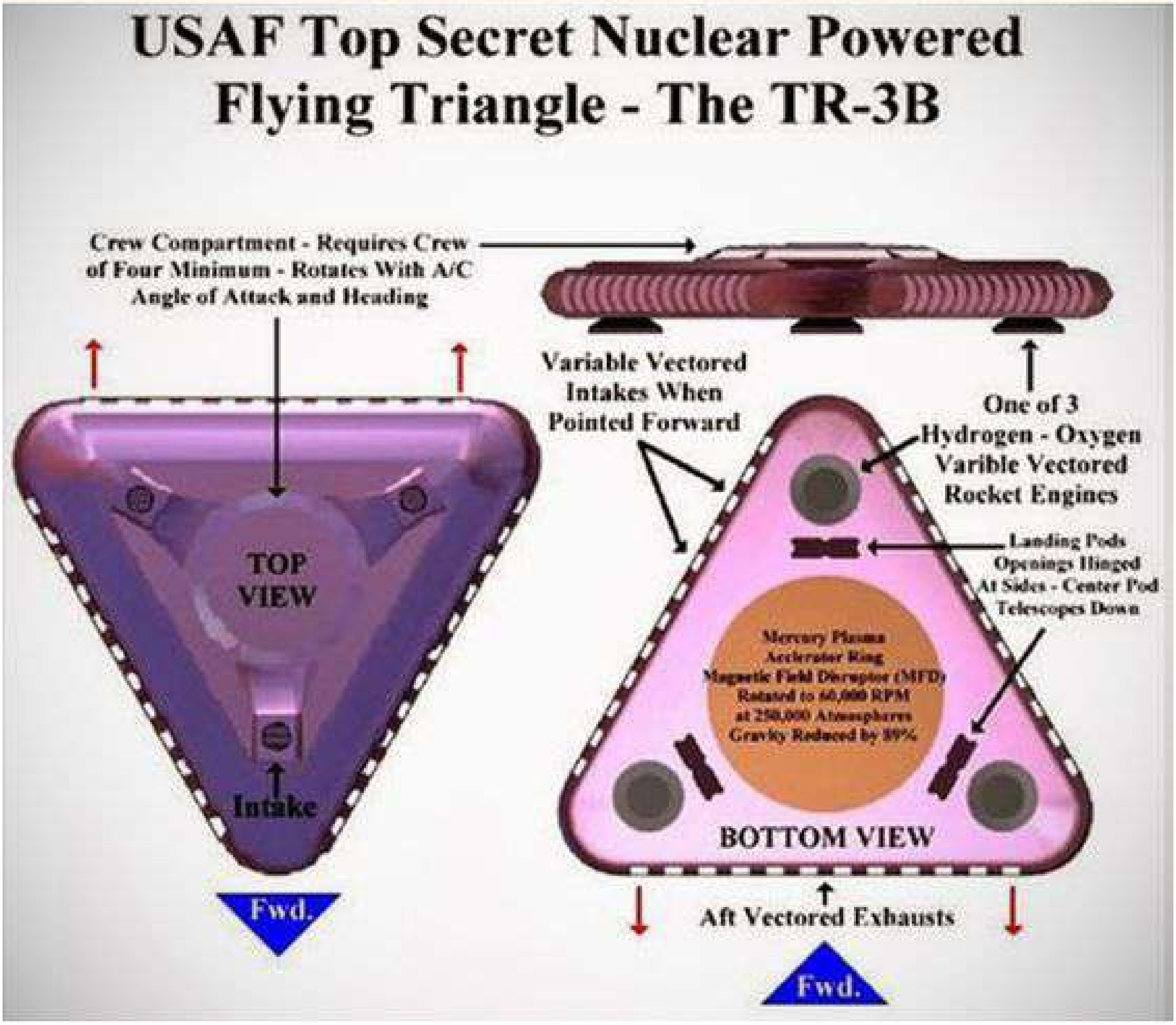
Time-warped Fields (TwF)



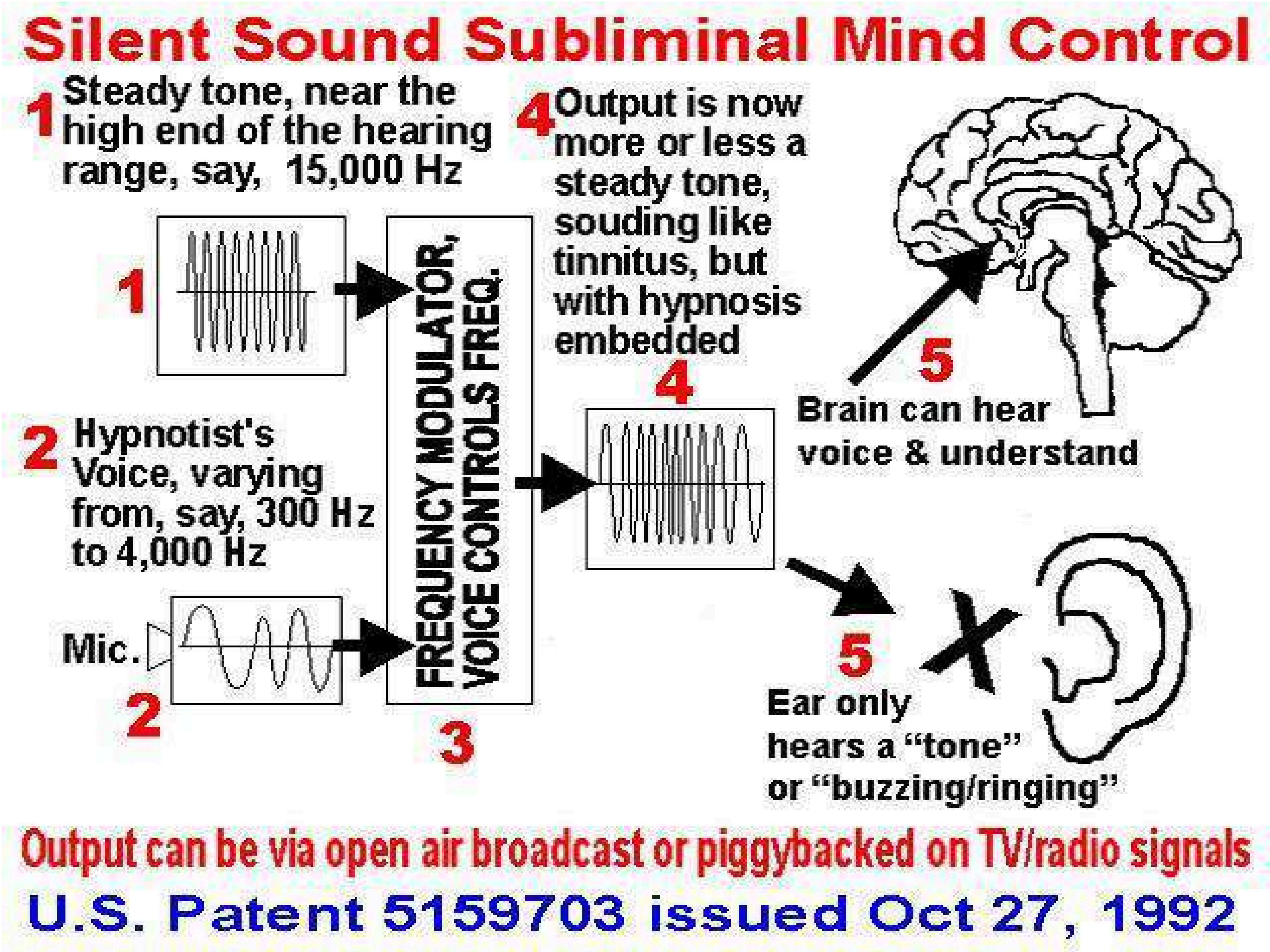
Time-warped Field Technology accesses the potential energy differences between two areas of twisted spacetime created by inertial frame-dragging.



Time-warped Fields: use energy within curvatures of spacetime around a rotating mass or energy field to generate containable and controllable fields of closed-timelike curves that can move matter and information forward or backward in time.



USAF Top Secret Nuclear Powered
Flying Triangle - The TR-3B
Crew Compartment - Requires Crew
of Four Minimum - Rotates With A/C
Angle of Attack and Heading
Variable Vectored
Intakes When
Pointed Forward
One of 3
Hydrogen - Oxygen
Varible Vectored
Rocket Engines
Landing Pods
Openings Hinged
At Sides - Center Pod
Telescopes Down
TOP
VIEW
Intake
Mercury Plasma
Accelerator Ring
Magnetic Field Disruptor (MFD)
Rotated to 60,000 RPM
at 250,000 Atmospheres
Gravity Reduced by 89%
BOTTOM VIEW
Aft Vectored Exhausts
Fwd.
Fwd.


Silent Sound Subliminal Mind Control
1 Steady tone, near the high end of the hearing range, say, 15,000 Hz
1
2 Hypnotist's Voice, varying from, say, 300 Hz to 4,000 Hz
Mic.
2
FREQUENCY MODULATOR, VOICE CONTROLS FREQ.
3
4 Output is now more or less a steady tone, souding like tinnitus, but with hypnosis embedded
4
5
Brain can hear voice & understand
5
Ear only hears a "tone" or "buzzing/ringing"
Output can be via open air broadcast or piggybacked on TV/radio signals
U.S. Patent 5159703 issued Oct 27, 1992

WHAT

- What (exactly) do I want to achieve?
- What are the facts?
- What would happen if no decision was made or solution found?
- What do I need in order to find a solution?

WHY

- Why do I want to achieve a solution?
- Why did the problem or opportunity arise?
- Why do I need to find a solution or way forward at all?
- Ask 5 Whys

HOW

- How will the situation be different?
- How relevant is the information I am gathering?
- How can I find out more?
- How can I involve relevant people?

WHERE

- Where did the issue arise?
- Where does it impact?
- Is the "where" important?
- If so, why?

WHO

- Who am I trying to please?
- Who cares about this situation? Who is affected?
- Who is involved (information, help, action)?
- Who needs to be informed?

WHEN

- When did the issue arise?
- When do we need to act?
- By when must it be resolved?

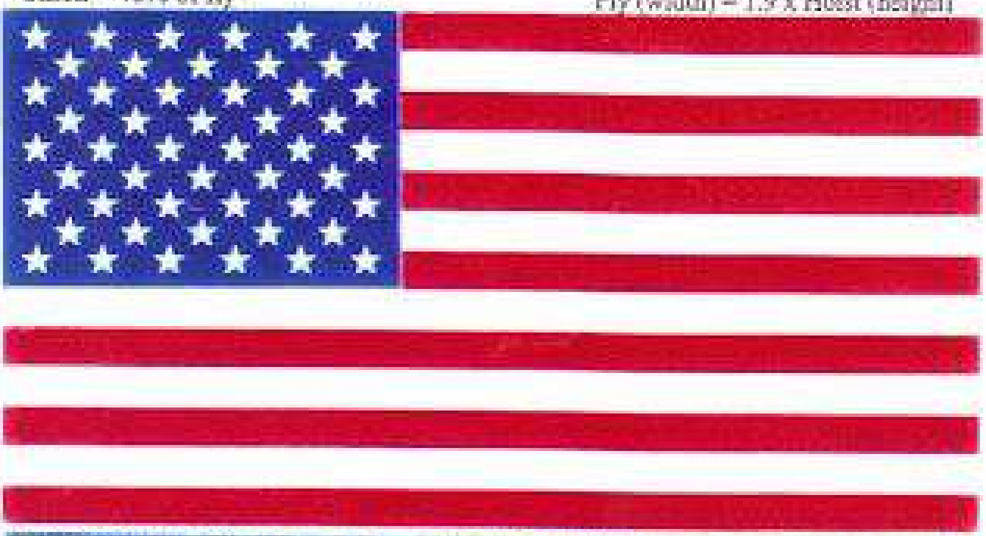
Flag of the Unity-States of the America

Title: 4: U.S.A. Codes: Chapter: 1: Section: 1&2 and under
Presidential: Executive-Order: #10834, dated August the 25 of 1959.

Preserves Constitution

Union = 40% of fly

Fly (width) = 1.9 x Hoist (height)



OFFICIAL FLAG of the UNITY-STATES of the AMERICA

Union hoist = 7/13 (.5385x1)

Hoist (height) = 1

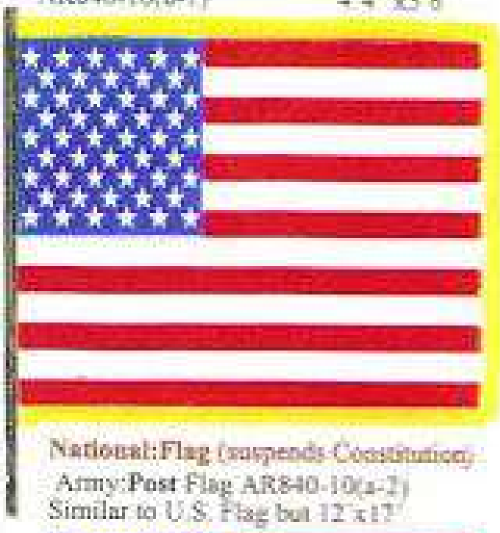
National:flags authorized in Title: 4: U.S.A. Codes: Chapter: 1: Part:II: Section: 22-25: Part:III: Section: 31&32 are those used by the executive branch of the government. They represent government not individual citizens.

A yellow fringe is not authorized on a Title: 4: U.S.A.: Codes: Chapter: 1: Sec.: 1&2 flag. It is a mutilation (Sec.:3)

Gold Tassel Admiralty

This Flag, with yellow fringe, represents No nation and No constitution.

National:Flag (suspends Constitution)
Army:**Ceremonial** and **Parade**:Flag
AR840-10(b-1) 4´4´´x5´6´´

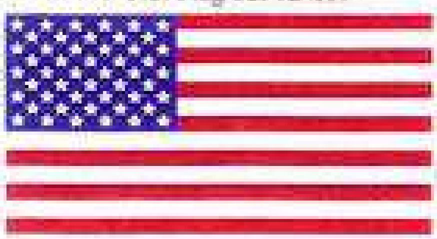


Gold Ball Recruiting

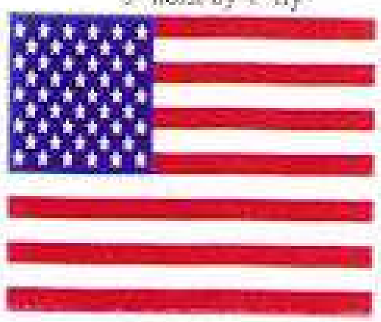
Gold Spire Court-martial

Gold Eagle President, U.S.A.

National:Flag (suspends Constitution)
Army:**Post** Flag AR840-10(a-2)
Similar to U.S. Flag but 12´x17´



National Flag:(suspends Constitution)
Army:**Boat** Flag AR840-10(a-6)
3´ hoist by 4´ fly



Official State Flag

Desecrated State Flag

OUR FLAG

There is only one, official, United: States flag which preserves the rights protected by the U.S.A. Constitution. Under it you are innocent until proven guilty.

National flags are government flags. They do not preserve the U.S.A. Constitutional rights. (You are guilty until proven innocent under them.)

Our flag is red, white and blue (no yellow).

Army
no insignia
Private E-1 (PV1)
Private E-2 (PV2)
Private First Class (PFC)
Corporal (CPL)
Specialist (SPC)
Sergeant (SGT)
Staff Sergeant (SSG)
Sergeant First Class (SFC)
Master Sergeant (MSG)
First Sergeant (1SG)
Sergeant Major (SGM)
Command Sergeant Major (CSM)
Sergeant Major of the Army (SMA)
Marines
no insignia
Private (Pvt)
Private First (PFC)
Lance Corporal (LCpl)
Corporal (Cpl)
Sergeant (Sgt)
Staff Sergeant (SSgt)
Gunnery Sergeant (GySgt)
Master Sergeant (MSgt)
First Sergeant (1stSgt)
Master Gunnery Sergeant (MGySgt)
Sergeant Major (SgtMaj)
Sergeant Major of the Marine Corps (SgtMajMC)
Air Force
no insignia
Airman Basic (AB)
Airman (Amn)
Airman First Class (A1C)
Senior Airman (SrA)
Staff Sergeant (SSgt)
Technical Sergeant (TSgt)
Master Sergeant (MSgt)
First Sergeant (E-7)
Senior Master Sergeant (SMSgt)
First Sergeant (E-8)
Chief Master Sergeant (CMSgt)
First Sergeant (E-9)
Command Chief Master Sergeant (CCM)
Chief Master Sergeant of the Air Force (CMSAF)
Navy
no insignia
Seaman Recruit (SR)
Seaman Apprentice (SA)
Seaman (SN)
Petty Officer Third Class (PO3)
Petty Officer Second Class (PO2)
Petty Officer First Class (PO1)
Chief Petty Officer (CPO)
Senior Chief Petty Officer (SCPO)
Master Chief Petty Officer (MCPO)
Force or Fleet Command Master Chief Petty Officer (FORMC) (FLTMC)
Master Chief Petty Officer of the Navy (MCPON)
Coast Guard
Seaman Recruit (SR)
Seaman Apprentice (SA)
Seaman (SN)
Petty Officer Third Class (PO3)
Petty Officer Second Class (PO2)
Petty Officer First Class (PO1)
Chief Petty Officer (CPO)
Senior Chief Petty Officer (SCPO)
Master Chief Petty Officer (MCPO)
Command Master Chief (CMC)
Master Chief Petty Officer of the Coast Guard (MCPO-CG)

WHERE DID THE TOWERS GO?

THE EVIDENCE OF DIRECTED FREE-ENERGY TECHNOLOGY ON 9/11, BY DR. JUDY WOOD

THEY LITERALLY TURNED TO DUST IN MID-AIR

"They didn't burn up, nor did they slam to the ground, but turned into dust in mid-air" Dr. Judy Wood - "Although they were demolished in such a way as to look as if they fell, they did not fall at all" John Lash - "Those towers literally disintegrated, they went into dust." Jesse Ventura - "A plane hitting the building, should not turn the buildings into dust." George Noory - "Arguably the most important book of the 21st century." Richard D. Hall - "If you don't have Dr. Judy Wood's book, do yourself a favor; buy it, read it." Mel Fabregas

CLASSIFIED FREE-ENERGY TECHNOLOGY REVEALED

Secret Space Programs, Aliens, Inner Earth Civilizations & Atlantis - CLE 2017 Corey Goode


Construction on Mars
Declassified footage of Camp Century, a top secret Arctic base.
aka Project "ICEWORM"
Play (k)


Construction on Mars
Declassified footage of Camp Century, a top secret Arctic base.
aka Project "ICEWORM"

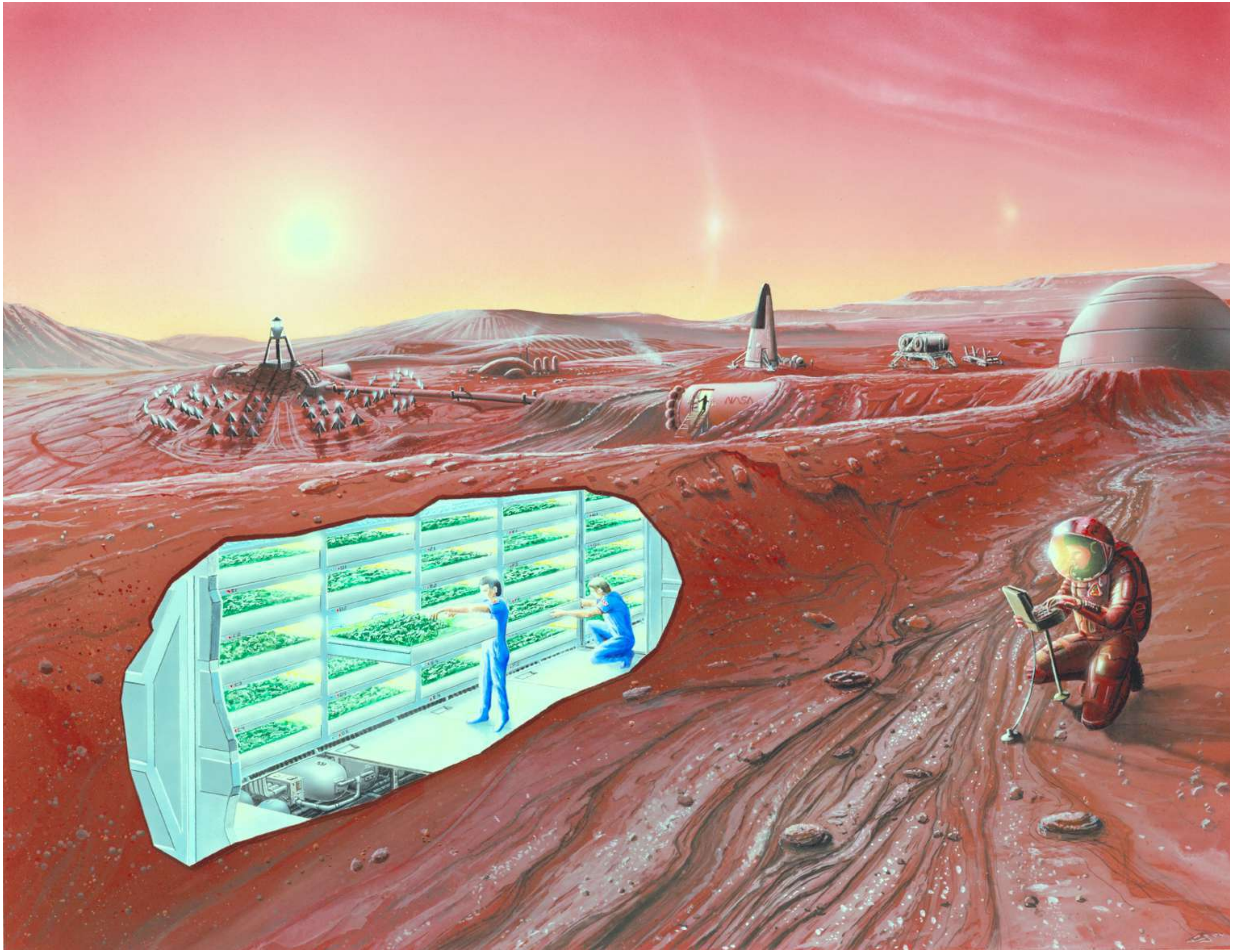

Construction on Mars
Declassified footage of Camp Century, a top secret Arctic base.
aka Project "ICEWORM"


29:21 / 1:18:13


30:01 / 1:18:13
HD


34:00 / 1:18:13
HD

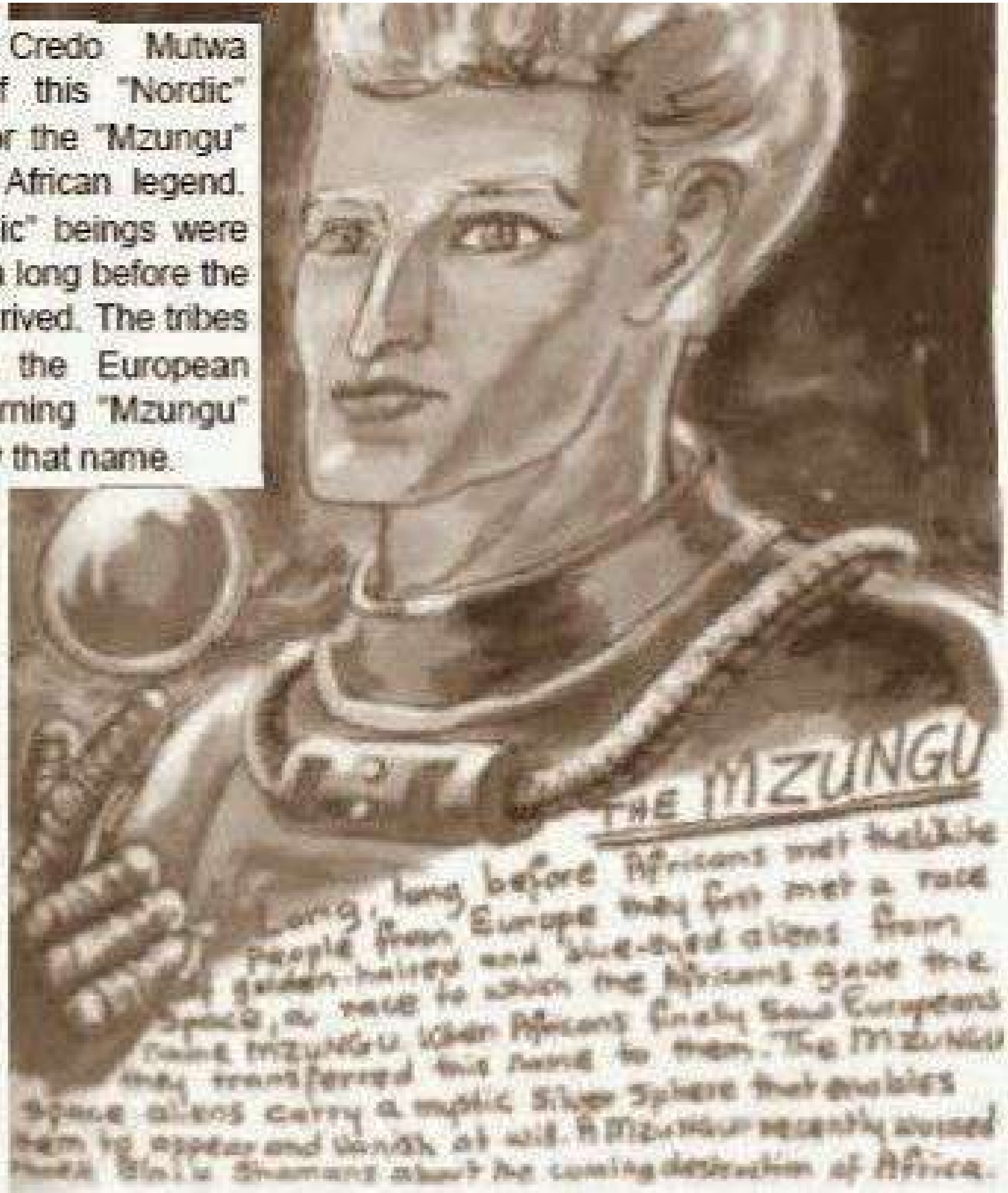

6:54 / 21:15
Images are for Illustrat

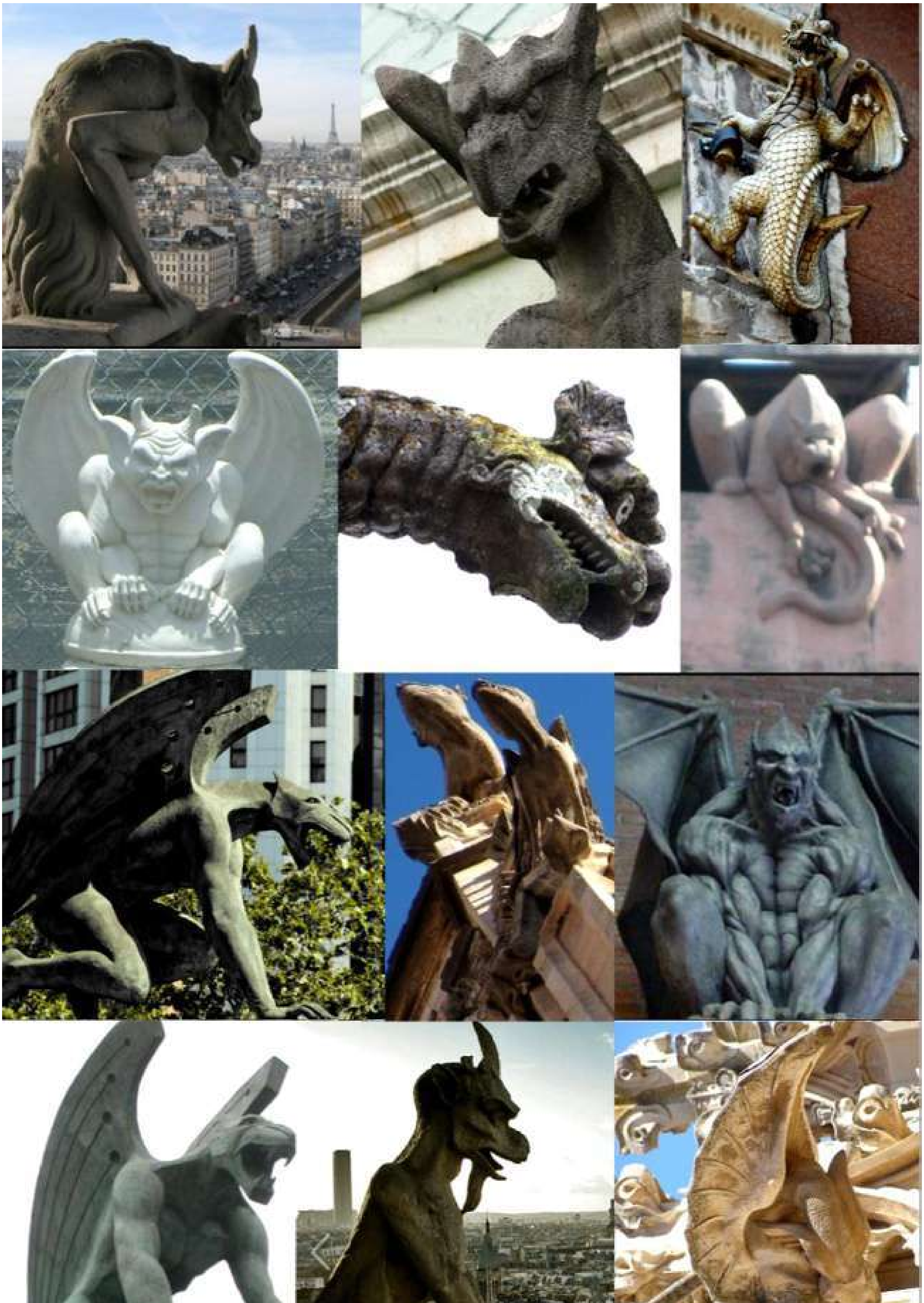

NASA


Credo Vusamazulu
1999

The Zulu shaman Credo Mutwa painted the image of this "Nordic" extraterrestrial figure, or the "Mzungu" as they are called in African legend. These tall, white, "Nordic" beings were widely reported in Africa long before the white Europeans first arrived. The tribes people believed that the European settlers were the returning "Mzungu" and they called them by that name.

Official historian of the Zulu nation





Torture of Credo Mutwa an...
aurora-project.forumfree.it

Torture of Credo Mutwa and th...
aurora-project.forumfree.it

Torture of Credo Mutwa and the Theft ...
aurora-project.forumfree.it

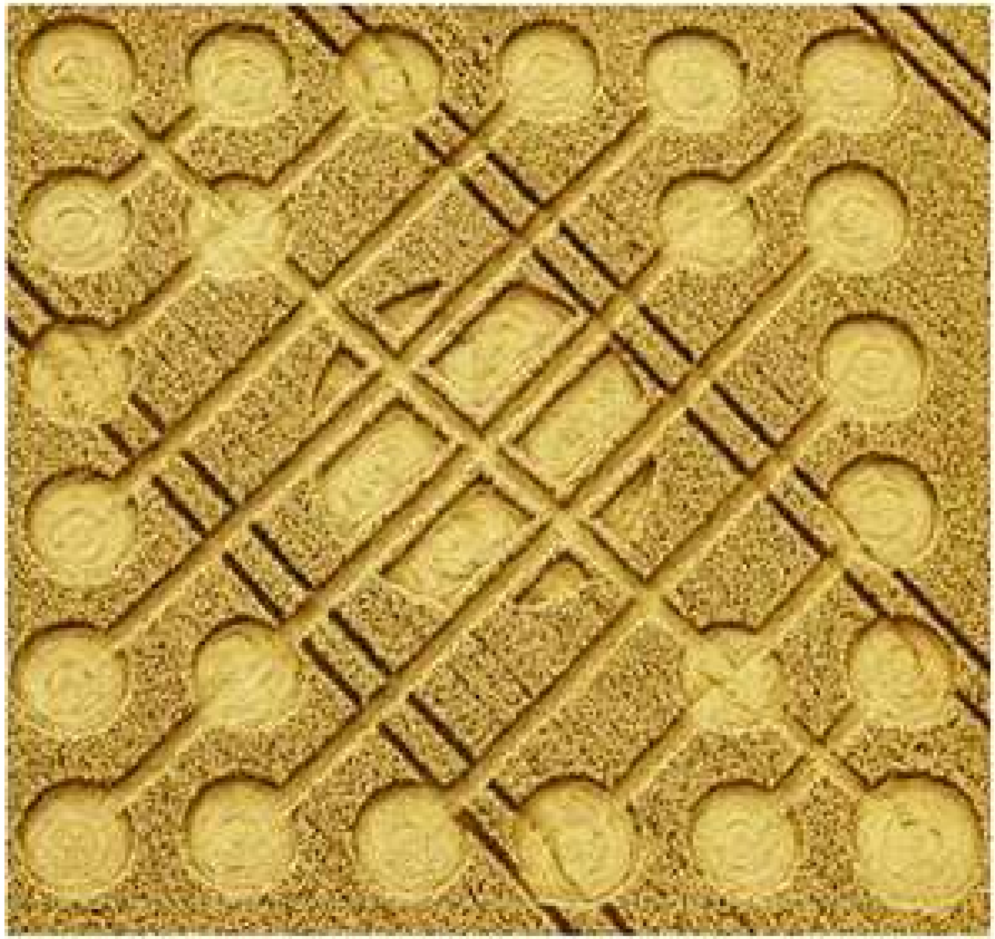
Torture of Credo Mutwa and the Theft ...
aurora-project.forumfree.it

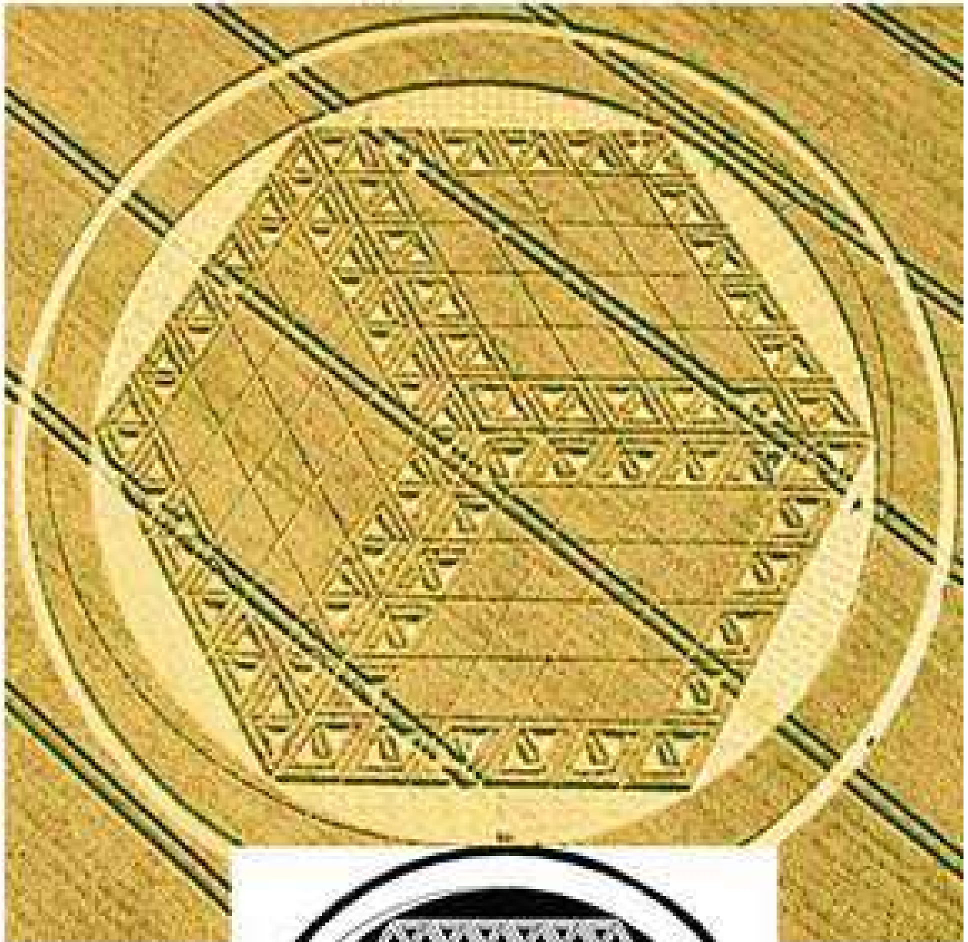

UFOTV

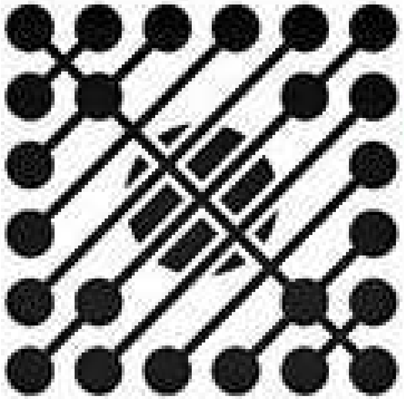

Credo
Mutwa
1979


Credo Vusamazulu Mutwa
1999

Another device which looks like an "antenna" was drawn in crops on August 23, 2012, then became each of six faces of a "Rubik's cube" on August 26, 2012

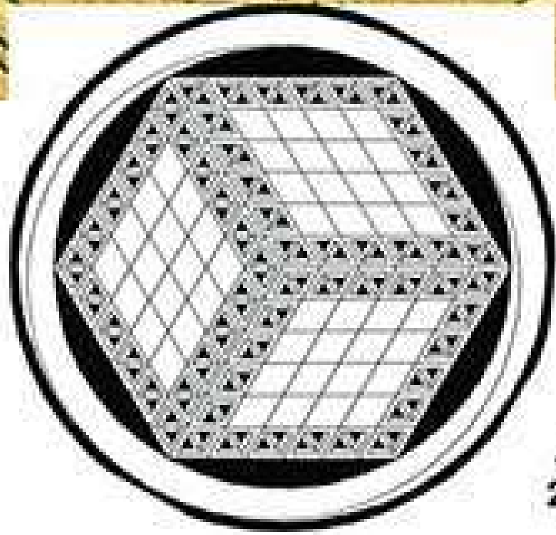






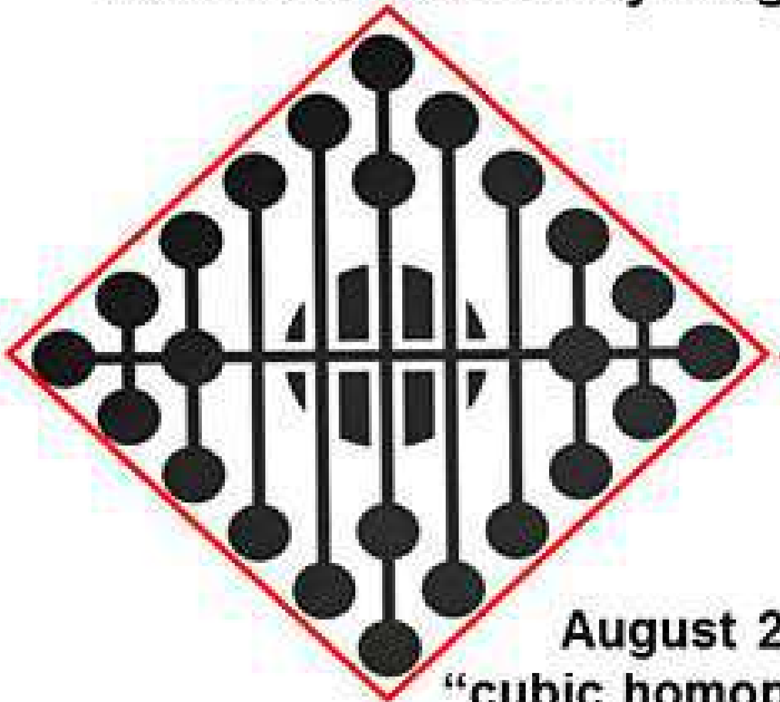
Not made by humans on Earth!

August 23, 2012

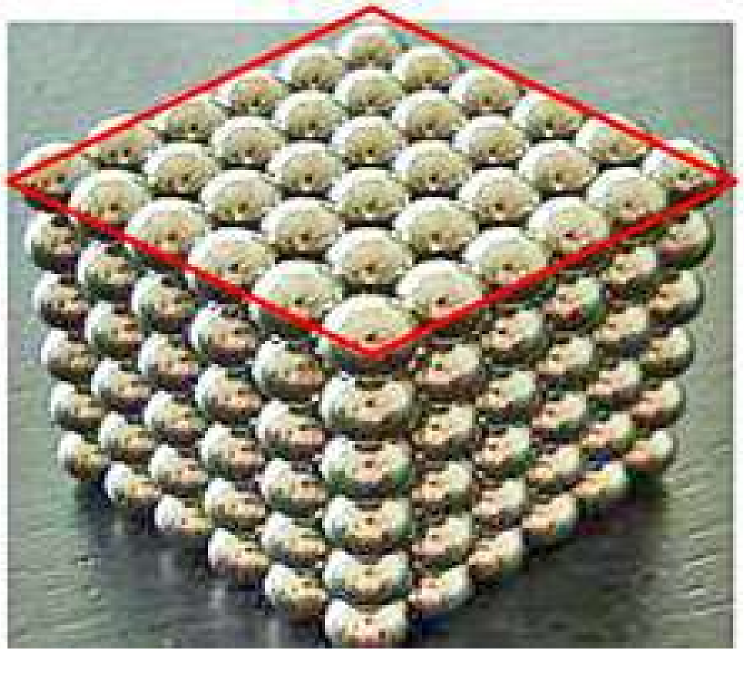


August 26, 2012

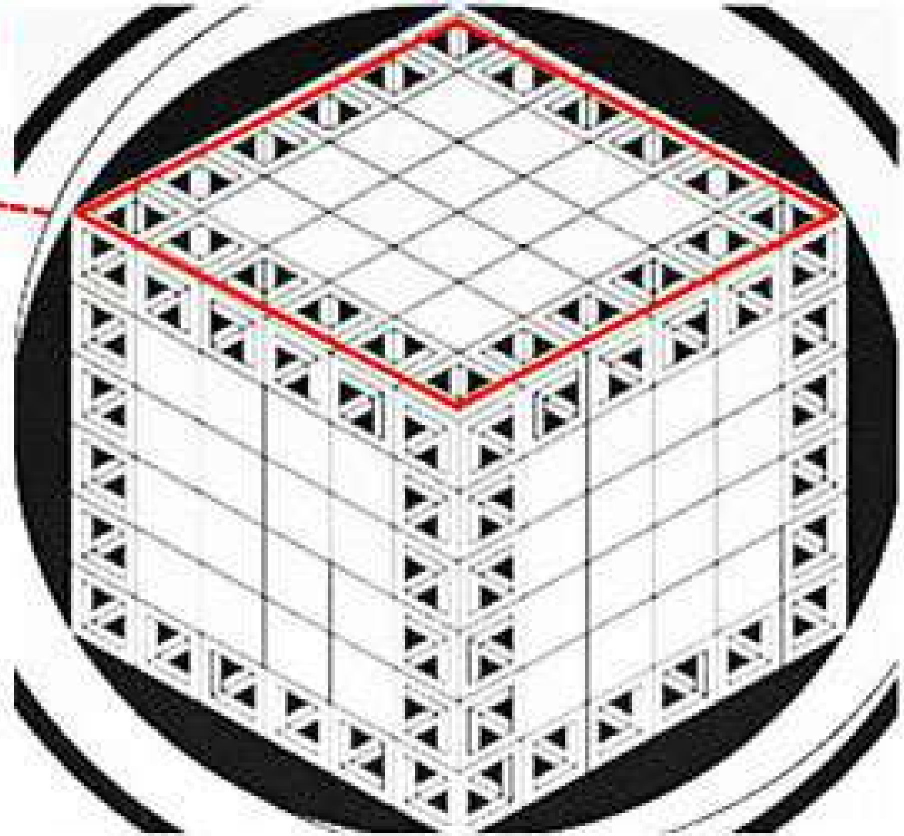
The top of that "cube magnet" was drawn in another crop picture, where it now resembles a toy magnet made from 216 round magnetic balls



top view

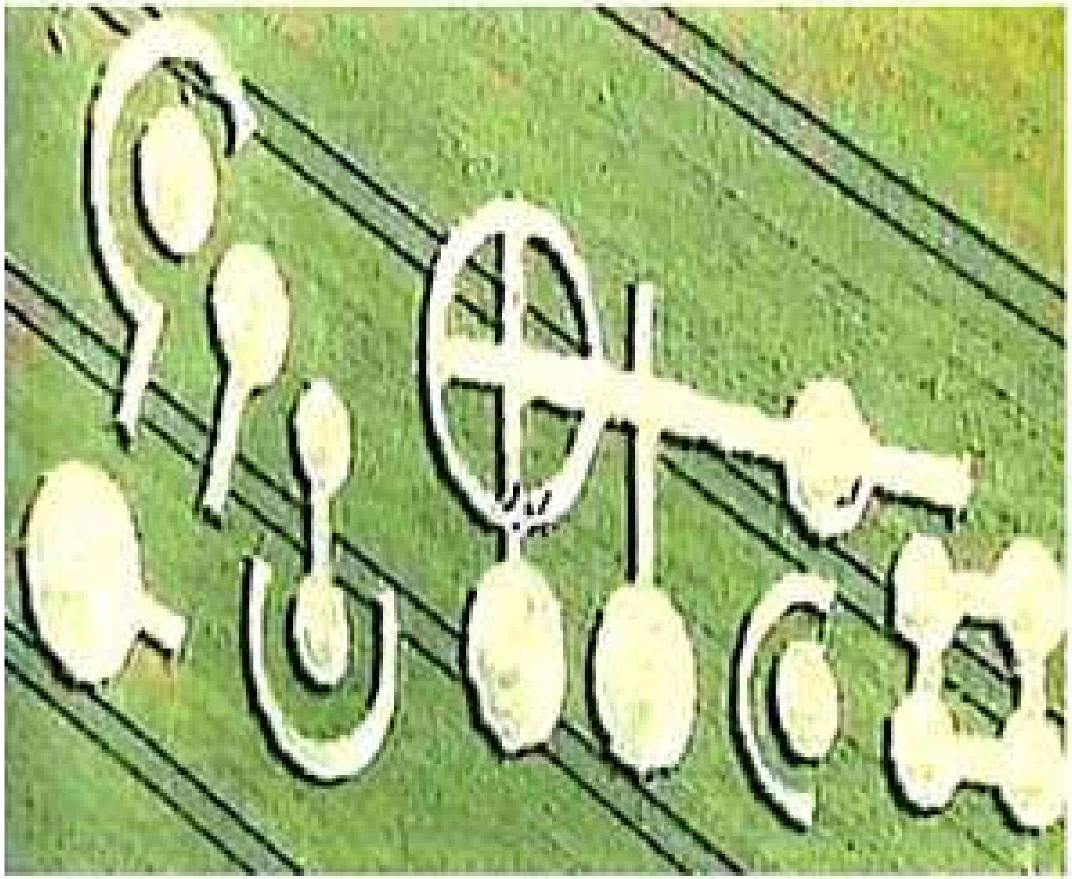


August 23, 2012
"cubic homopolar motor"



August 26, 2012 in crops
"cube magnet"

A possible physical artefact from our distant past shows a modern crop picture from 1991

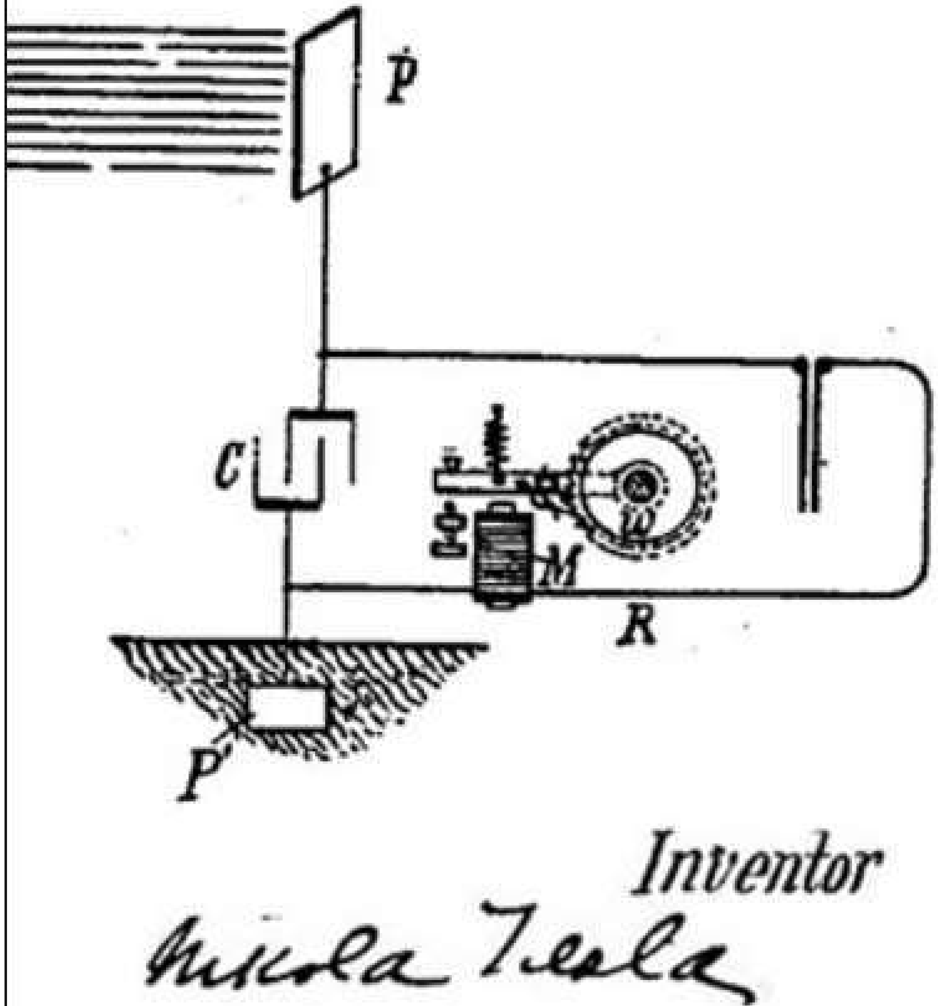


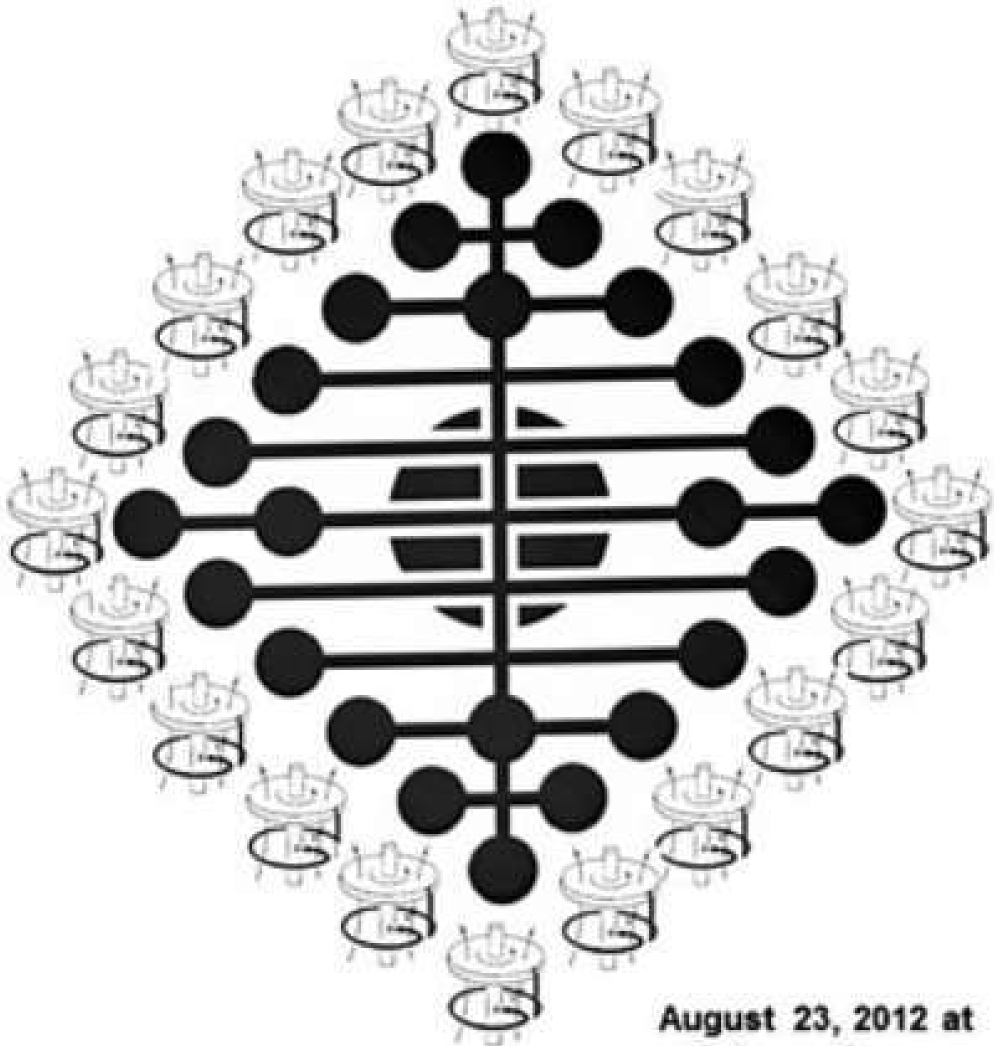
Grasdorf, Germany 1991

buried golden plate

Tesla's "radiant energy receiver" of 1901 used a metal plate P and a capacitor C to collect charged particles from space, which were then discharged into a receiver R, that consisted of an electromagnet M coupled to a mechanical wheel w.

The crop artist device seems to use a dipole antenna to collect electromagnetic waves or particles from space, which then induce weak AC currents that turn a series of self-exciting homopolar generators.



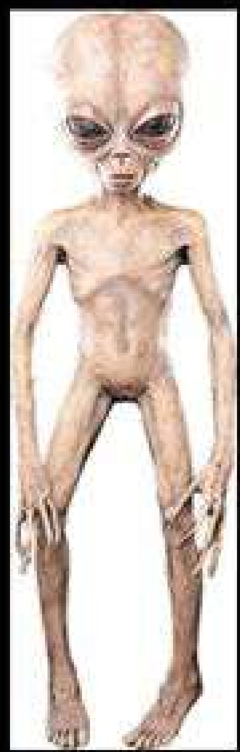


August 23, 2012 at
Oxleaze Copse


IronAmmonite.com

ALIEN AGENDA IS REAL!

Politics & pyramidal structure is the function of their control. The reptilians are in full and total control of planet earth. They are in deep underground secret bases in Dulce, NM. US government NSA secret black op's, 47 levels above top secret, sold us out to the these aliens in exchange for their technology. The breathable air in our atmosphere at present is at 18%, at under 15%, we suffocate of lack of oxygen. The reptilians are planning to wipe us out by 2029 and forcibly control no more then 1 billion. Humanity needs to decide to fight back by educating others and find viable solutions or be forever be enslaved via microchip.

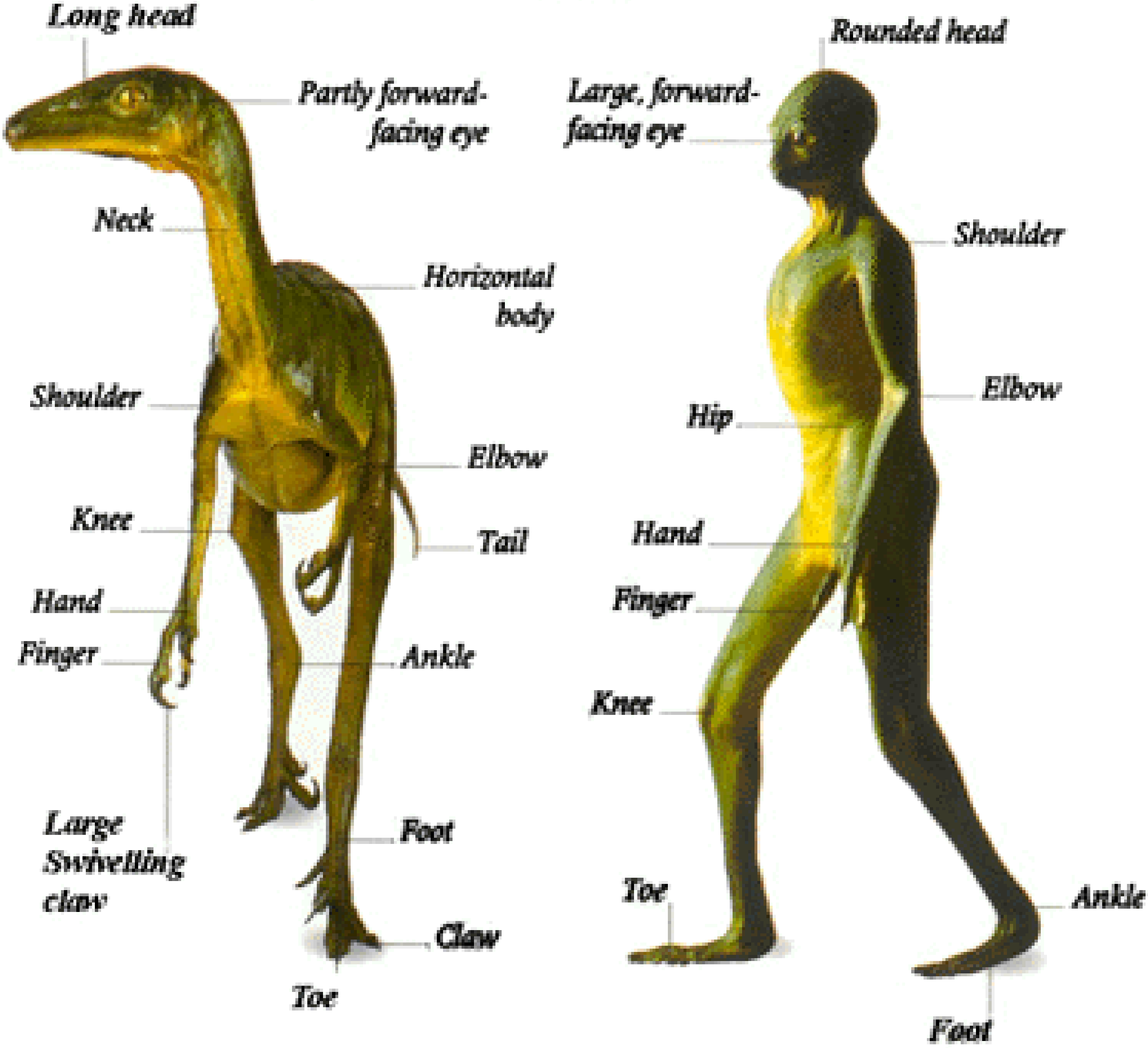


Concept Roberto Csiki 2014

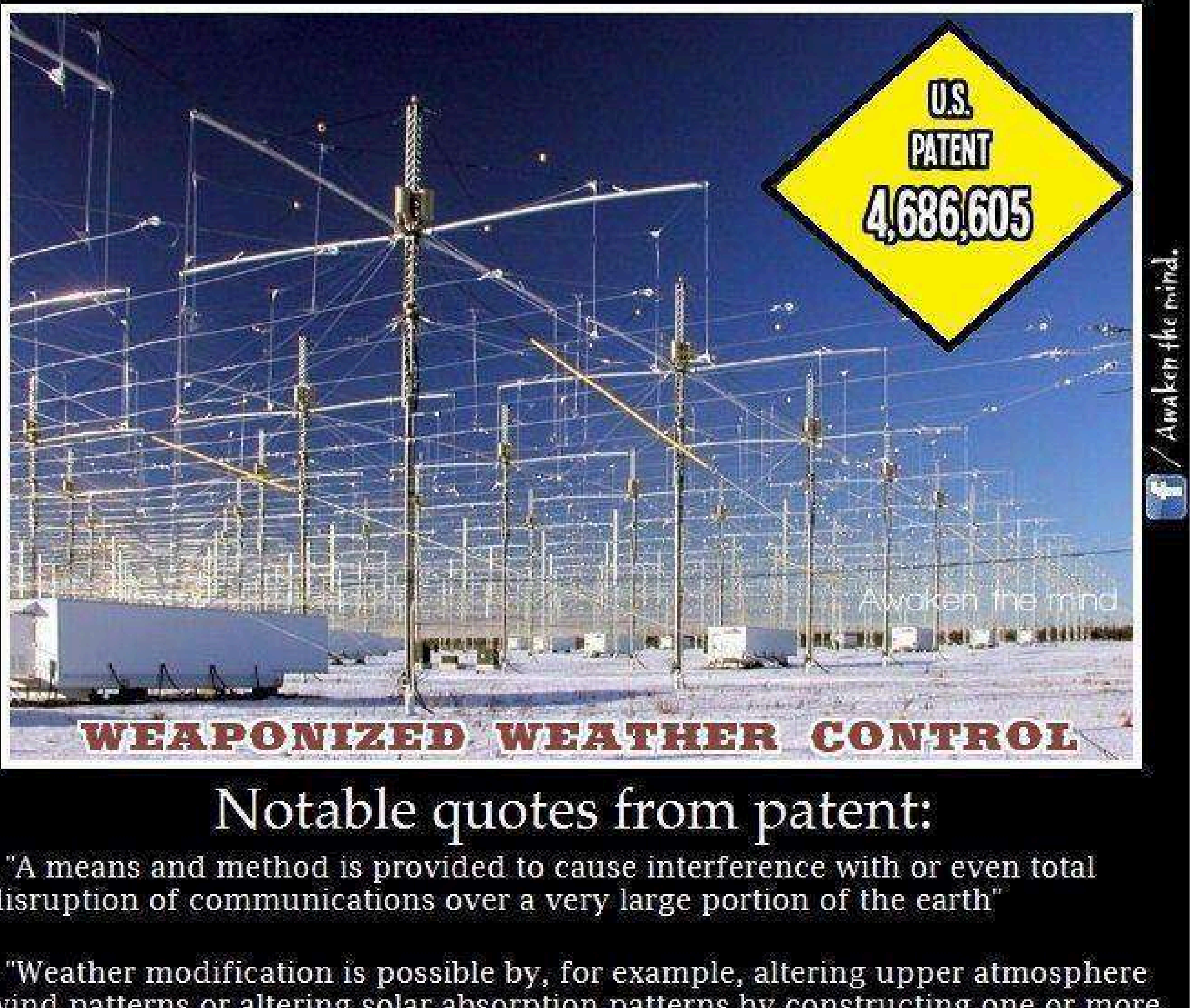

V Final Battle John Unmasked

TROODON AND DINOSAUROID

In the early 1980s, the American palaeontologist Dale Russell suggested that, had dinosaurs survived, the big-brained, bipedal, bird-like *Troodon* with grasping hands (left), might have given rise to an intelligent and human-looking descendant like the "dinosauroid" (right).



HAARP



Notable quotes from patent:

- "A means and method is provided to cause interference with or even total disruption of communications over a very large portion of the earth"

- "Weather modification is possible by, for example, altering upper atmosphere wind patterns or altering solar absorption patterns by constructing one or more plumes of atmospheric particles which will act as a lens or focusing device."

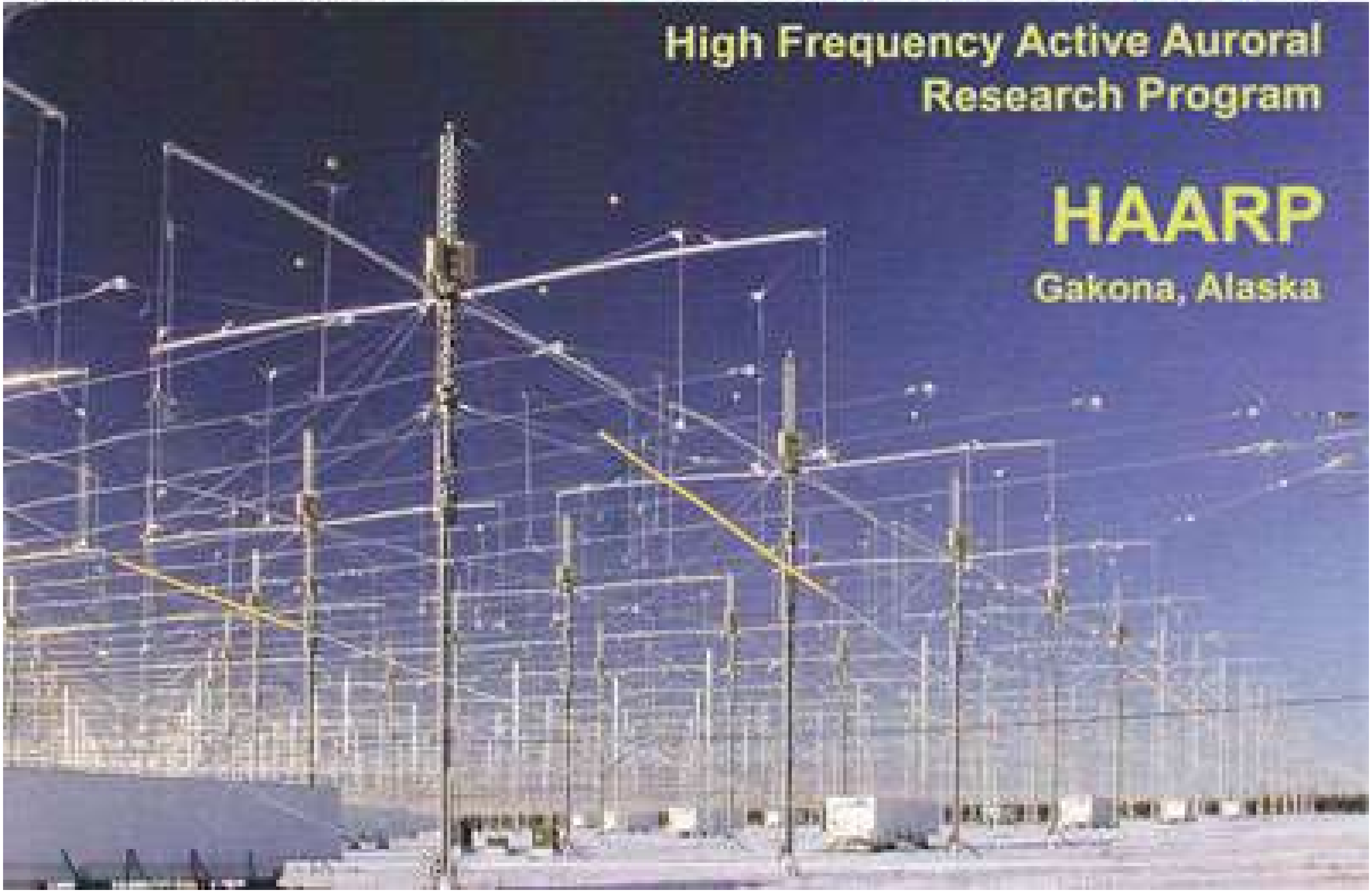
- "The earth's magnetic field could be decreased or disrupted at appropriate altitudes to modify or eliminate the magnetic field."


SBX-1/Mobile HAARP
(X-Band aka "The Golf Ball")
High-Frequency Active Auroral Research Program
#FrequencyWarfare #WeatherModification
@Conscious_god

U.S. Patent 4686605

Issued Aug 11, 1987

"Method and apparatus for altering a region in the earth's atmosphere, ionosphere, and/or magnetosphere"



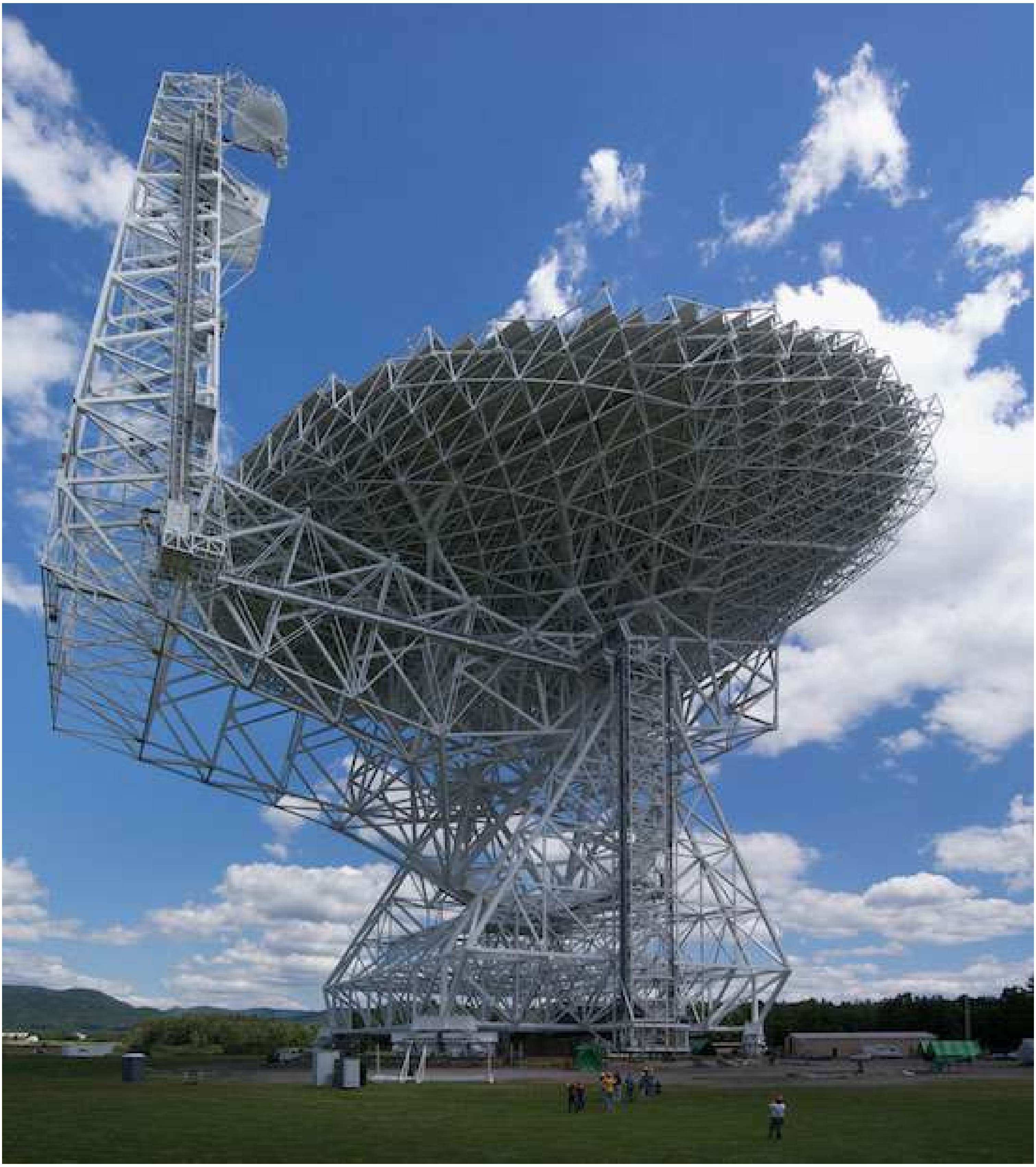
Mass secret torture by Antenna Technology

("VOG - Voice of God Weapons")

GWEN tower emergency system can be transformed and used to broadcast the signals to cause painful effects on the people:

- burning/prickly sensations
- dizziness
- nausea
- pain
- buzzing sound
- vibrations
- sleeplessness
- mood alterations
- hearing tones or tinnitus
- hearing human voices

EXPOSING SATANIC WORLD GOVERNMENT



26 TOWERS- 850 to 1000 FT HIGH

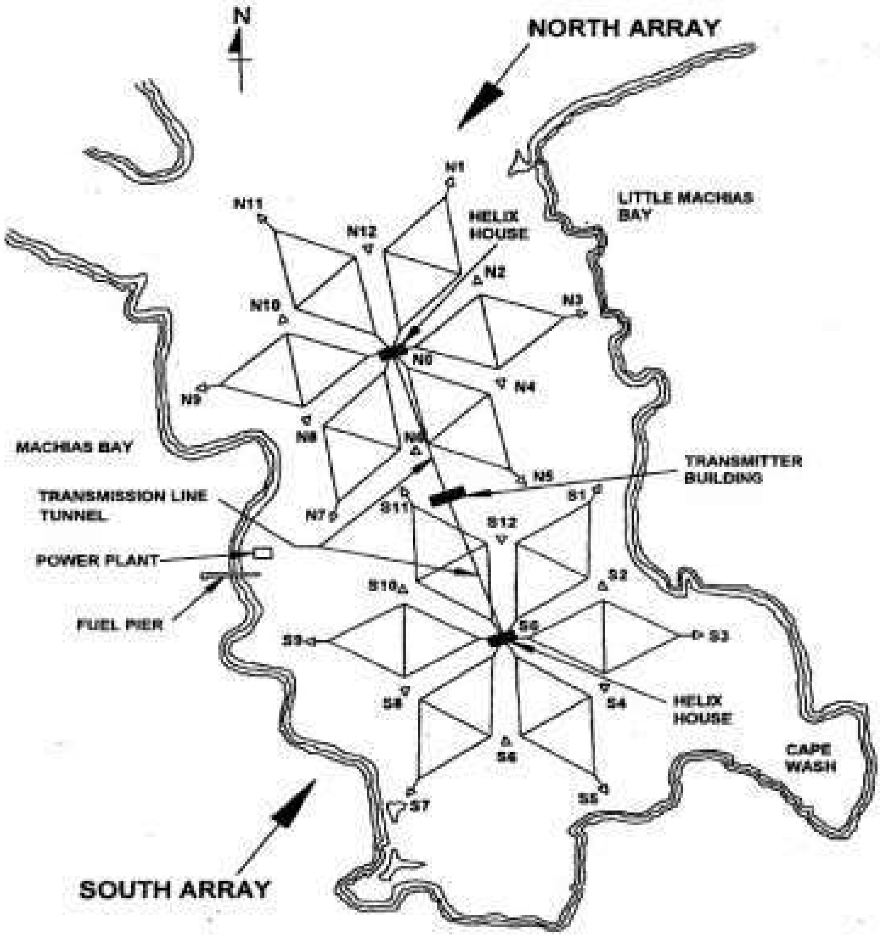
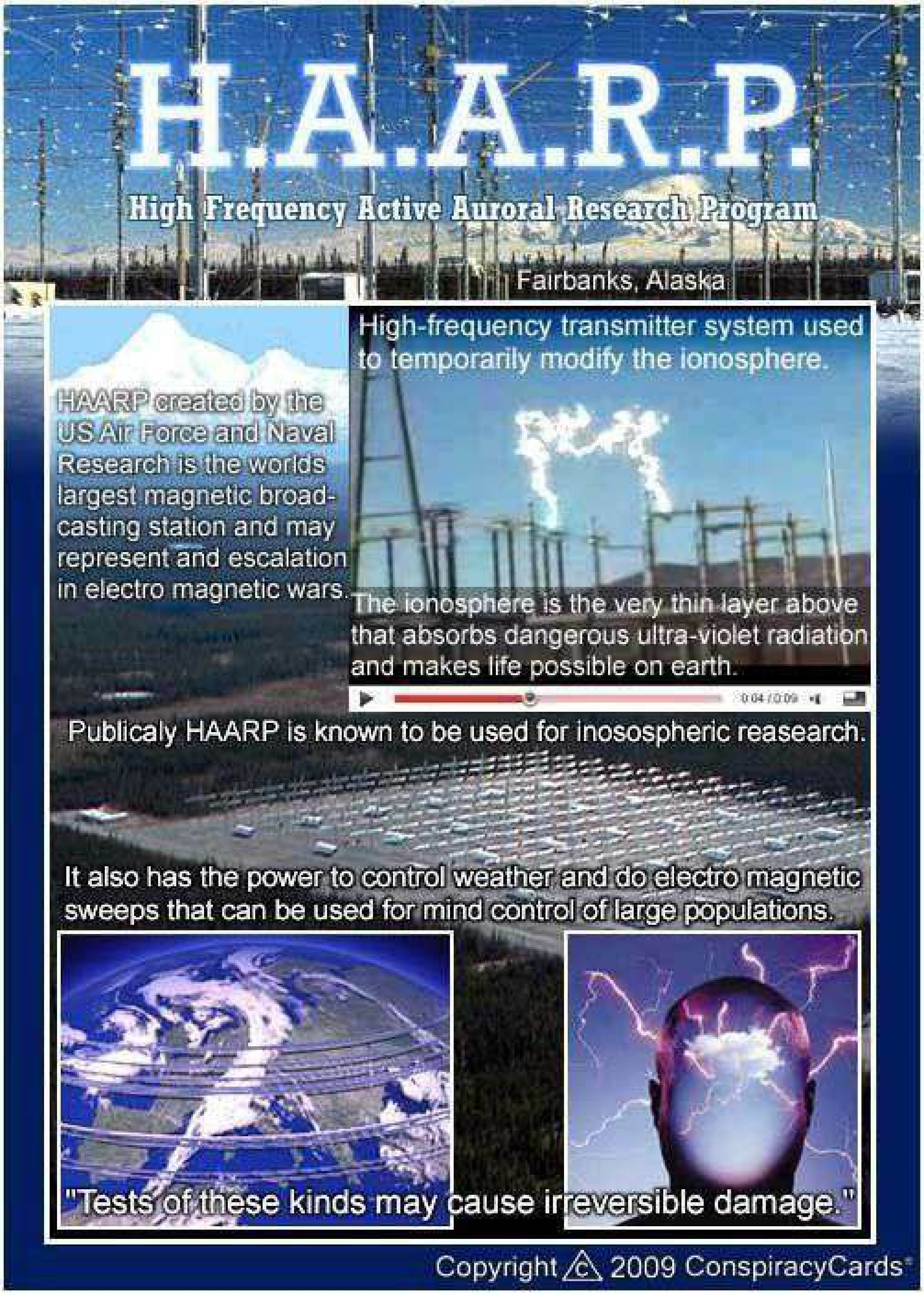


Figure 1. General layout, Cutler Peninsula.


H.A.A.R.P.
High Frequency Active Auroral Research Program
Fairbanks, Alaska
High-frequency transmitter system used to temporarily modify the ionosphere.
HAARP created by the US Air Force and Naval Research is the worlds largest magnetic broad-casting station and may represent and escalation in electro magnetic wars.
The ionosphere is the very thin layer above that absorbs dangerous ultra-violet radiation and makes life possible on earth.
0:04 / 0:09
Publicaly HAARP is known to be used for inosospheric reasearch.
It also has the power to control weather and do electro magnetic sweeps that can be used for mind control of large populations.
"Tests of these kinds may cause irreversible damage."
Copyright © 2009 ConspiracyCards

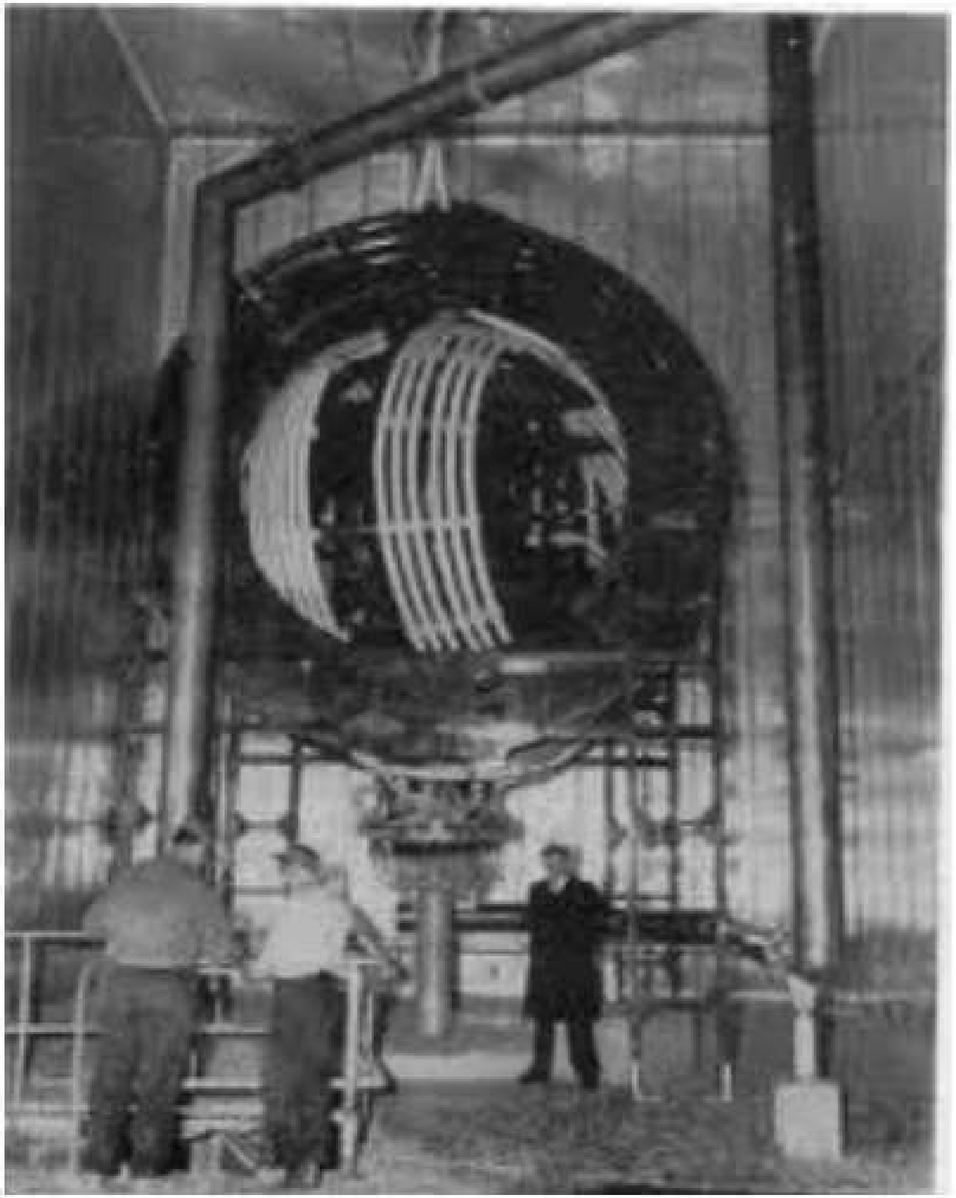

If You knew what these were?
You would tear every single
one of them!
This is a weapon authorities use
to control population.
It's a microwave transponder and
receiver.
They can read your mind with this.
Google mind control technology
used by secret services


Power Generation Building
and Future Operations Center
48 Element
HF Antenna Array
Temporary
Operations Center
Temporary
Riometer Pad
Aircraft Alert Radar

TUNING NETWORK- HELIX

Ref 8

TUNING NETWORK-VARIOMETER



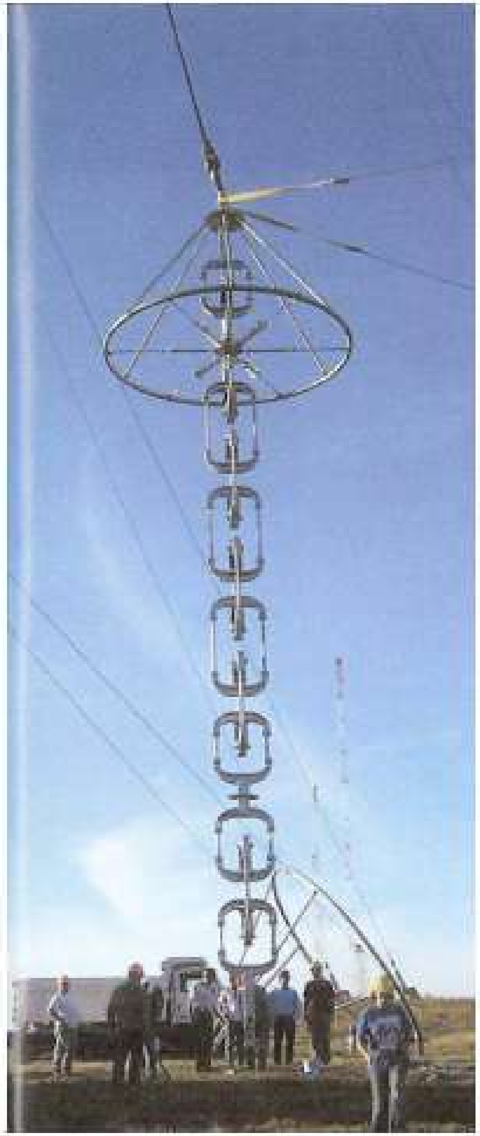
Ref 5 NAA Wires are 4 inches diameter NSS JP Hawkins

SUBMARINE RADIO RECEIVERS

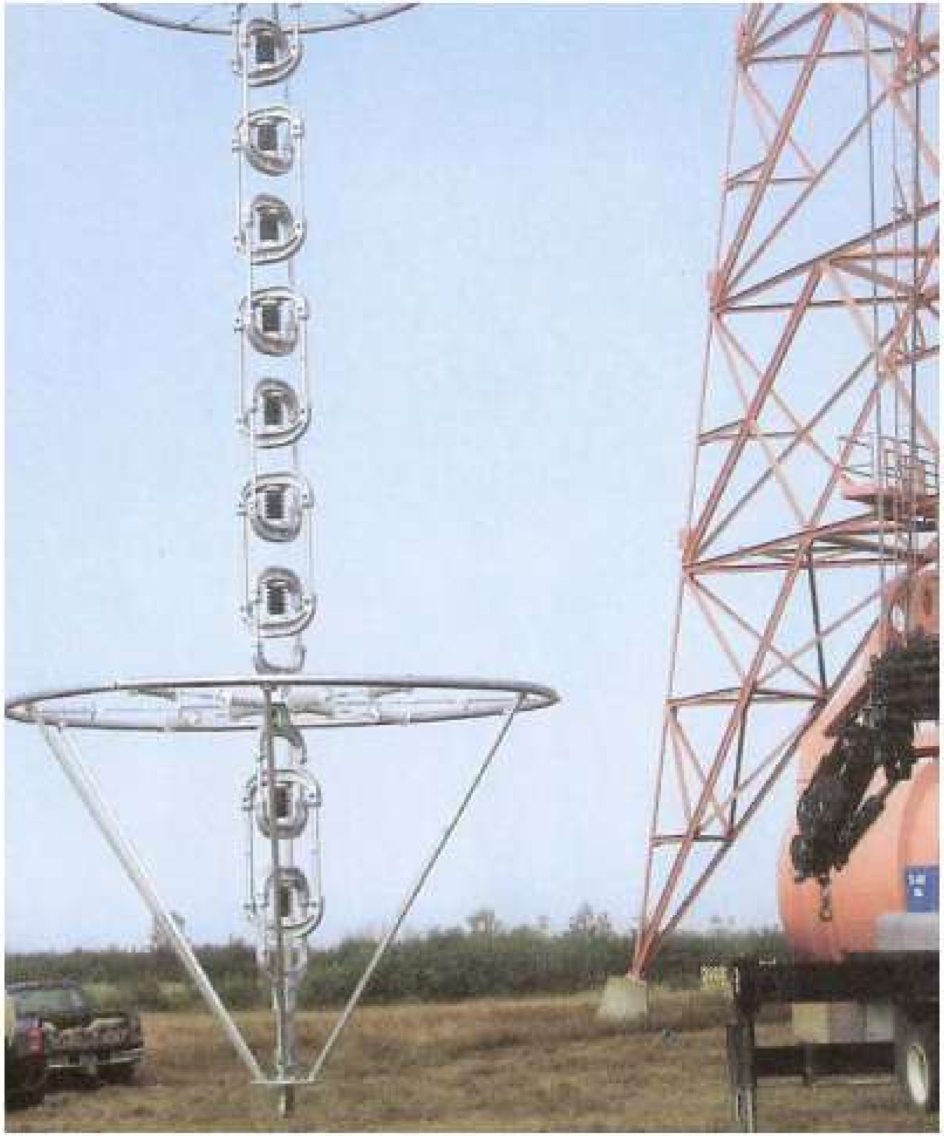
USS Robert E Lee 1966

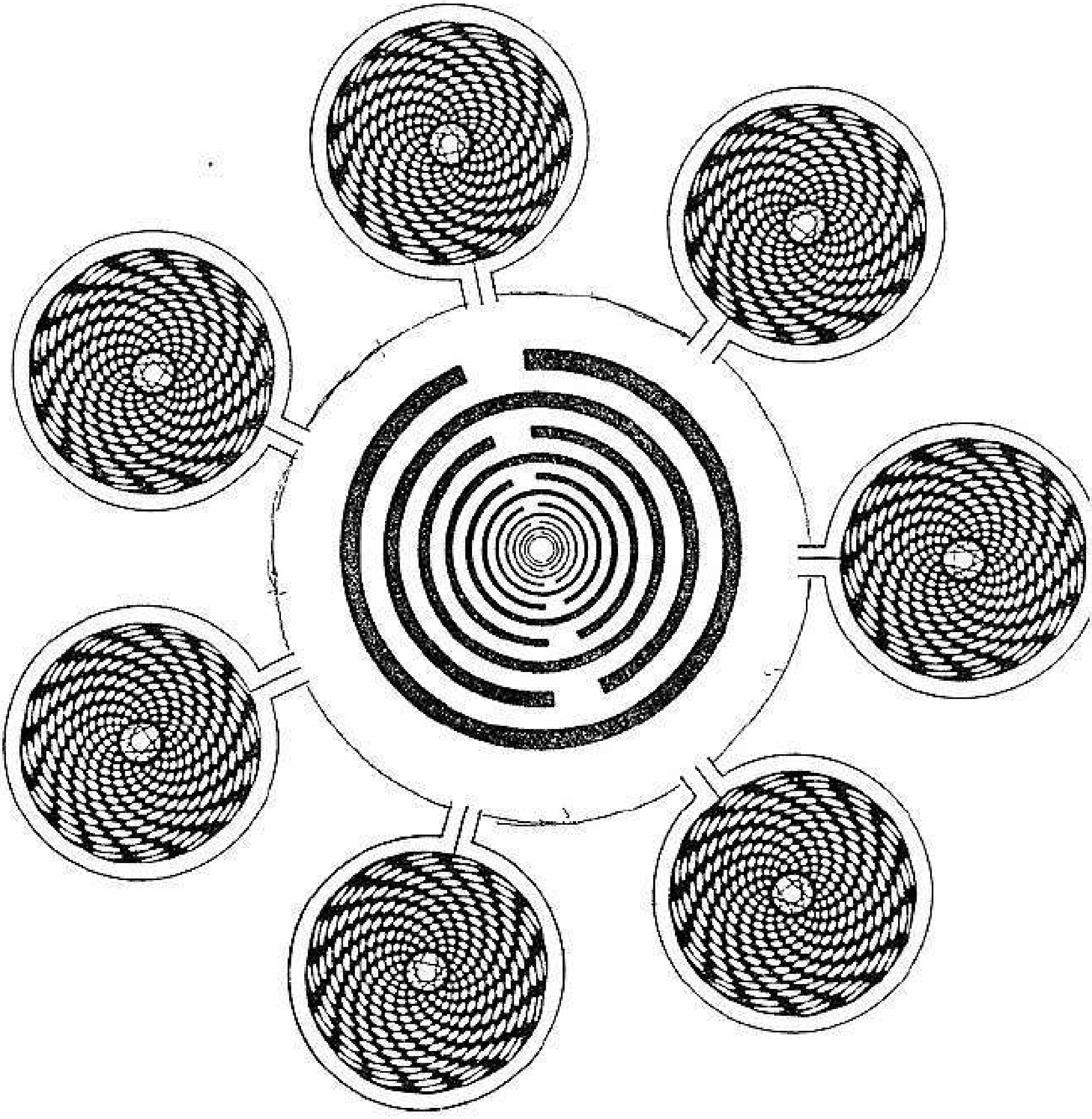
USS Nautilus 1970s

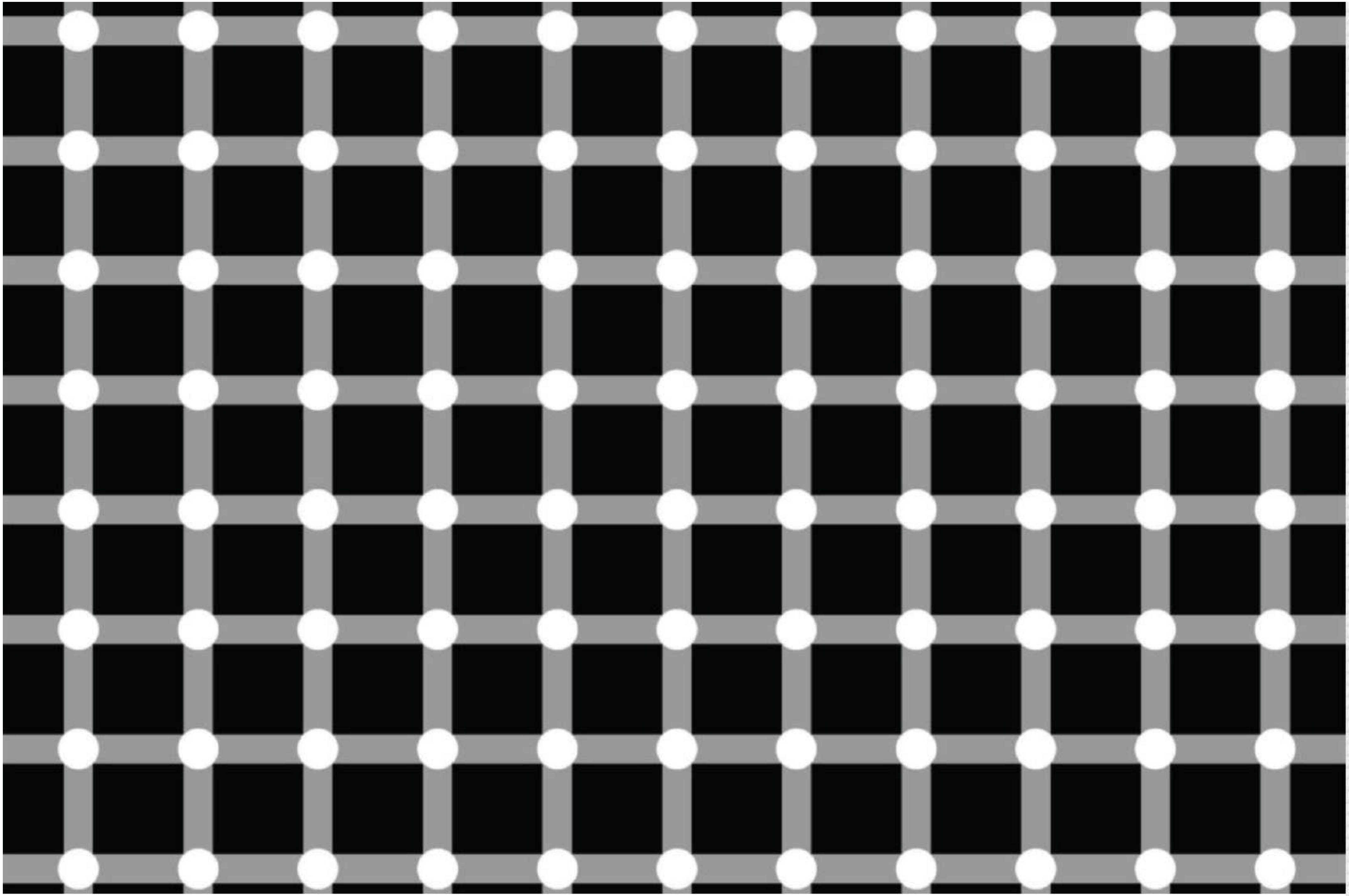
EACH INSULATOR IS 57 FT LONG TO WITHSTAND 250 KV

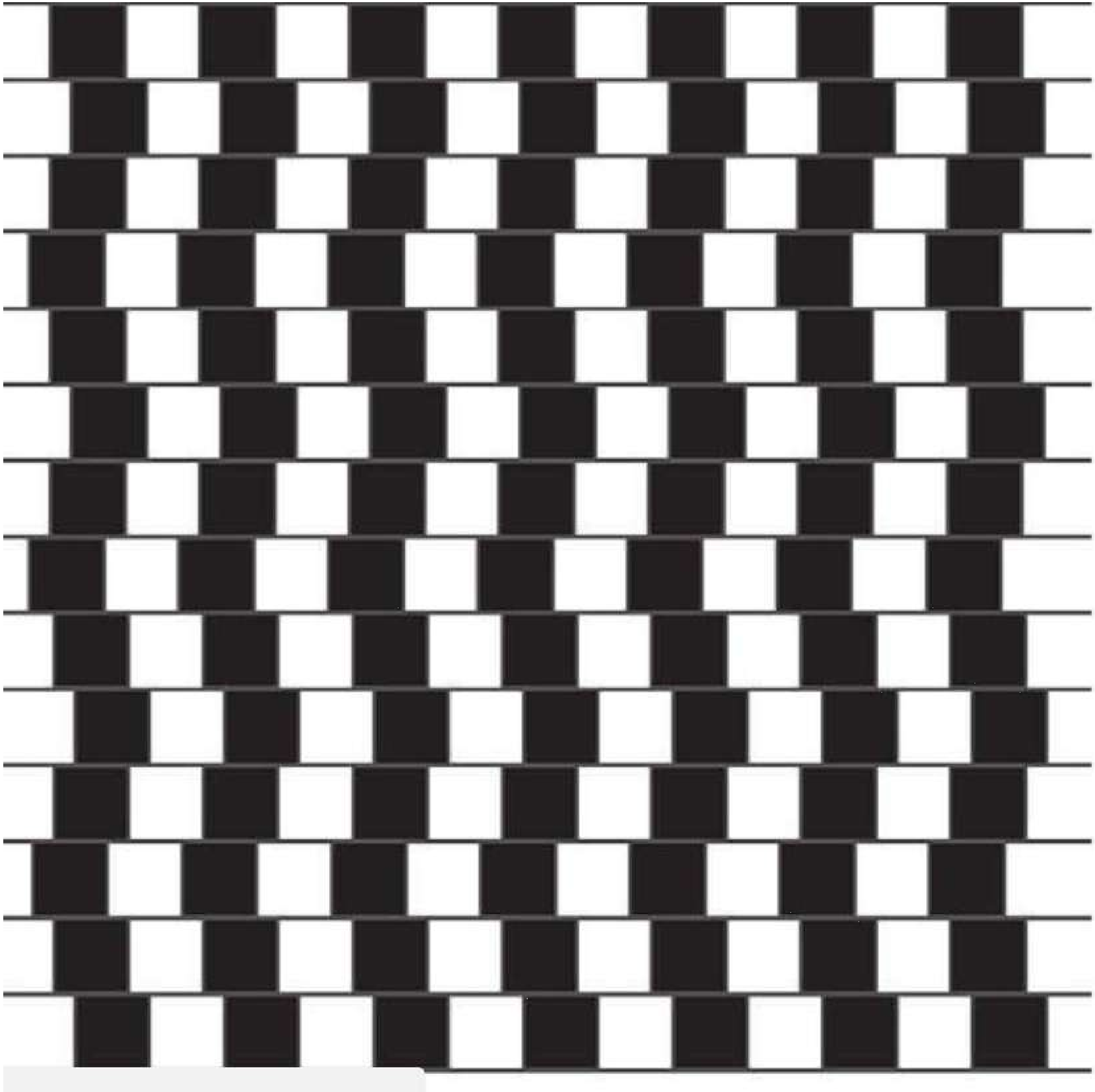


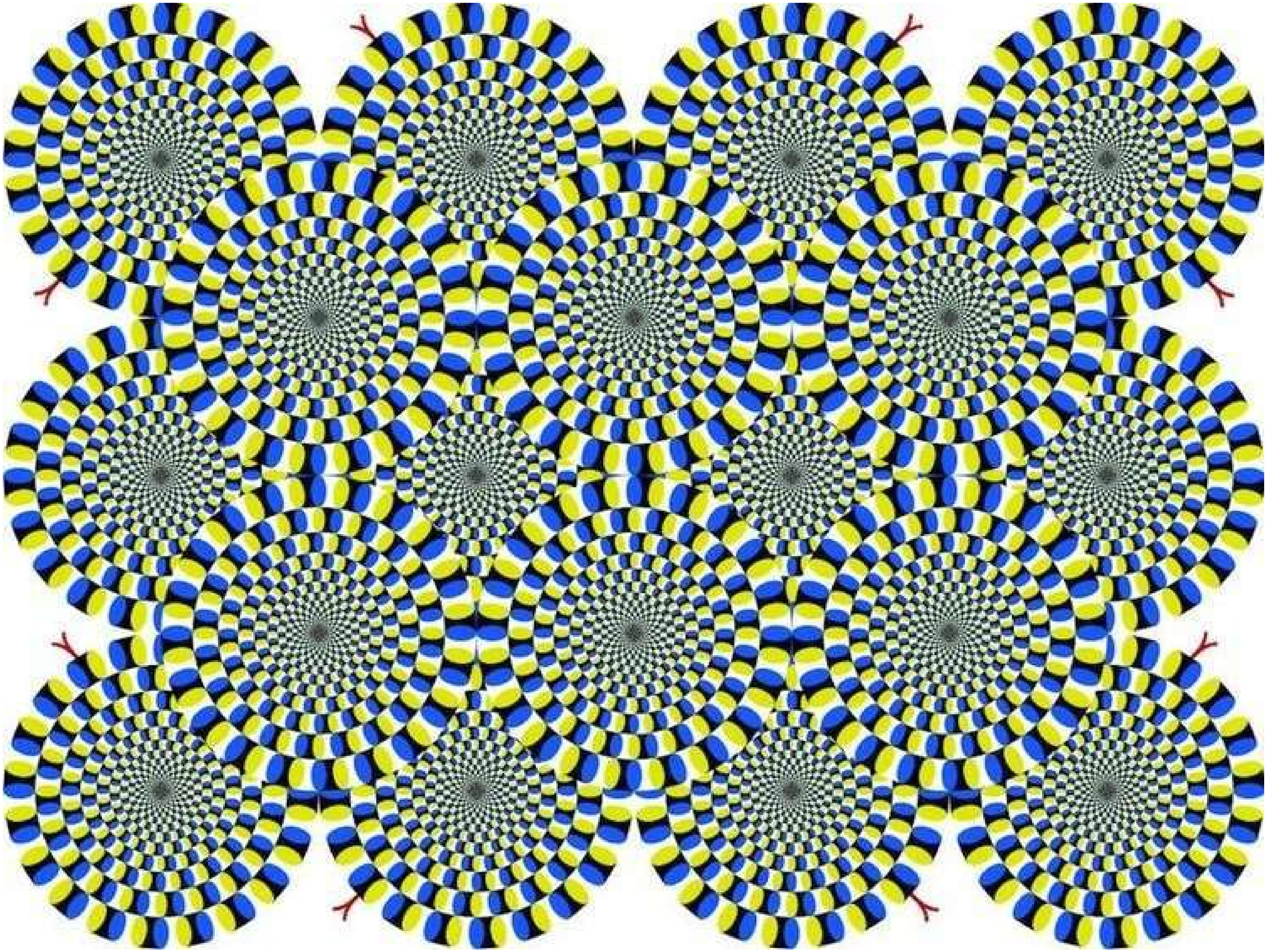
13,000 lbs.

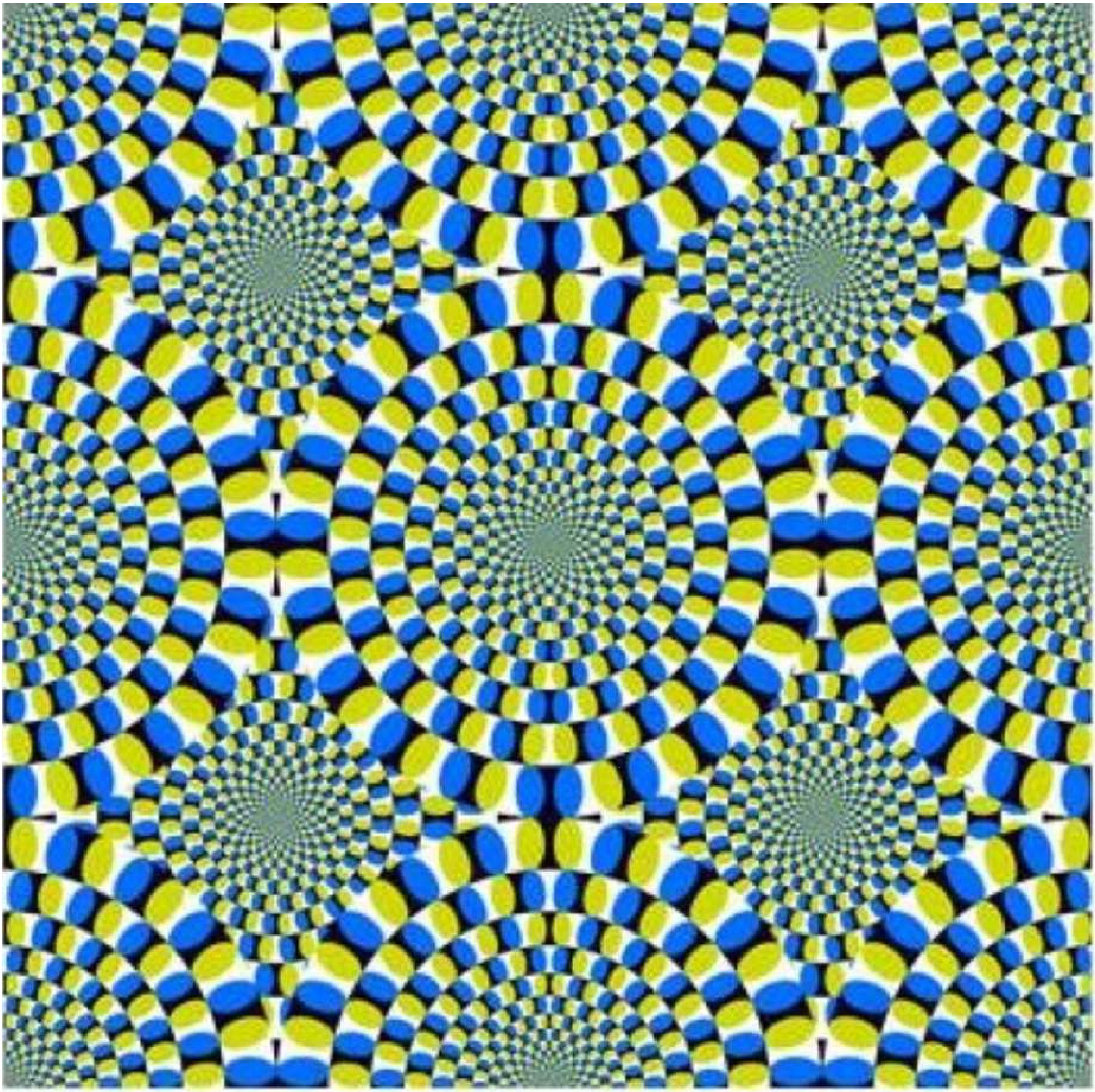


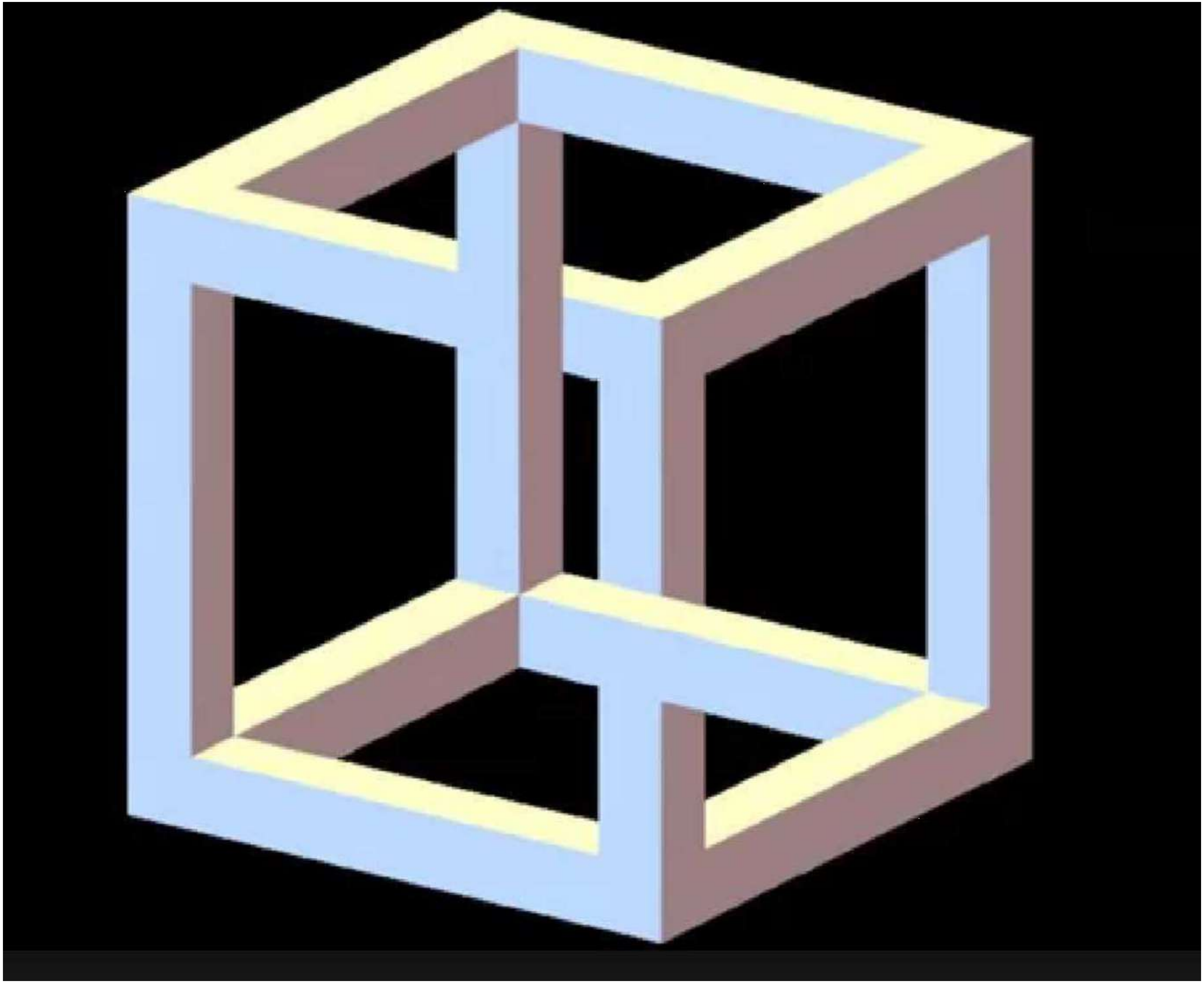


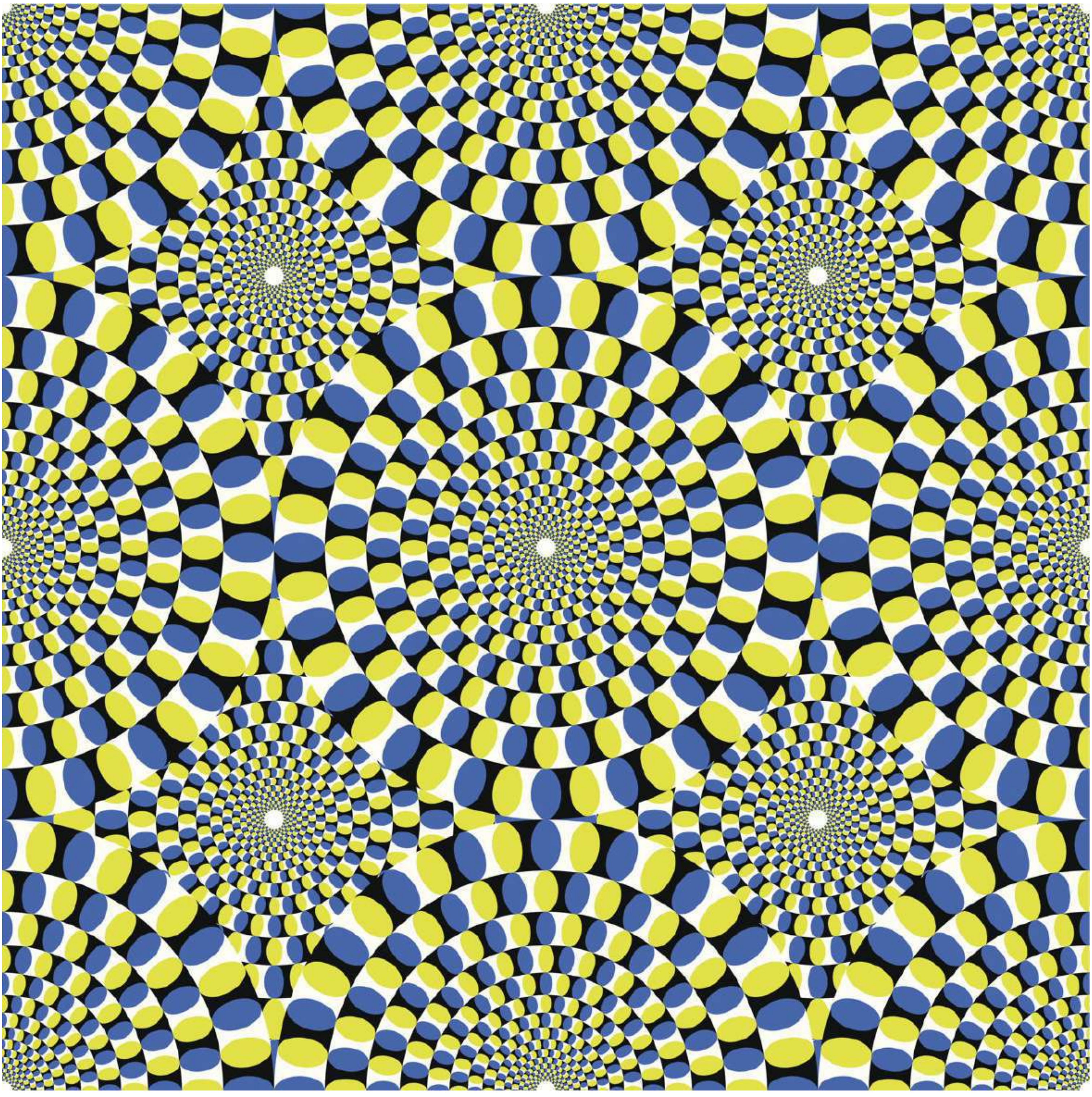


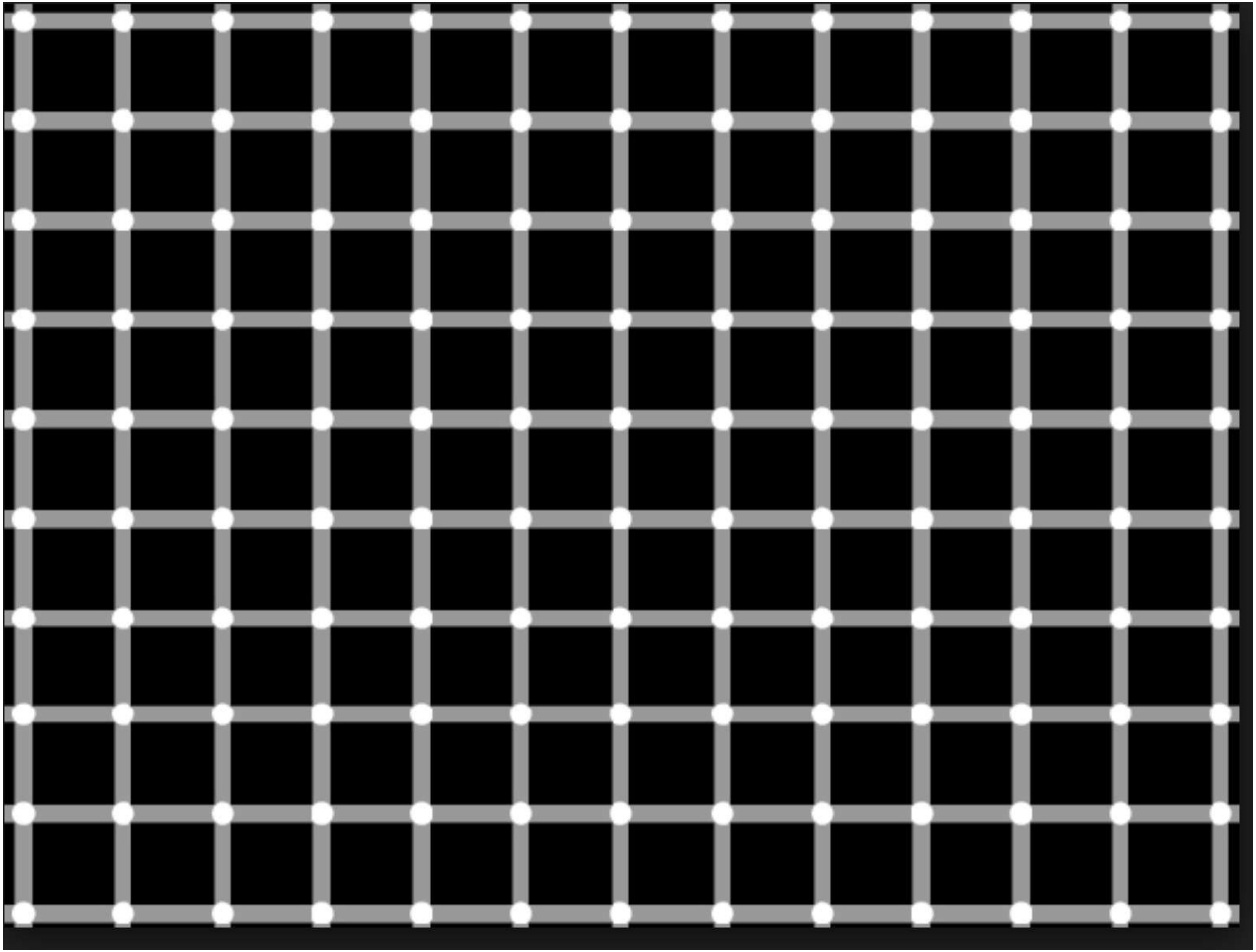


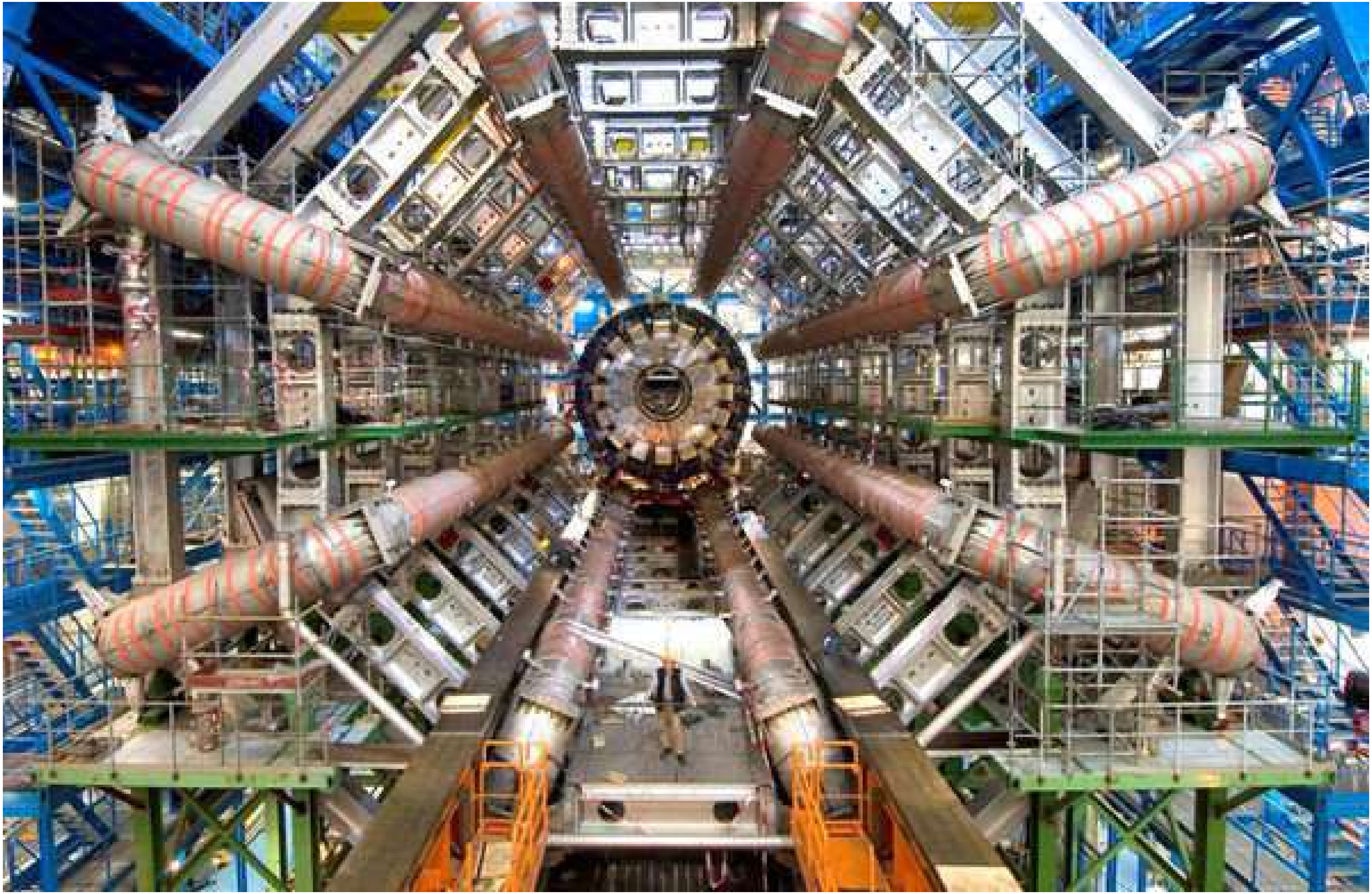


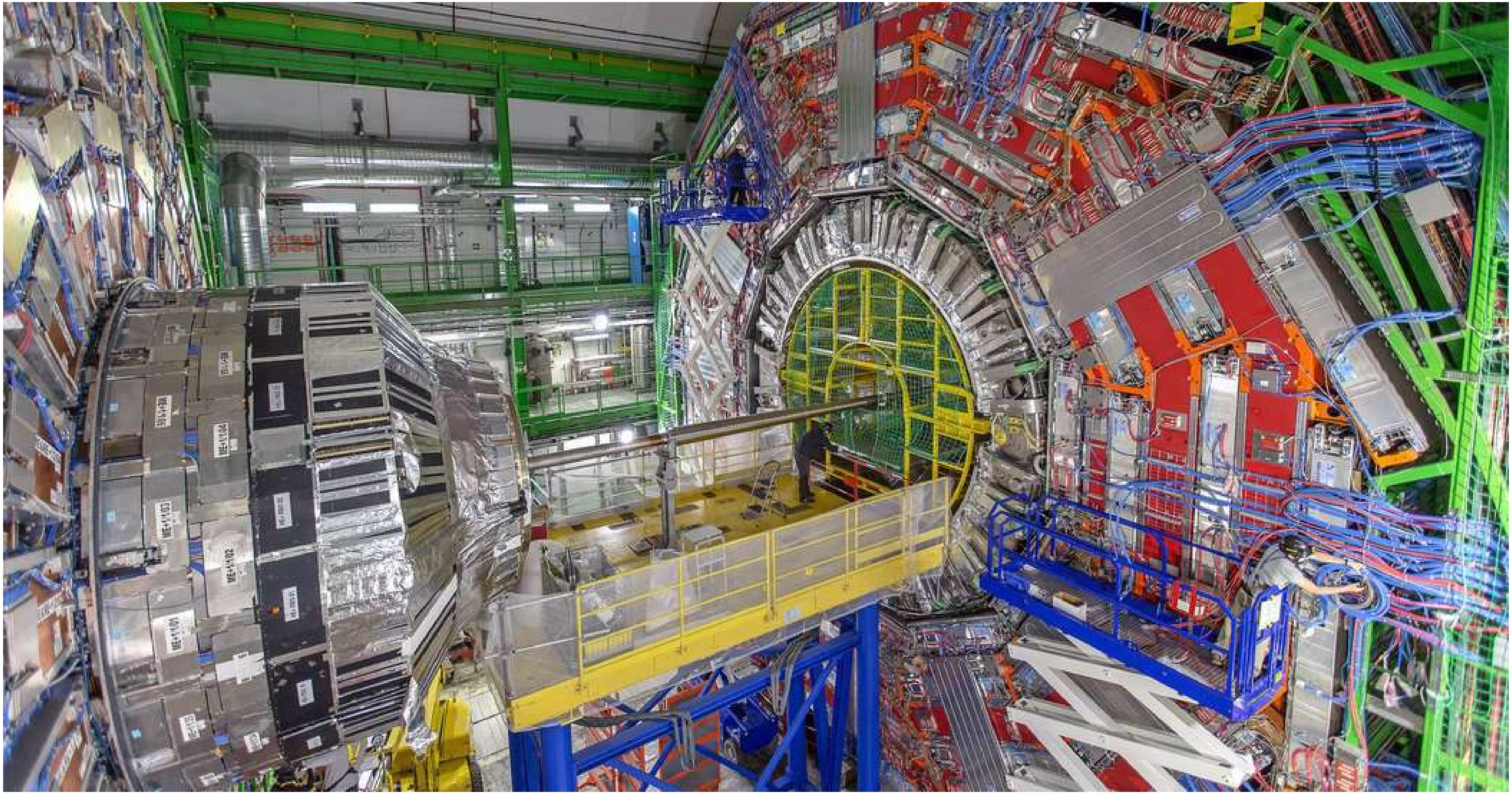


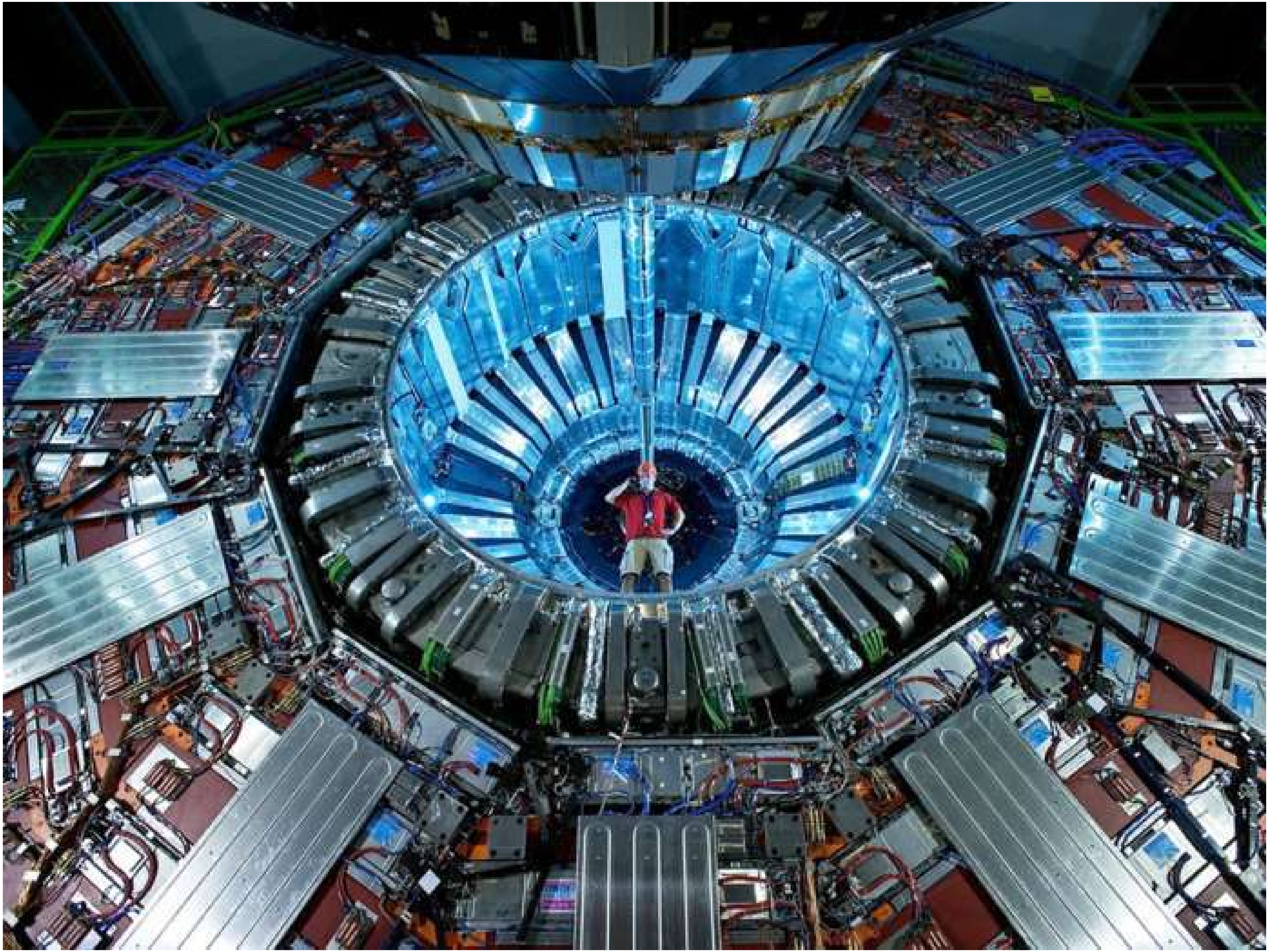


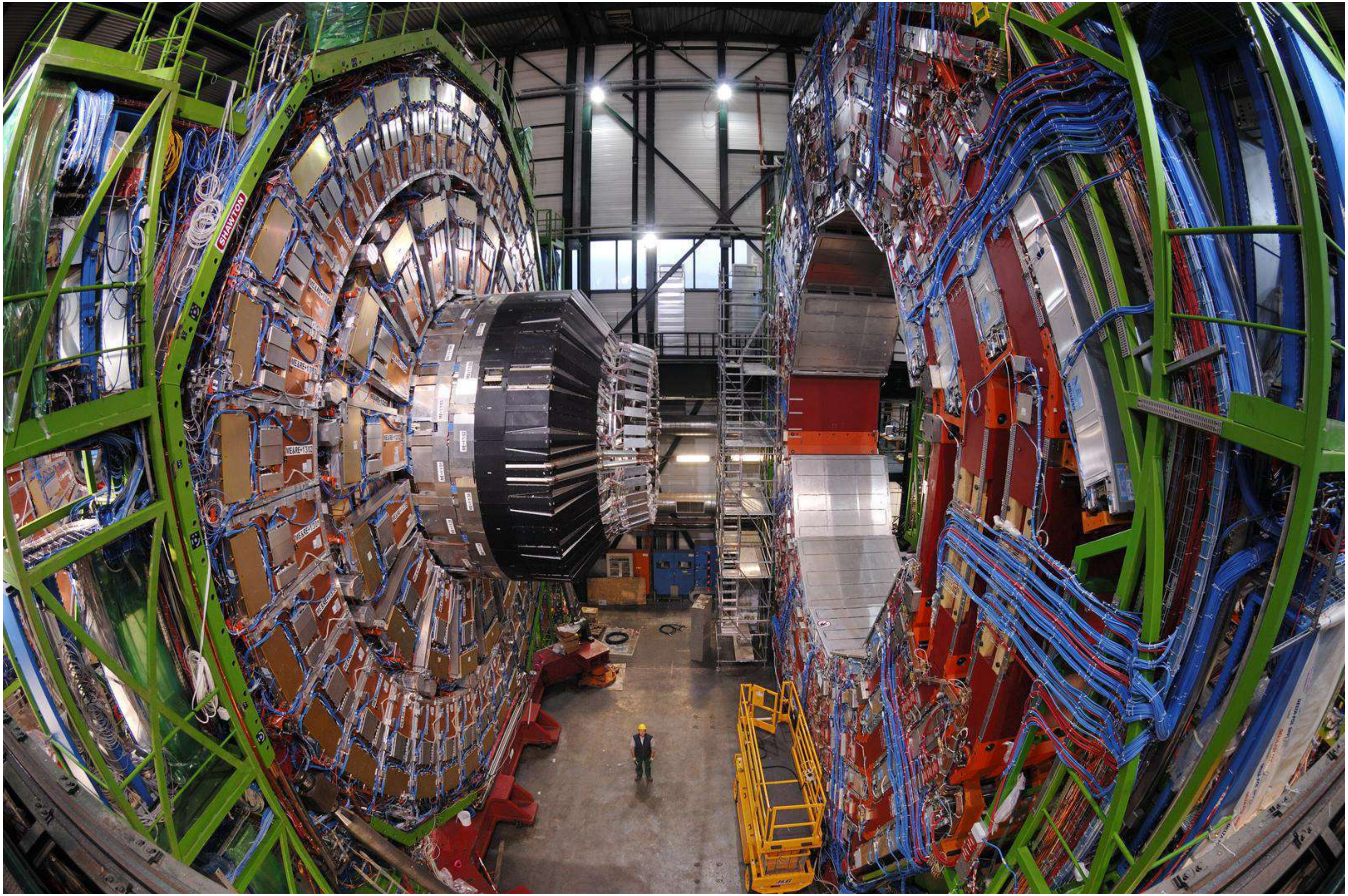


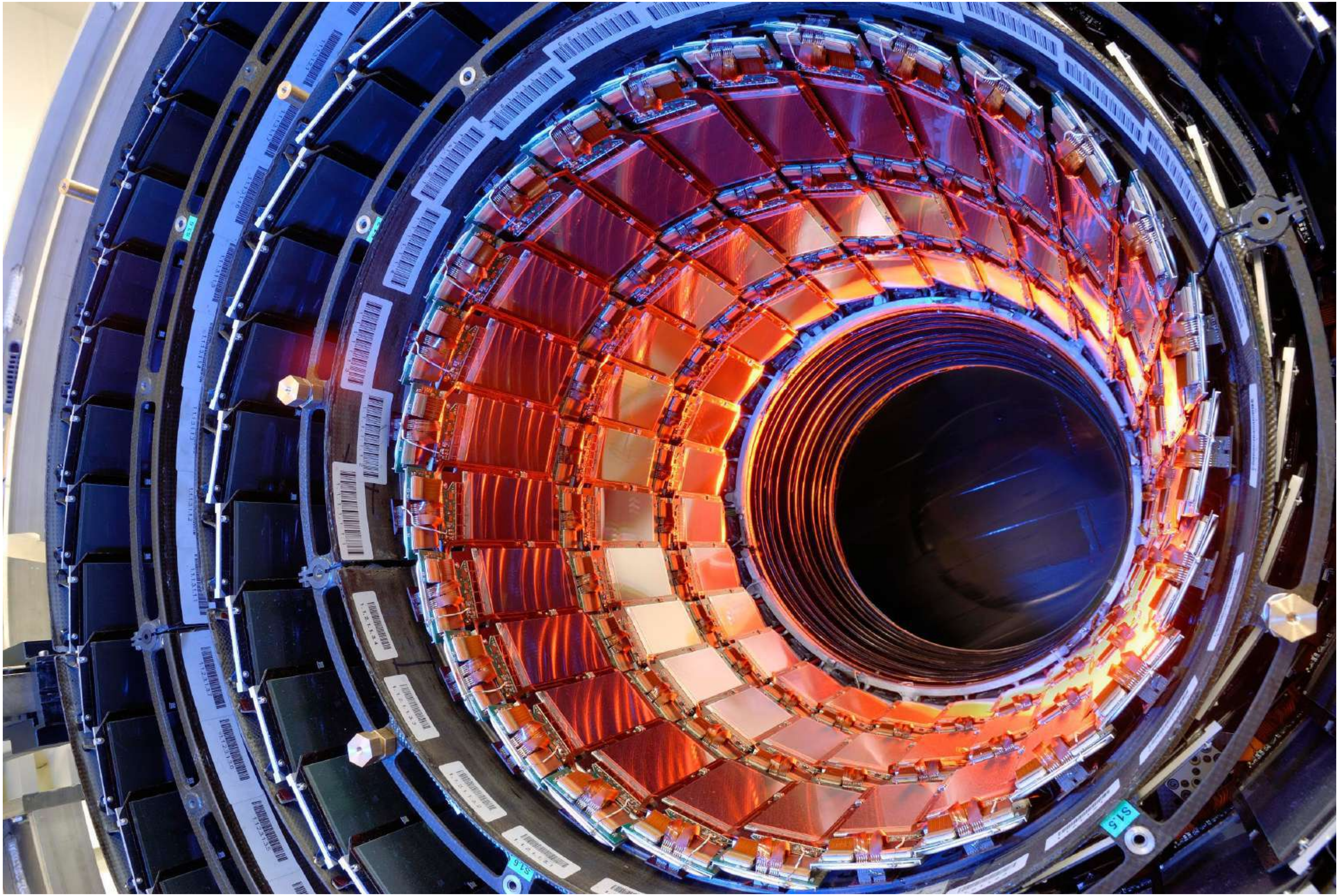


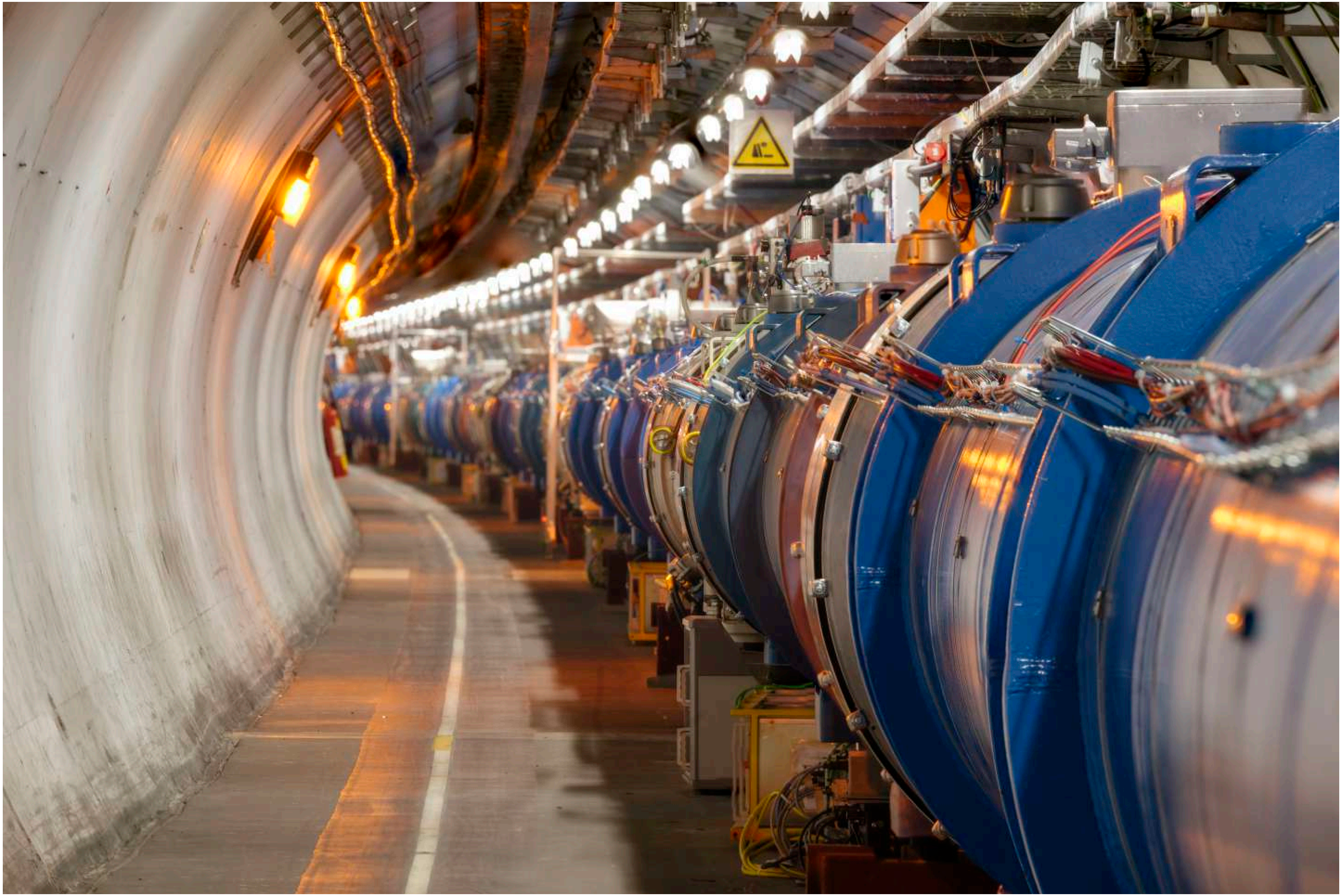


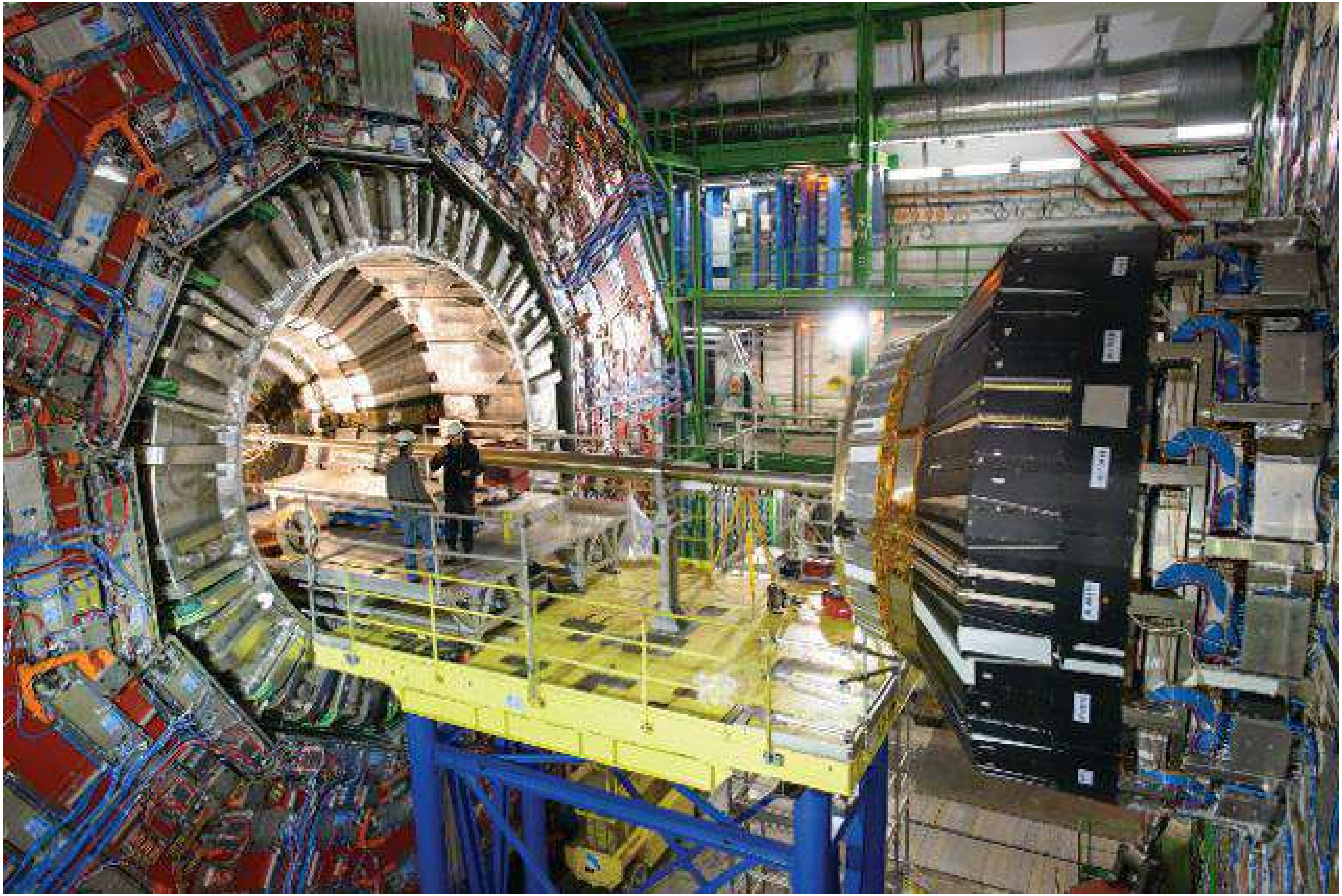


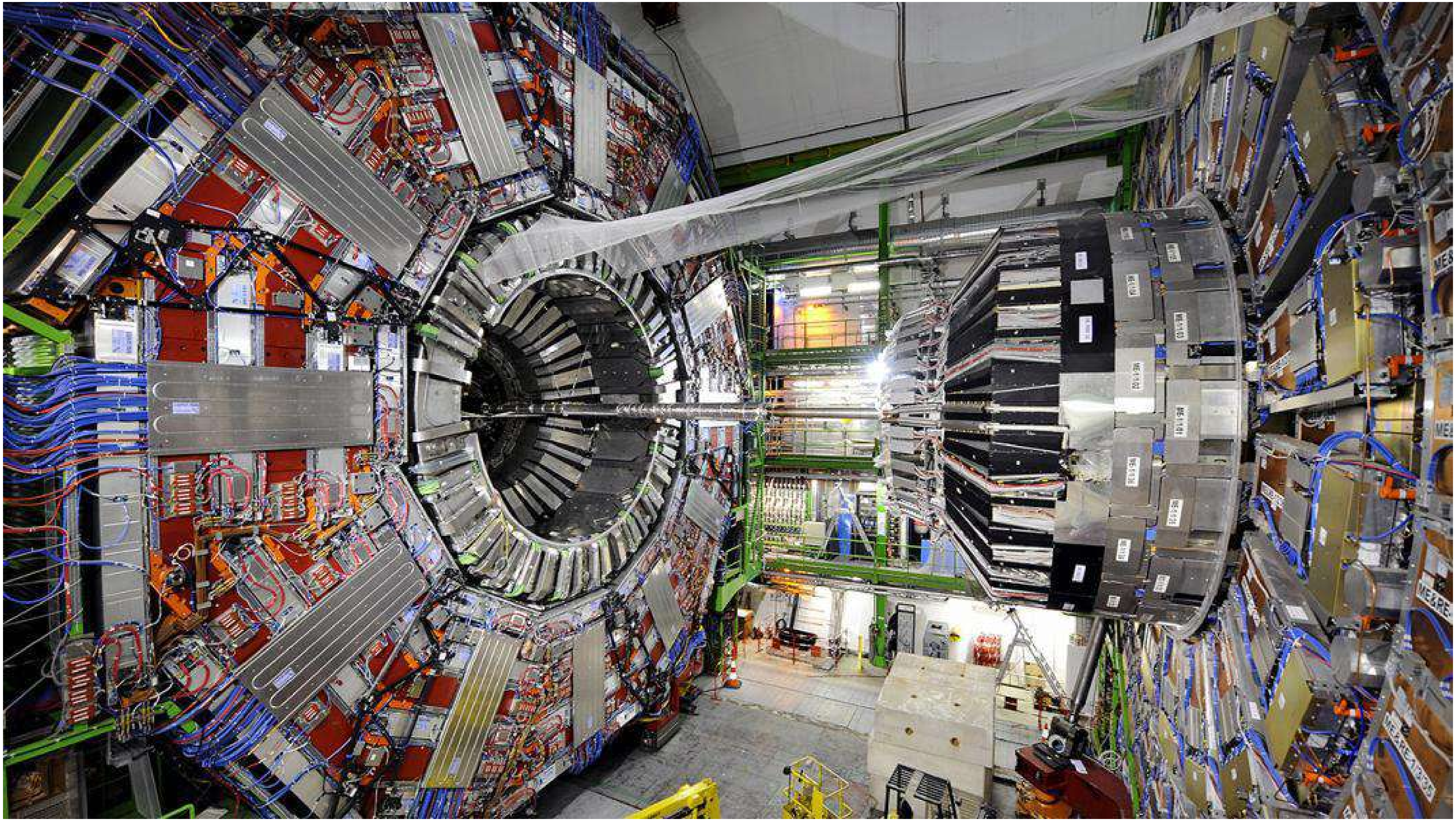


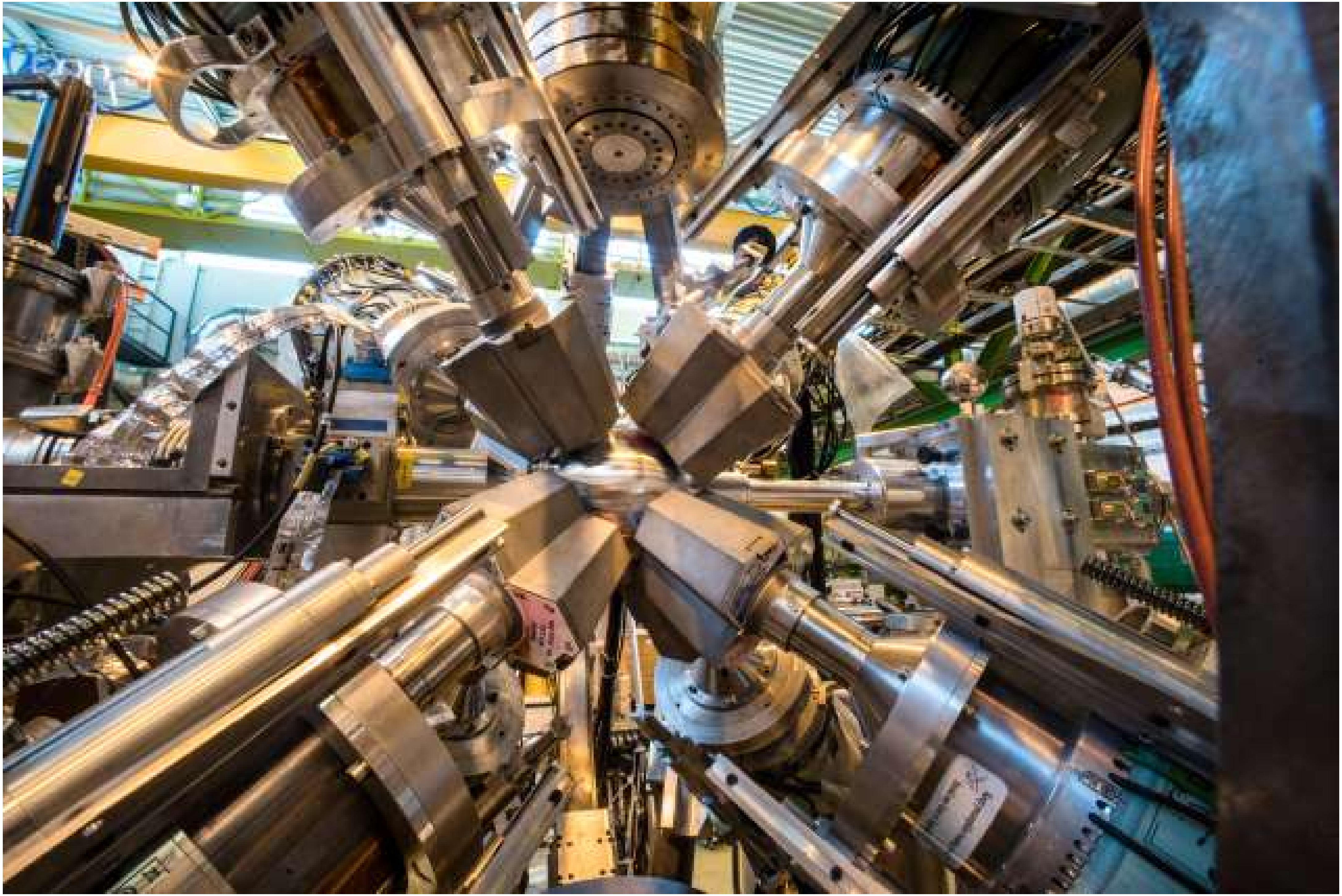

SHAWTON

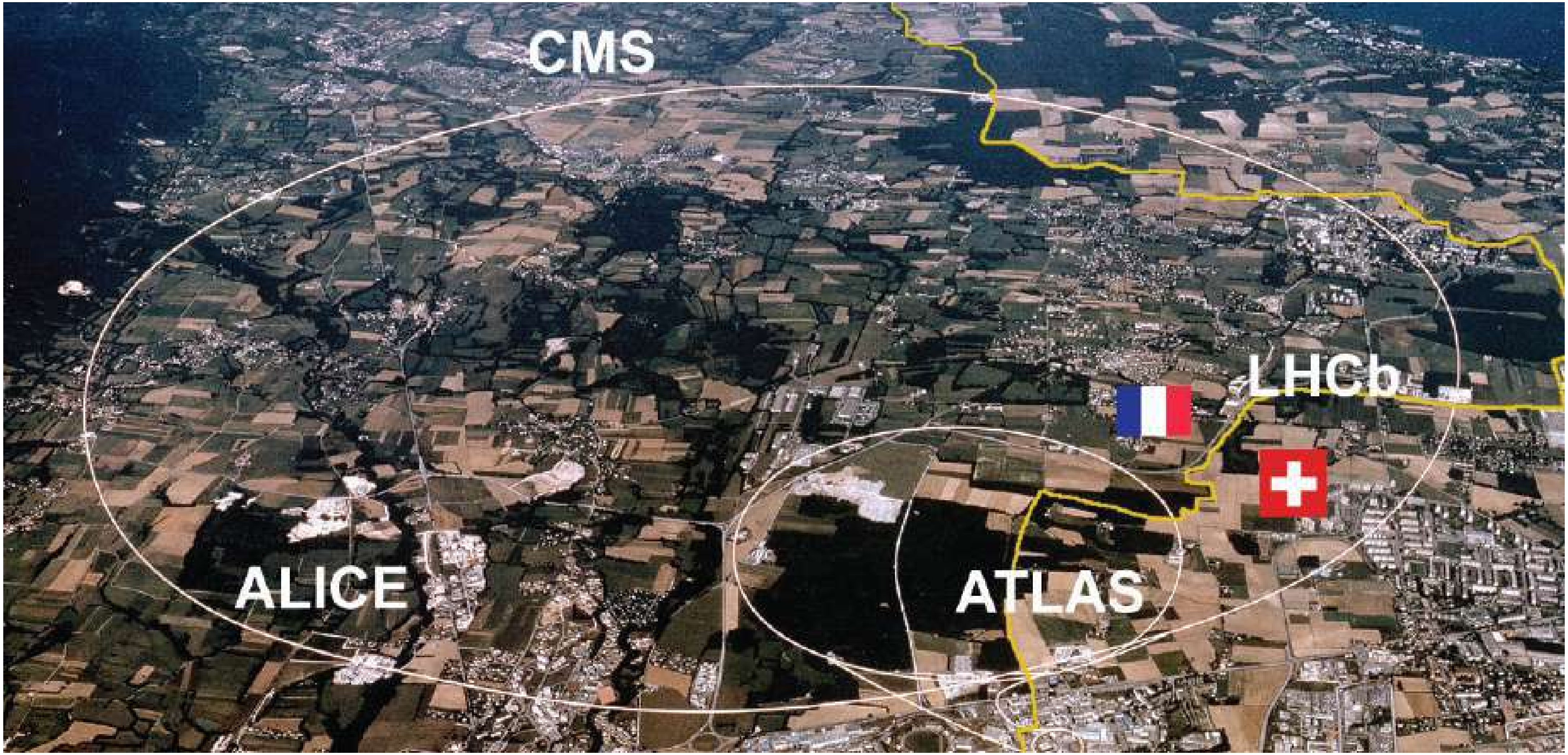


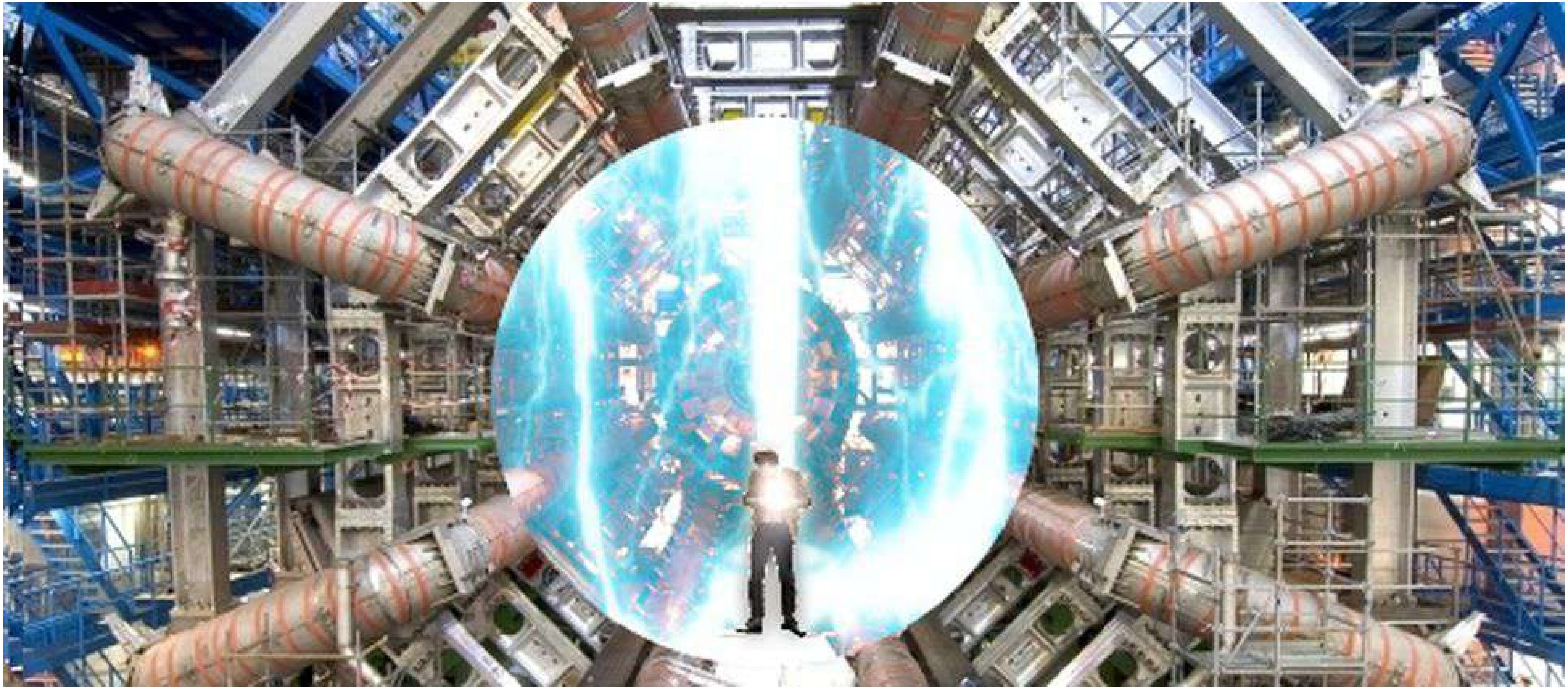


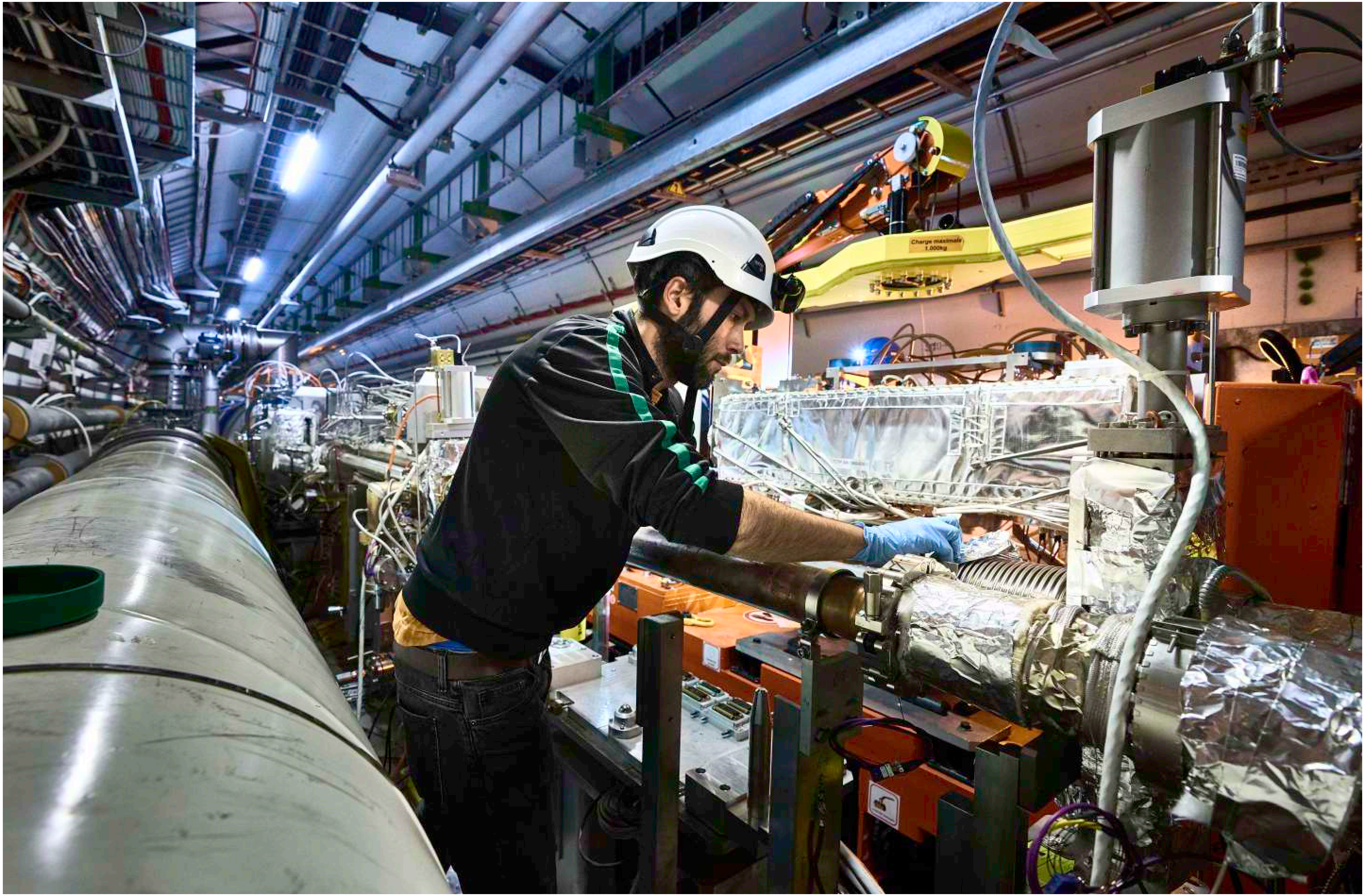


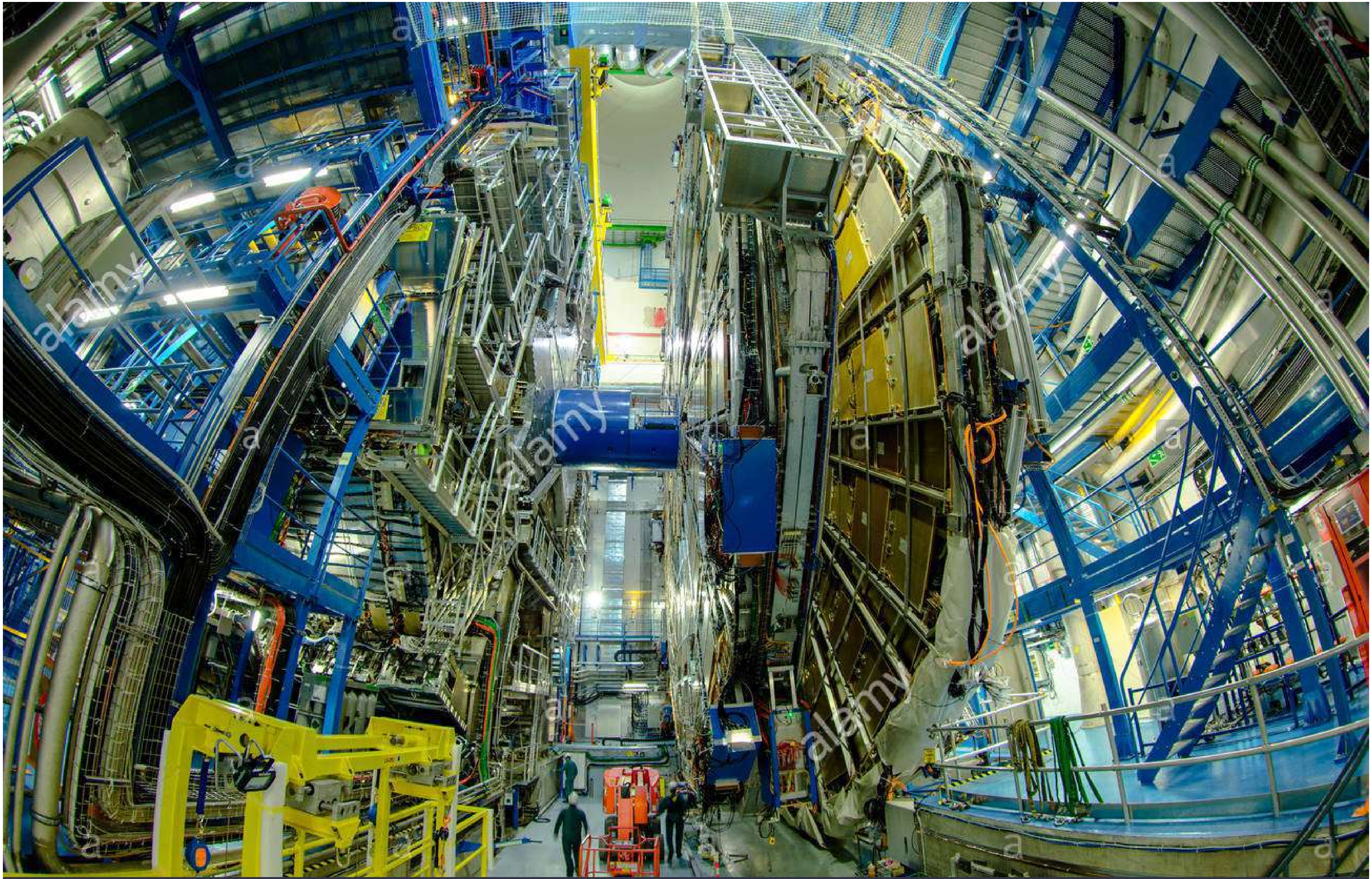


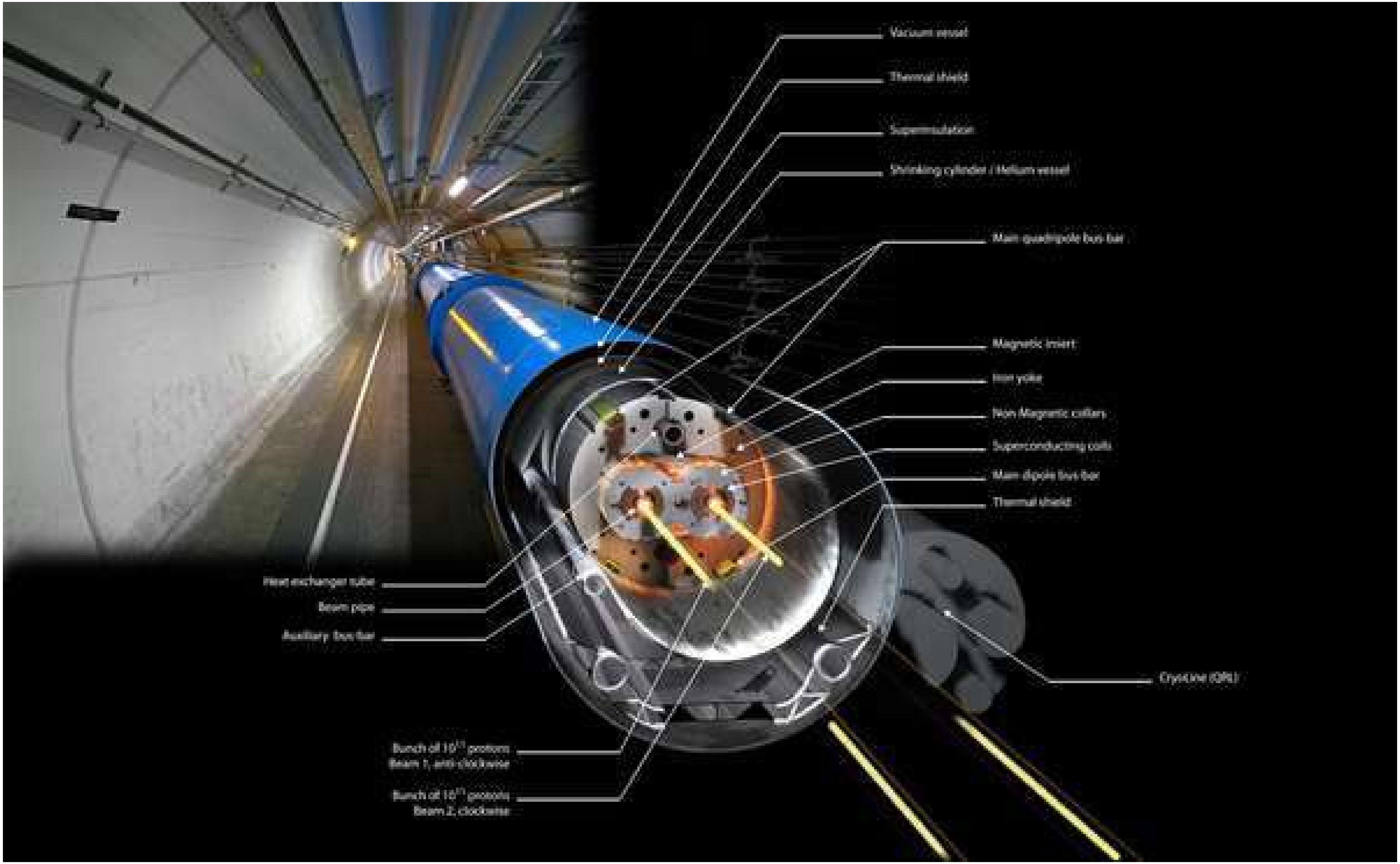



CMS
LHCb
ALICE
ATLAS




Charge maximale
1.000kg



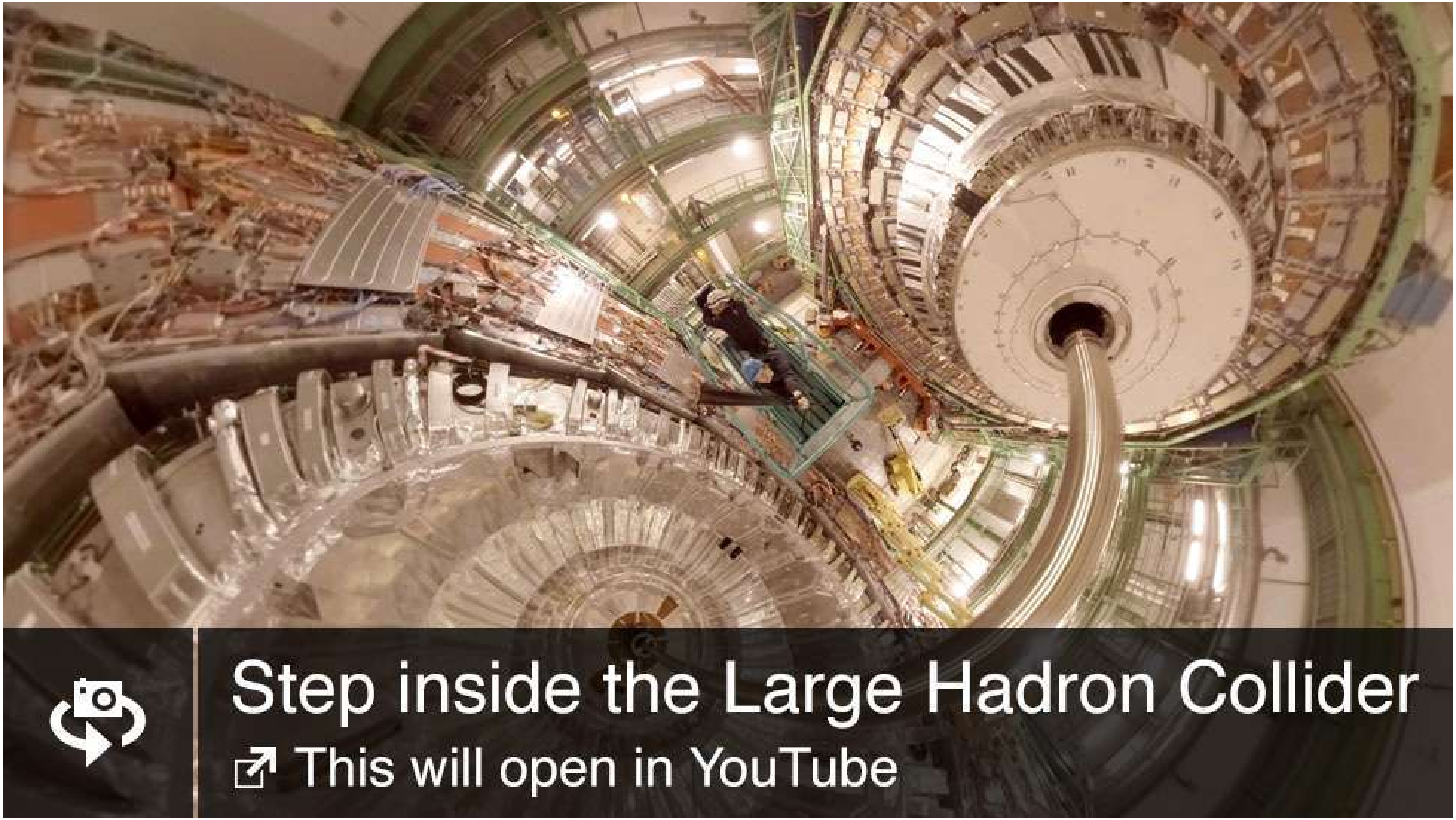

Vacuum vessel
Thermal shield
Superinsulation
Shrinking cylinder / Helium vessel
Main quadripole bus bar
Magnetic insert
Iron yoke
Non Magnetic collars
Superconducting coils
Main dipole bus bar
Thermal shield
Heat exchanger tube
Beam pipe
Auxiliary bus bar
CryoLine (QRL)
Bunch of 10^{11} protons
Beam 1, anti-clockwise
Bunch of 10^{11} protons
Beam 2, clockwise

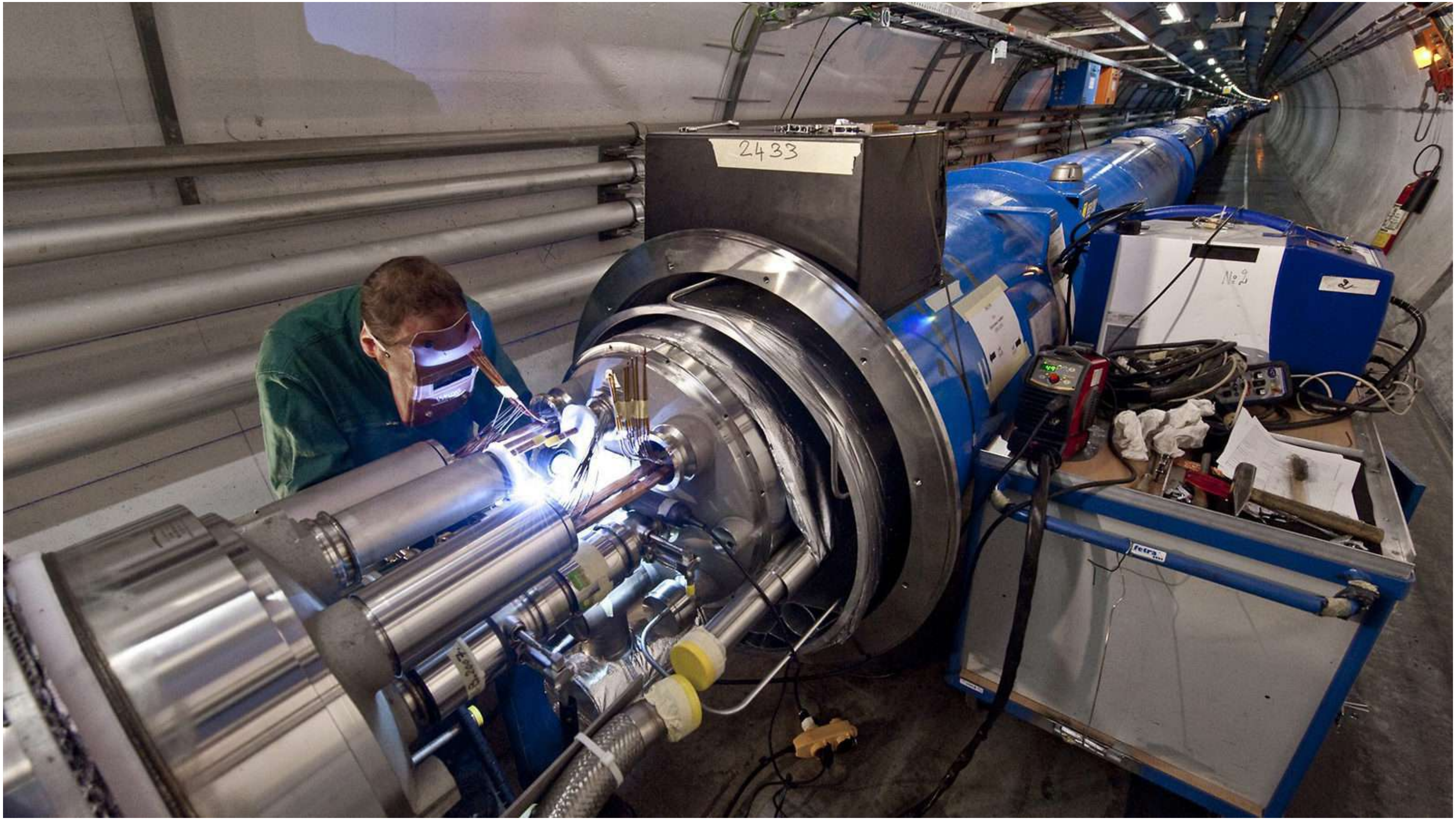

The
super hadron collider
in Switzerland/France

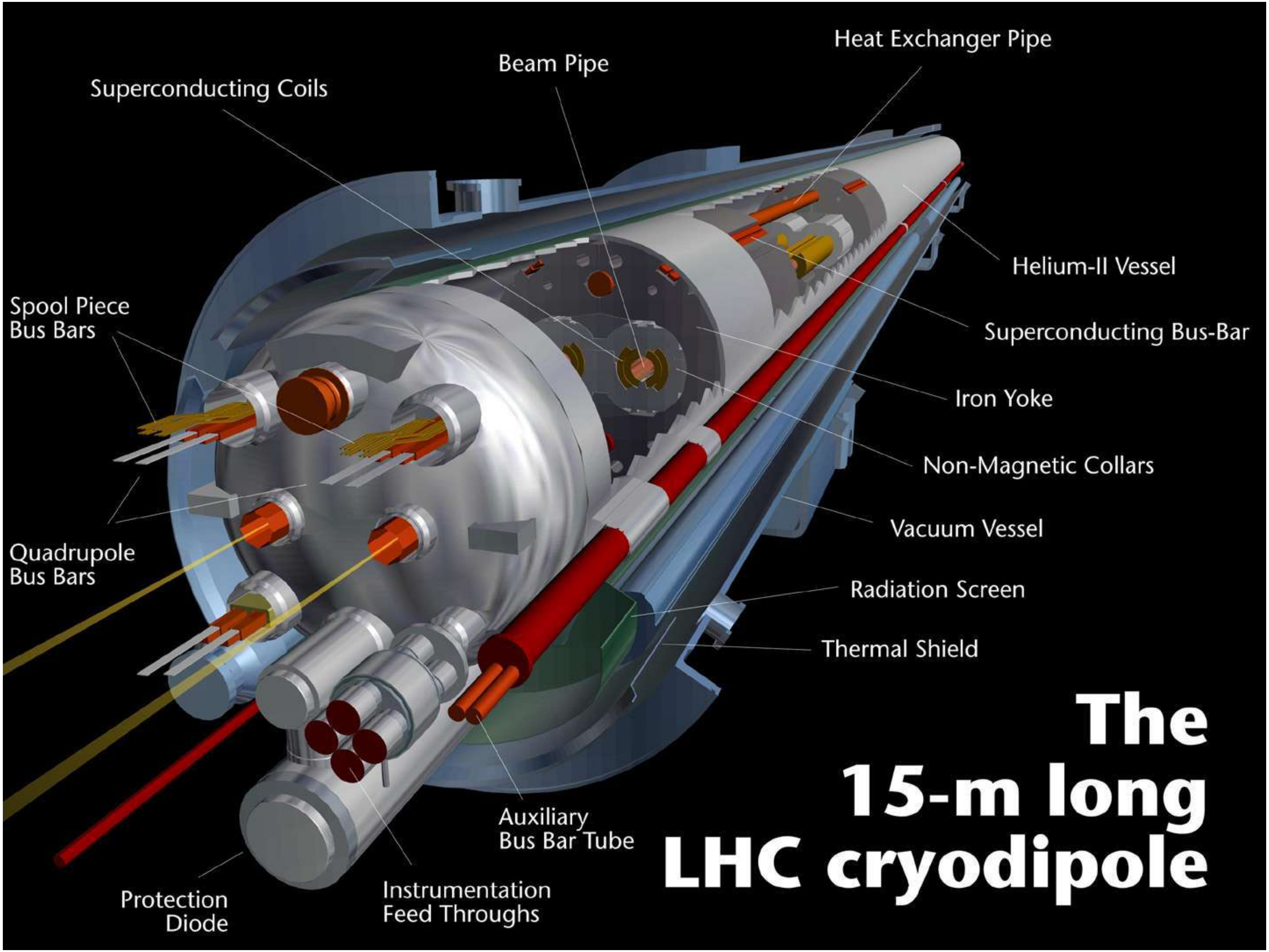

ALICE
CMS
ATLAS
LHCb

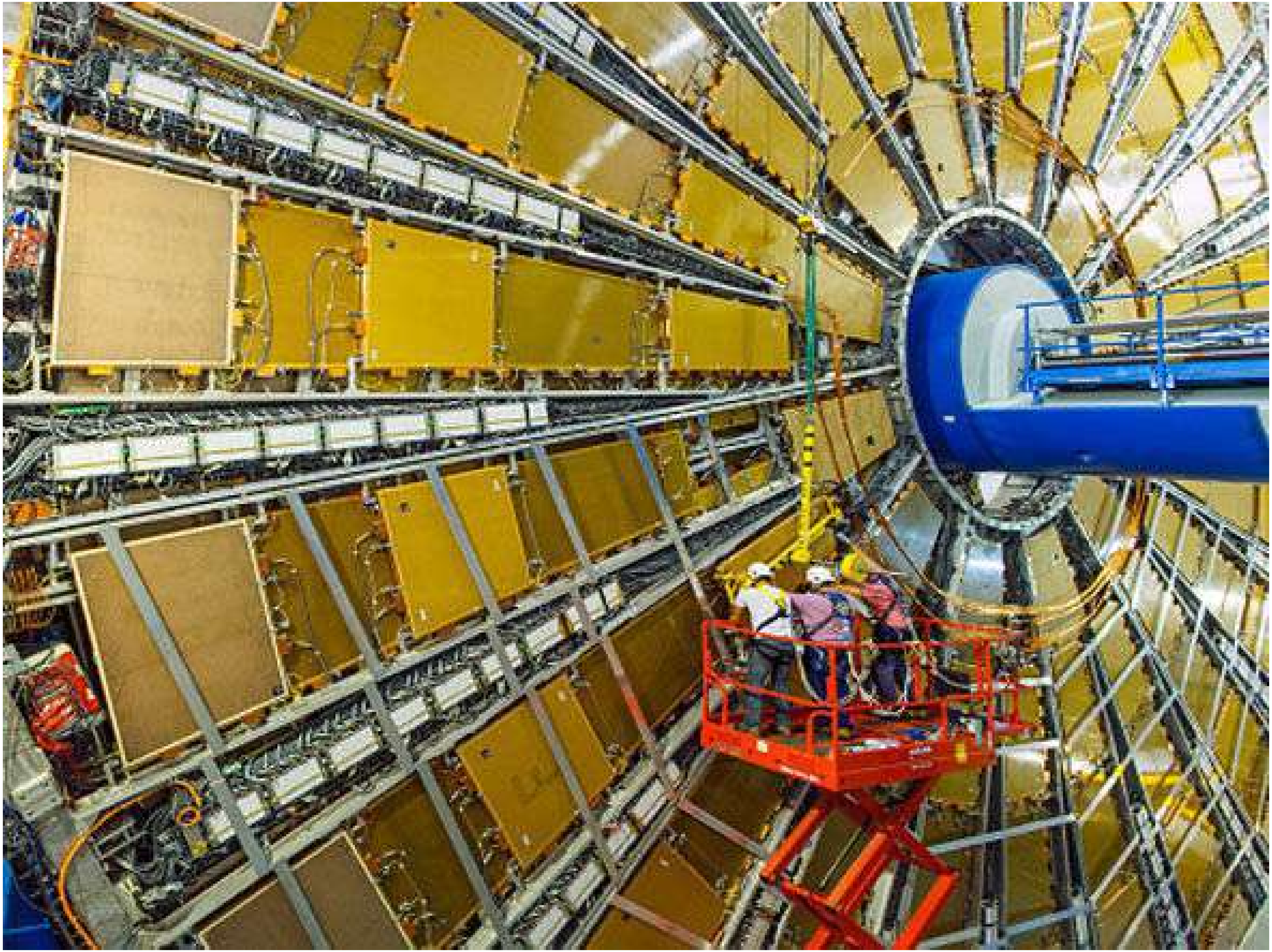

Large Hadron Collider
CMS
p
p
LHCb
ATLAS
ALICE

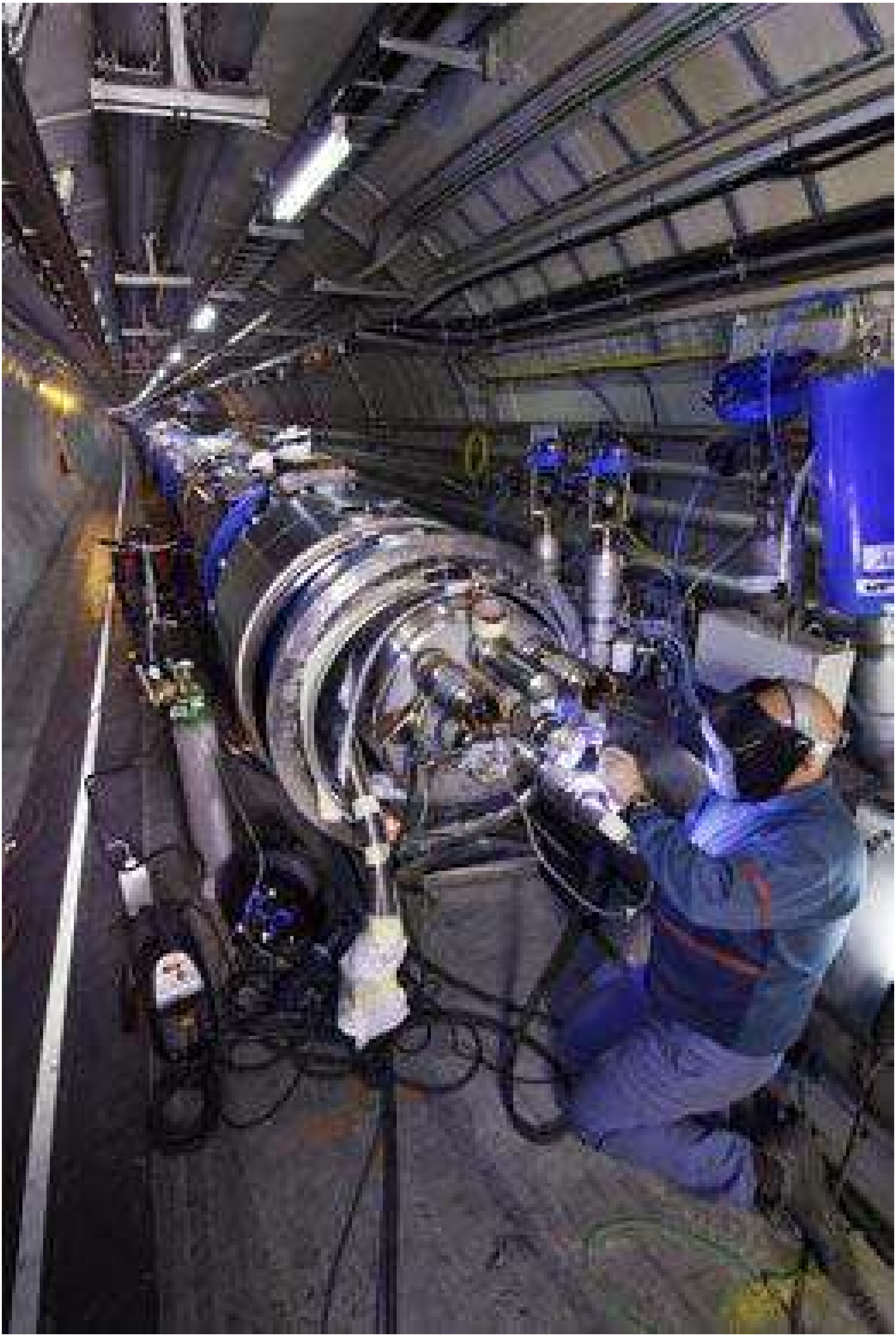

9,600 MAGNETS
DIRECT AND FOCUS THE BEAMS THROUGH THE TUNNEL
© BBC

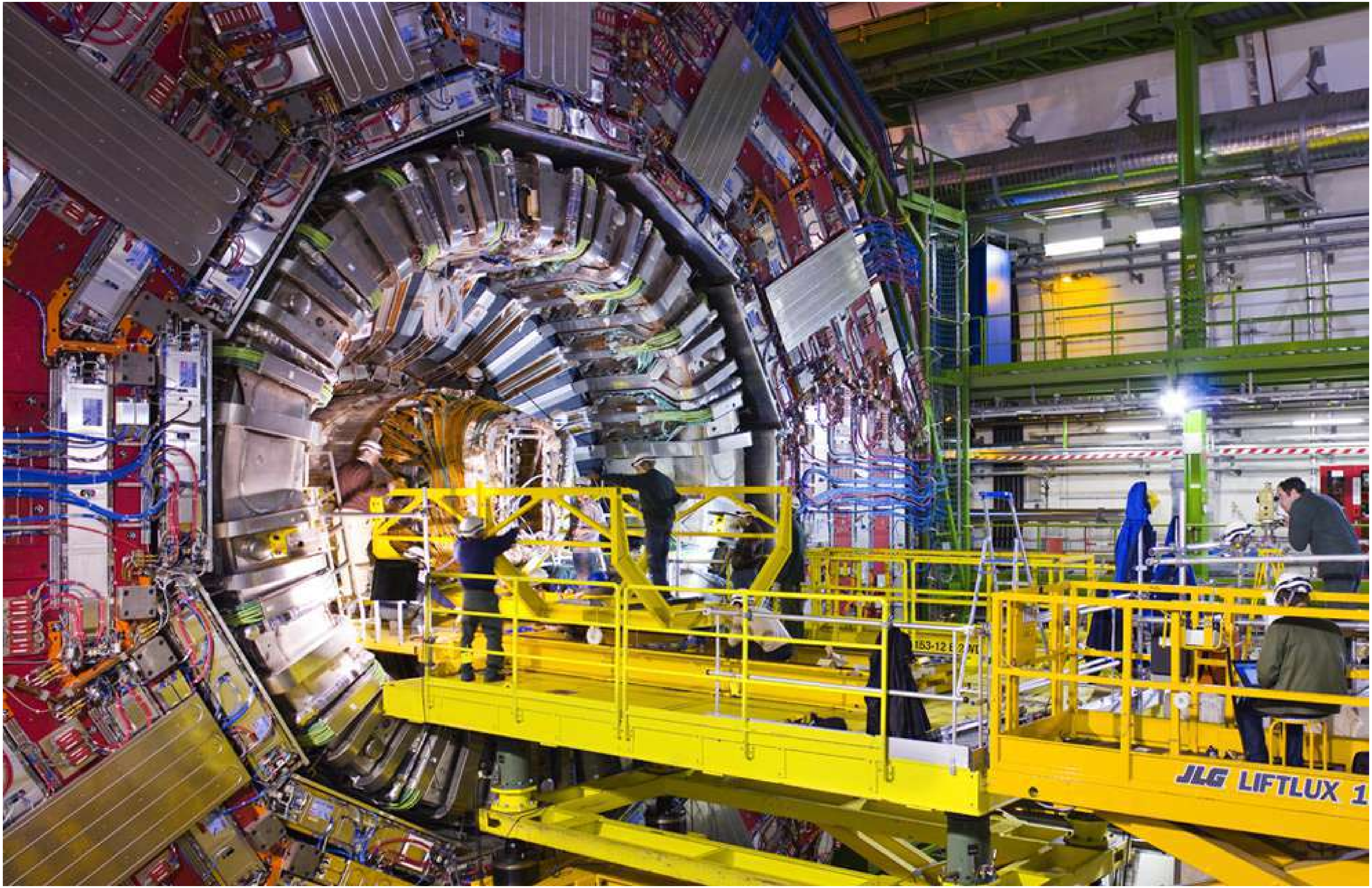

Step inside the Large Hadron Collider
This will open in YouTube


2433


Heat Exchanger Pipe
Beam Pipe
Superconducting Coils
Helium-II Vessel
Spool Piece
Bus Bars
Superconducting Bus-Bar
Iron Yoke
Non-Magnetic Collars
Vacuum Vessel
Quadrupole
Bus Bars
Radiation Screen
Thermal Shield
The
15-m long
LHC cryodipole
Auxiliary
Bus Bar Tube
Protection
Diode
Instrumentation
Feed Throughs






JLG LIFTLUX 1

FEDERAL RESERVE NOTE
IK 49935865 B
K11
THE UNITED STATES OF AMERICA
5
FIVE DOLLARS

10
THE UNITED STATES OF AMERICA
DOLLARS

5
IJ 75242685 A
THE UNITED STATES OF AMERICA
FIVE DOLLARS

FOLDING IN A PARTICULAR WAY THE $10,$20,$50,$100 DOLLAR BILLS WILL REVEAL SECRET IMAGERY OF THE 911 ATTACKS ON THE PENTAGON AND THE WORLD TRADE CENTER. ONE SIDE SYMBOLIZES THE TWIN TOWERS AND THE REVERSE SIDE THE PENTAGON.

COINCIDENCE? IT'S REPORTED THESE DENOMINATIONS WERE RE-PRINTED IN 1996 TO SPECIFICALLY INCLUDE NEW HIDDEN DESIGNS. MYSTERIOUSLY REVEALED TO THE PUBLIC ON 911 TO INTENTIONALLY DEMONSTRATE THEIR POWER AND CONTROL.

Try this. Roll it up and add light behind it.

imgur
781k followers

Follow

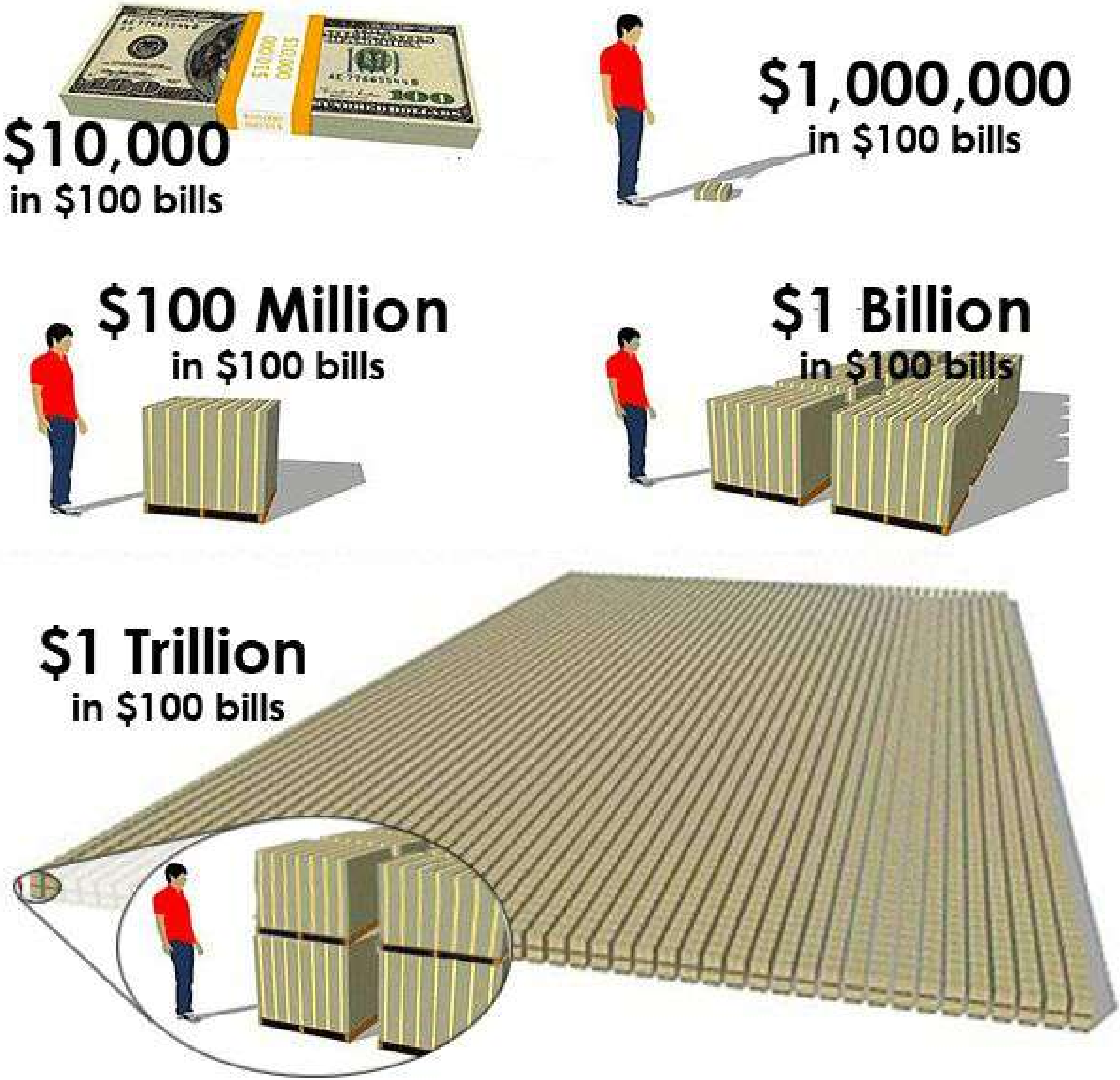
↗ **imgur.com**

Post with 348 views. Try this. Roll it up and add light behind it.

Written by Imgur

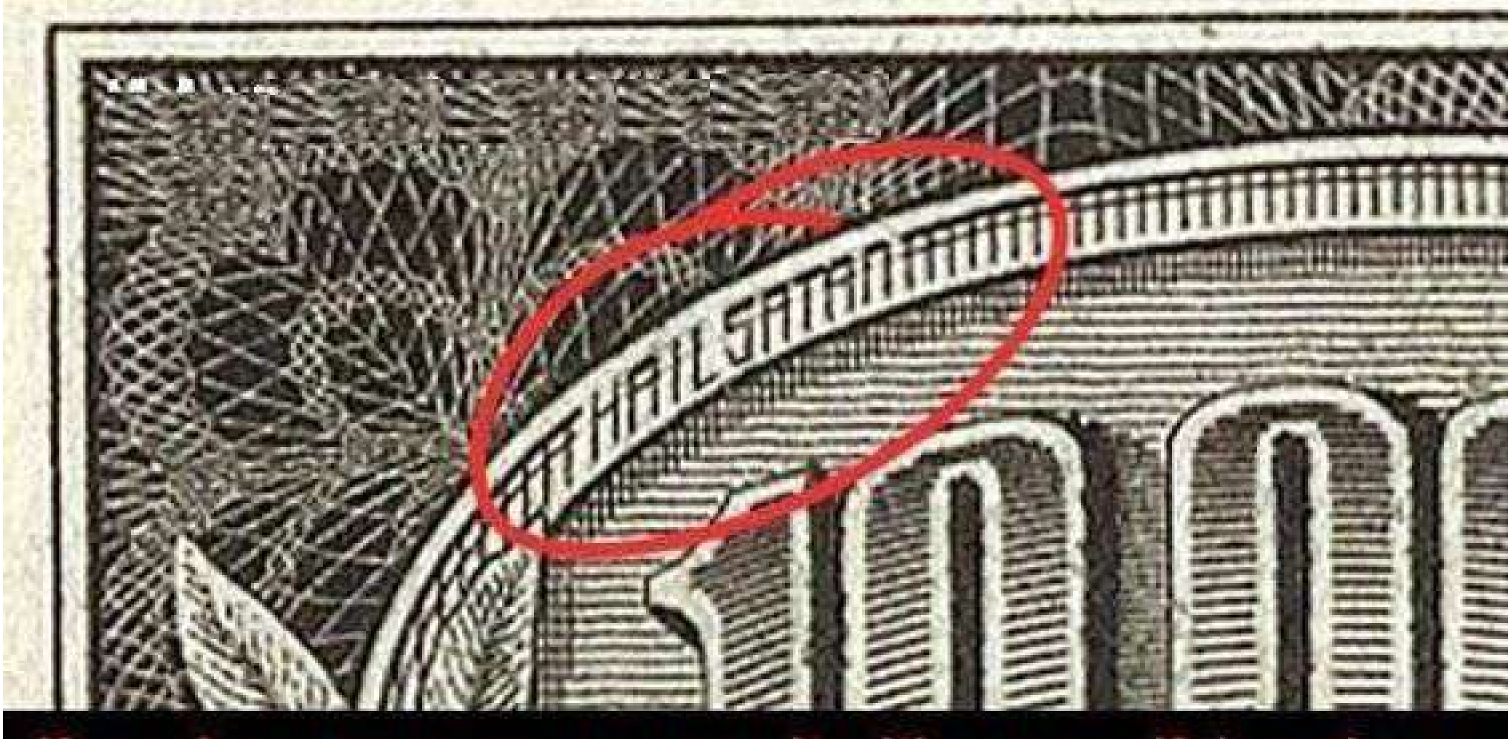
Photos and Comments

1 Photo Comments


$10,000
in $100 bills
$1,000,000
in $100 bills
$100 Million
in $100 bills
$1 Billion
in $100 bills
$1 Trillion
in $100 bills

This is the front of a U.S. $10,000 bill, which was discontinued in 1969...

and otherwise known as the "Hail Satan" bill.



If you have one, you can see it with a magnifying glass. Look at the upper left "10,000". It's above the "1".

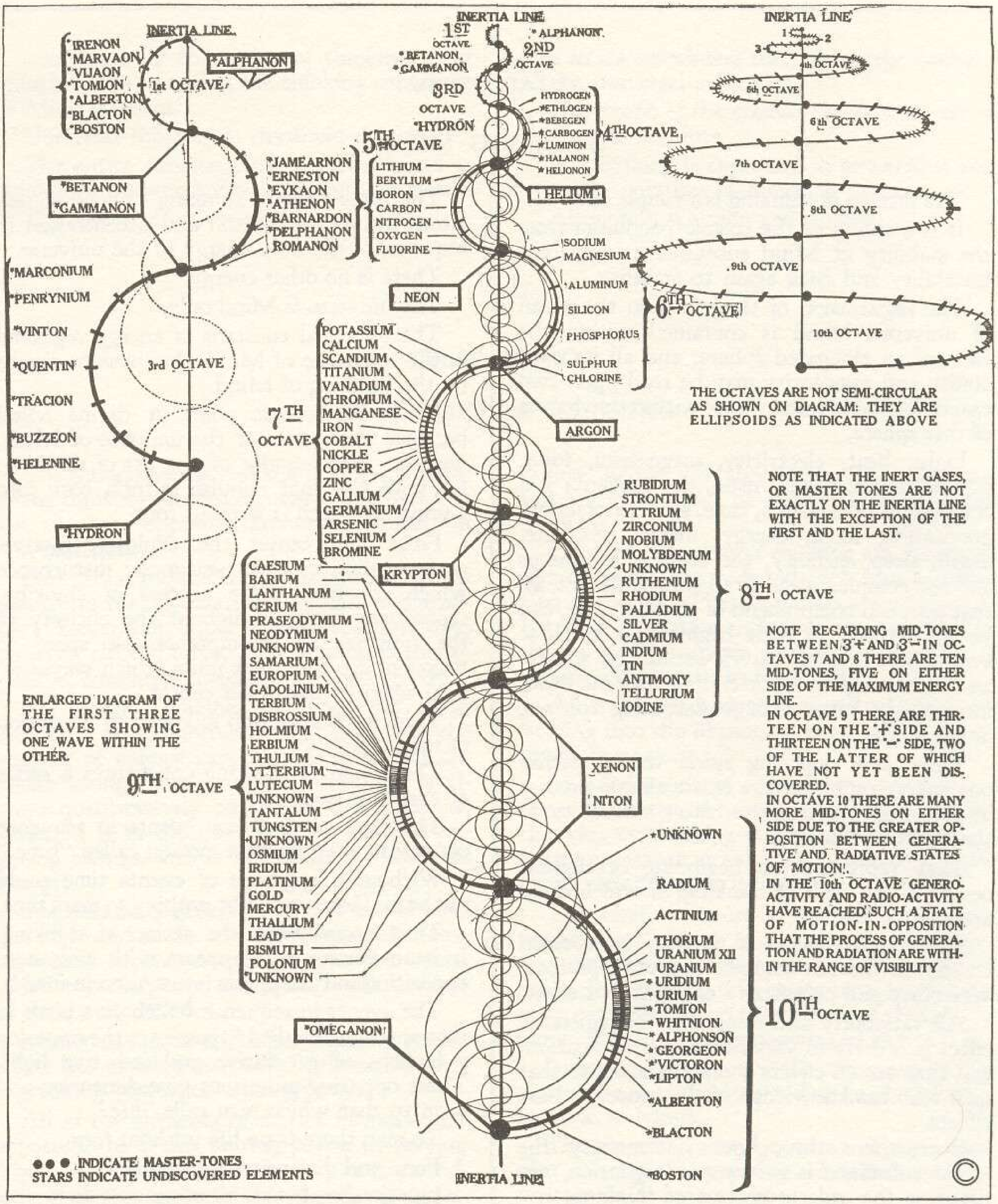
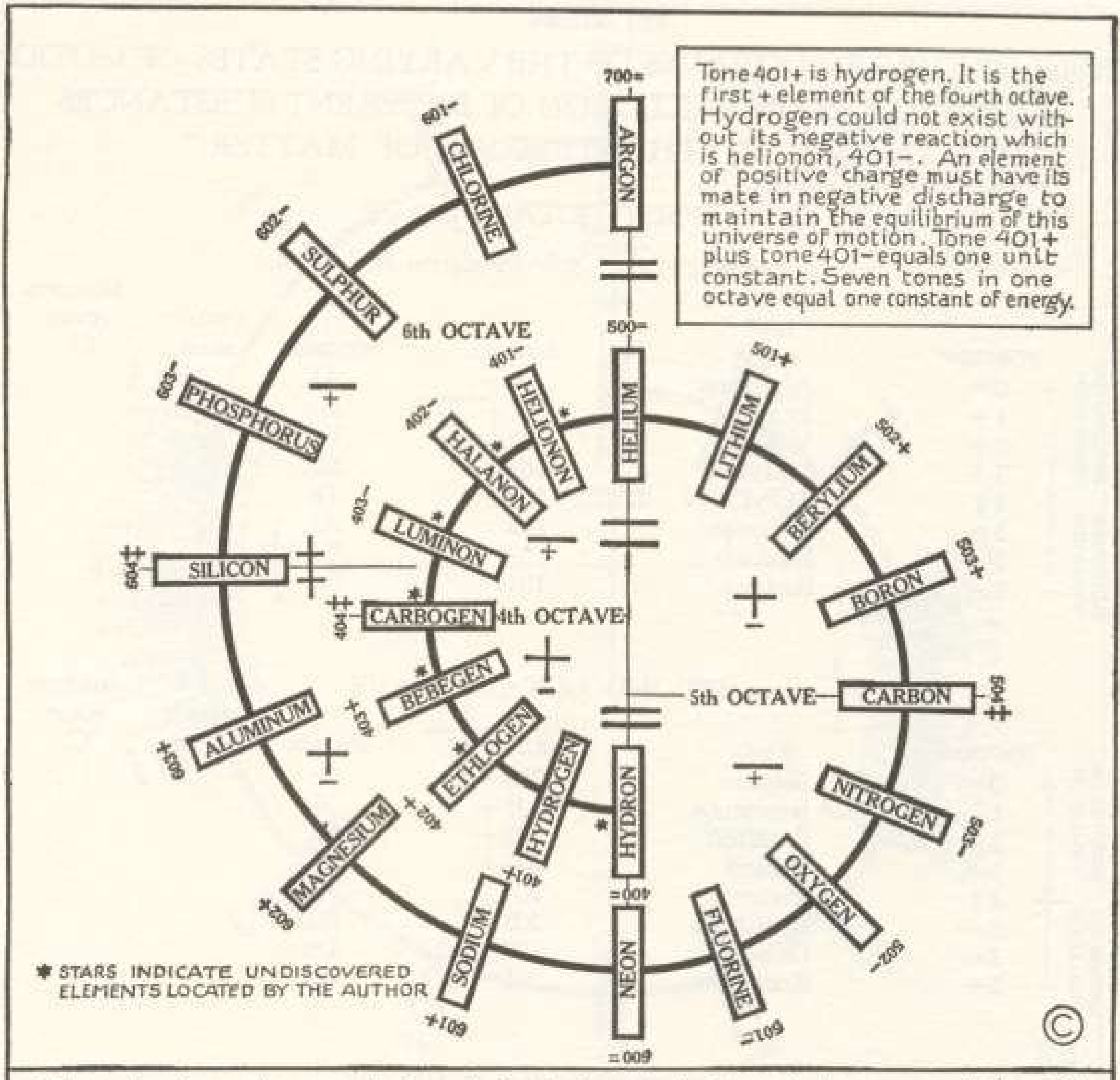
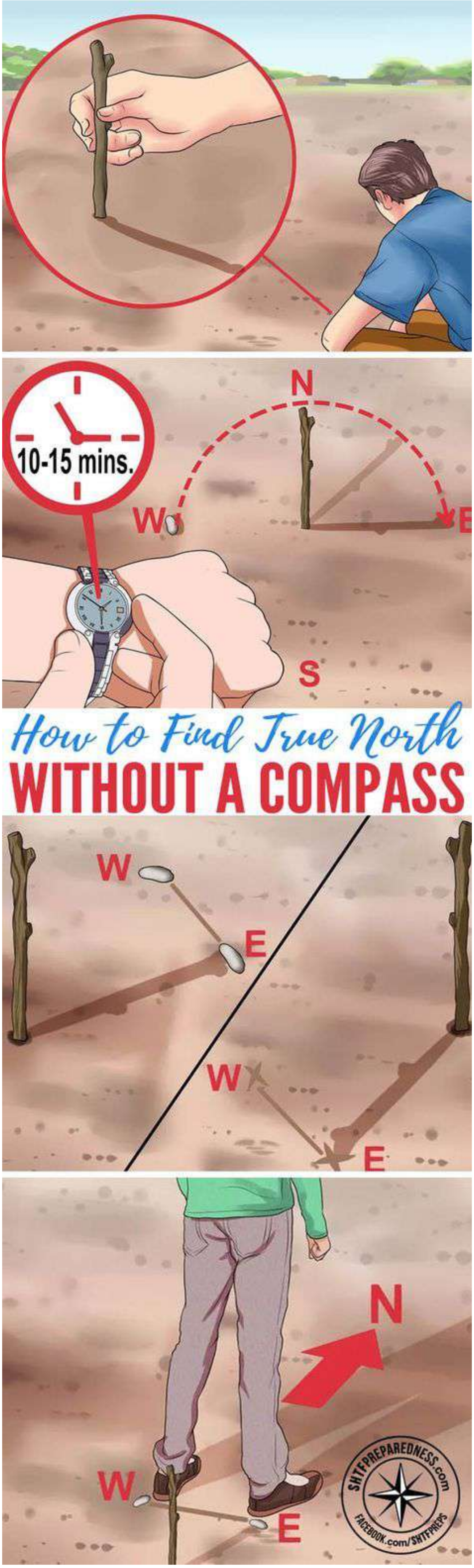


DIAGRAM SHOWING THE TEN OCTAVES OF INTEGRATING LIGHT, ONE OCTAVE WITHIN THE OTHER. THESE TEN OCTAVES CONSTITUTE ONE COMPLETE CYCLE OF THE TRANSFER OF THE UNIVERSAL CONSTANT OF ENERGY INTO, AND THROUGH, ALL OF ITS DIMENSIONS IN SEQUENCE



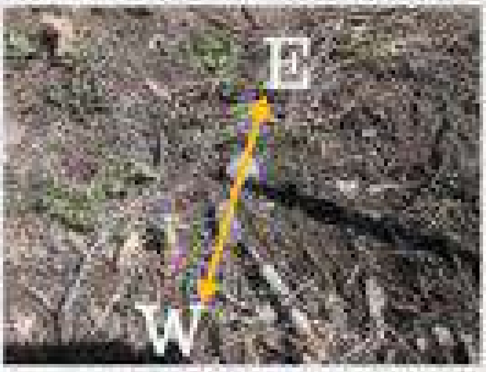
The entire ten octave constant cycle is simply an orderly periodic accumulation of the constant of energy into higher power dimension which reaches its maximum at the fifth octave, and a distribution of that accumulation through the succeeding five octaves. Higher power is accumulated time. The deceleration of speed in rotation of mass is the result of generation. Power is generated by resistance to speed of rotation and acceleration of speed of revolution. Power is thus accumulated from low potential of great axial speed to high potential of great orbital speed. Each element is greater in its mass than its predecessor because of the generative power of electricity which acts as a brake against high axial speed and diverts it into accumulating mass. The elements of matter are an orderly and periodic accumulation and redistribution of energy.

FOURTH, FIFTH AND SIXTH OCTAVES. IN THE FOURTH OCTAVE THE SO-CALLED PHYSICAL UNIVERSE BEGINS WITH BUT ONE OF ITS ELEMENTS KNOWN TO MAN. THE ELEMENT HYDROGEN


N
10-15 mins.
W
E
S
How to Find True North
WITHOUT A COMPASS
W
E
W
E
N
W
E
SHTFPREPAREDNESS.com
FACEBOOK.com/SHTFPREPS

Plunge a stick into the ground to make a shadow

Place a stone at the tip of the shadow



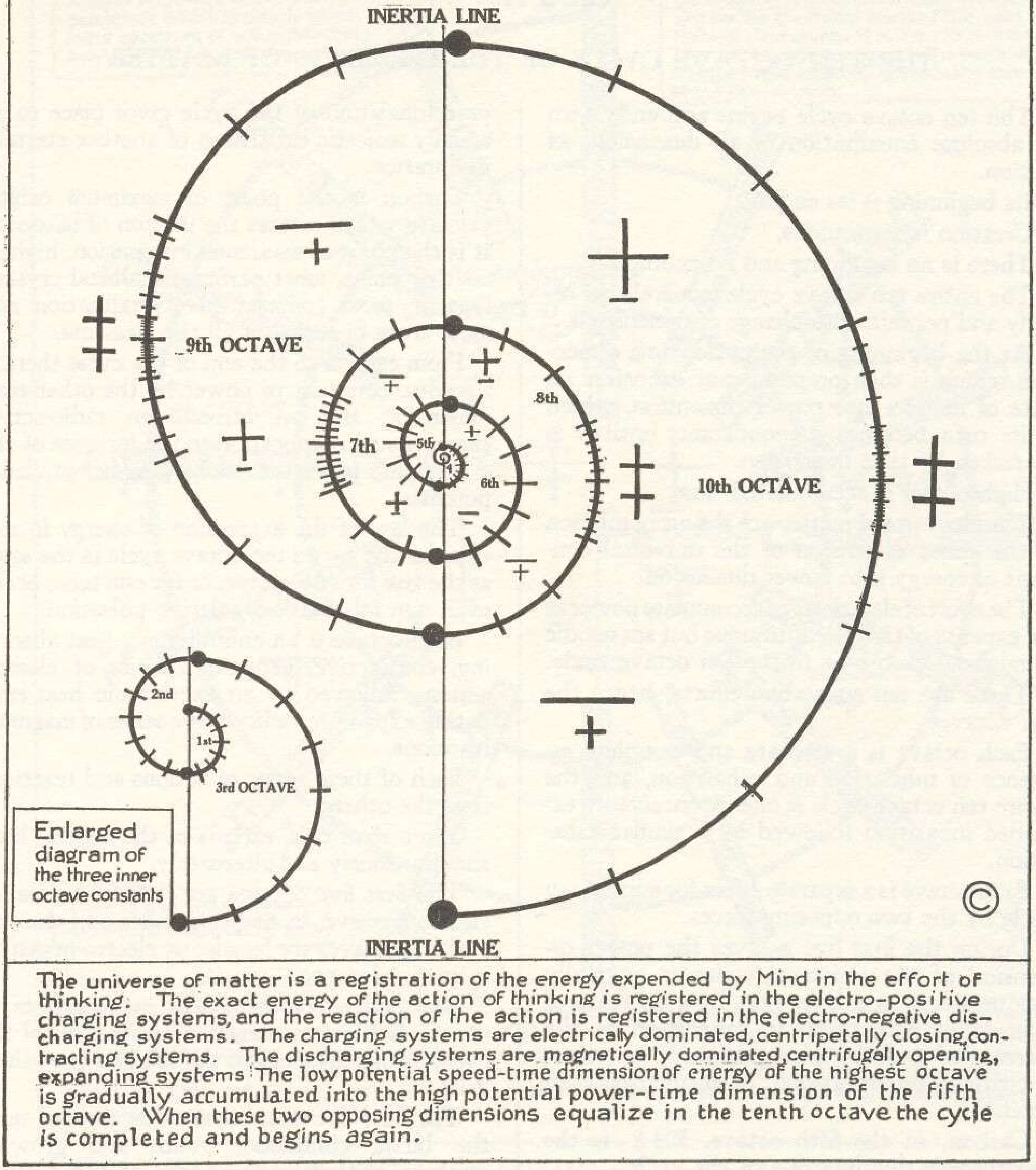
Wait 20 minutes and place a stone at the new point of the shadow. This will give you East and West.

North is decided by the direction that the sun is laying its shadow

Sundial Direction


DID YOU KNOW?
GRAVITY IS A HOAX
FB/IG: CONNECTING CONSCIOUSNESS
BUMBLEBEES CAN'T FLY? AERODYNAMICALLY, IT IS IMPOSSIBLE FOR THEM TO ACHIEVE FLIGHT. WHAT BUMBLEBEES ACTUALLY DO IS LEVITATE
CONNECTING CONSCIOUSNESS
BUMBLEBEES HAVE A HOLLOW CAVITY NEXT TO THE LARYNX, AND WHEN THEY BEAT THEIR WINGS, THEY START TO RESONATE ENERGY WITHIN THIS CAVITY. ONCE THAT RESONANCE MATCHES THE 7.83Hz RESONANCE OF THE MAGNETIC FIELD (EARTH'S RESONANCY) IT BECOMES A FREE-AGENT, ENCOMPASSED IN AN ELECTROMAGNETIC ENVELOPE AND LEVITATES FROM FLOWER TO FLOWER

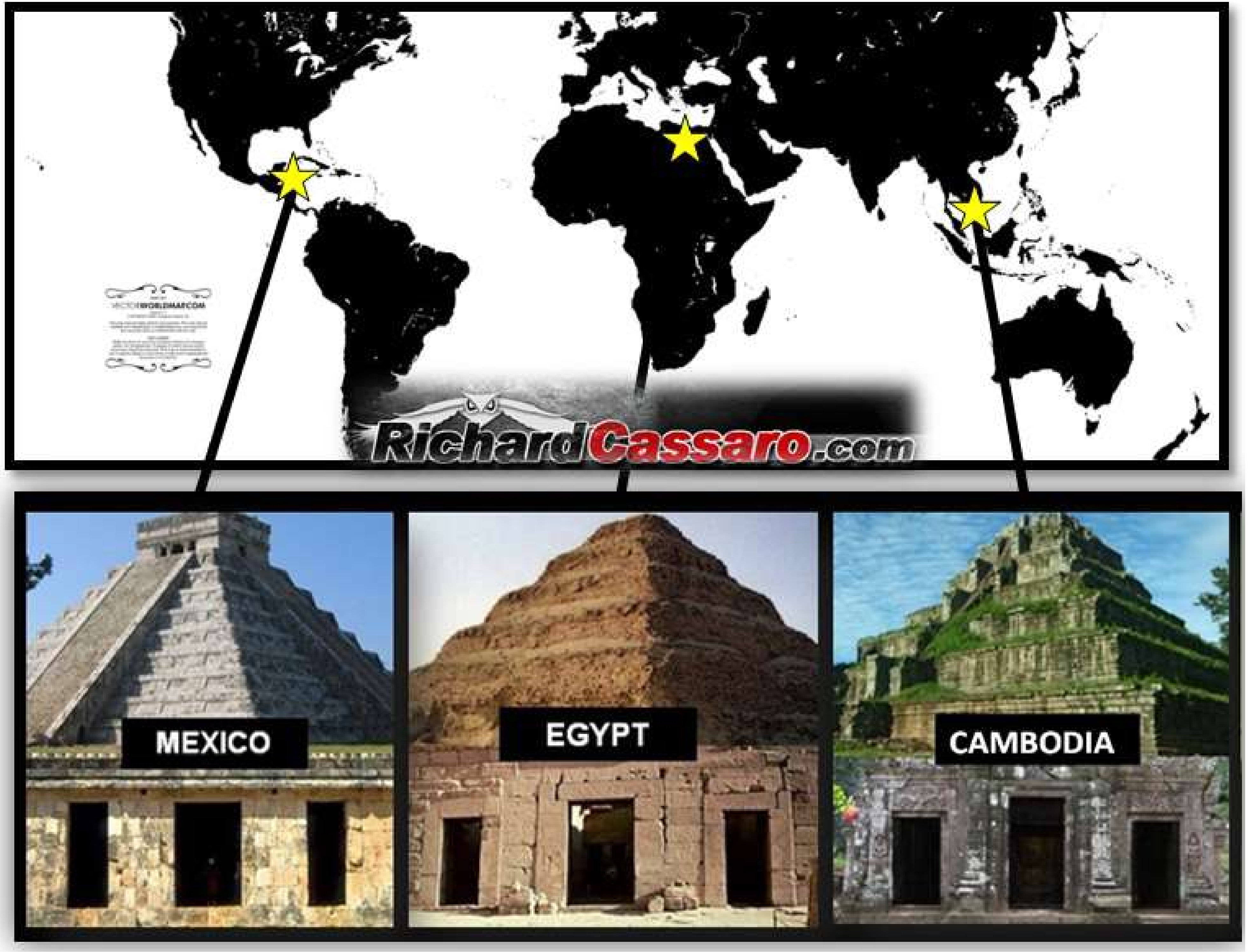
The "CREATED" universe of matter is the result of concentration of Mind upon the idea of form and then the generation of power by diverting low potential into centripetal vortices in order to hold the idea of Mind into the appearance of form until form disappears through mental decentration

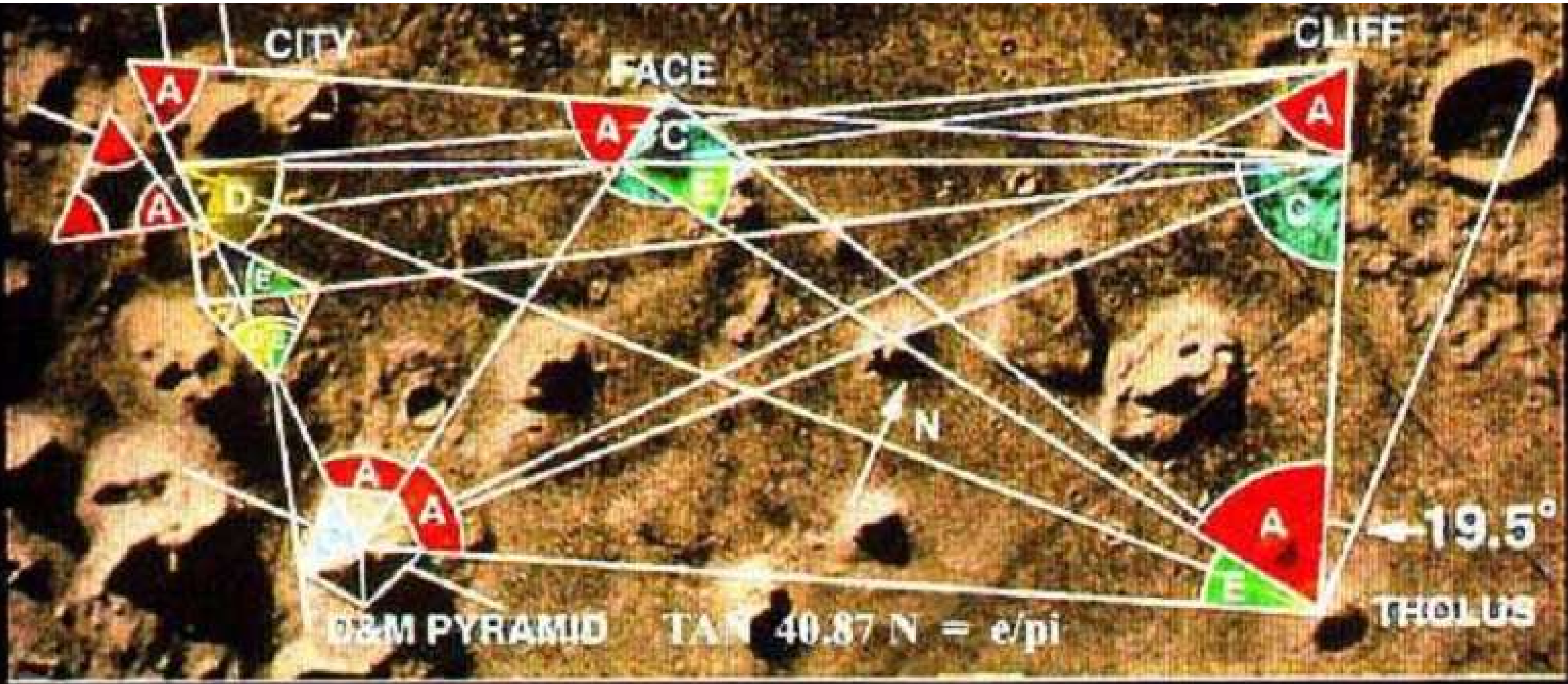


The universe of matter is a registration of the energy expended by Mind in the effort of thinking. The exact energy of the action of thinking is registered in the electro-positive charging systems, and the reaction of the action is registered in the electro-negative discharging systems. The charging systems are electrically dominated, centripetally closing, contracting systems. The discharging systems are magnetically dominated, centrifugally opening, expanding systems The low potential speed-time dimension of energy of the highest octave is gradually accumulated into the high potential power-time dimension of the fifth octave. When these two opposing dimensions equalize in the tenth octave the cycle is completed and begins again.

DIAGRAM OF THE TEN OCTAVE CYCLE OF INTEGRATING AND DISINTEGRATING LIGHT UNITS INTO ATOMIC SYSTEMS CALLED THE "ELEMENTS OF MATTER"

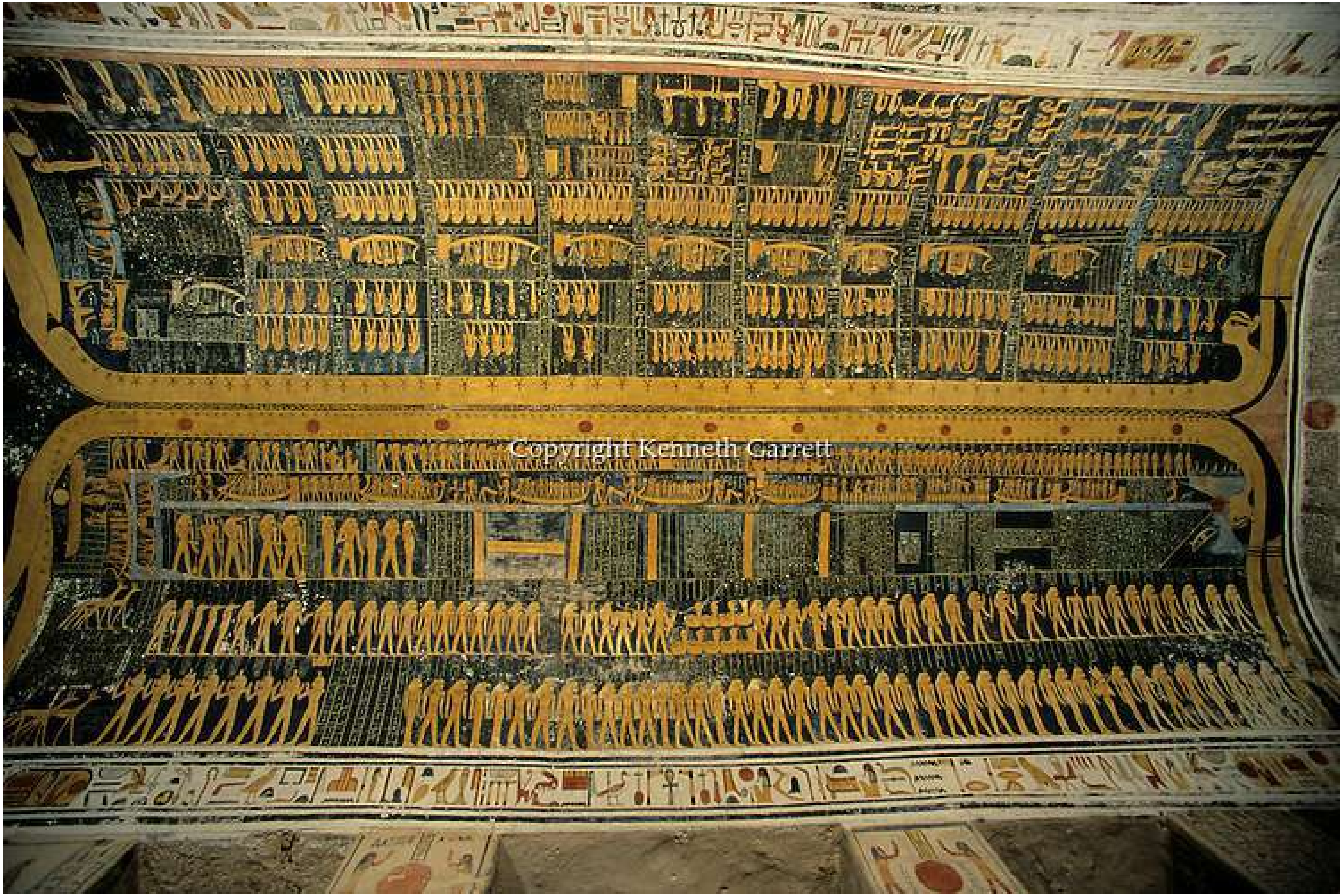

WTF fun fact #5874
The Great pyramid of Giza has
8 sides, not 4.
wtffunfact.com


RichardCassaro.com
MEXICO
EGYPT
CAMBODIA



Angles		Angle Ratios	Trig. Functions
degrees	radians		
A = 60.0	= $\pi/3$	C/A = $\sqrt{2}$	TAN A = $\sqrt{3}$
B = 120.0	= $2\pi/3$	B/D = $\sqrt{3}$	TAN B = $-\sqrt{3}$
C = 85.3		C/F = $\sqrt{3}$	SIN A = e/π
D = 69.4	= $e/\sqrt{5}$	A/D = e/π	SIN B = e/π
E = 34.7	= e/π	C/D = $e/\sqrt{5}$	TAN F = π/e
F = 49.6		A/F = $e/\sqrt{5}$	COS E = $\sqrt{5}/e$
G = 45.1		H/G = $e/\sqrt{5}$	SIN G = $\sqrt{5}/\pi$
H = 55.3		C/B = $\sqrt{5}/\pi$	SIN C = 1
I = 100.4		D/F = $\pi/\sqrt{5}$	TAN G = 1
			TAN I = .2e
			TAN 40.87° N = e/π


Stay awake at FUNsubstance.com

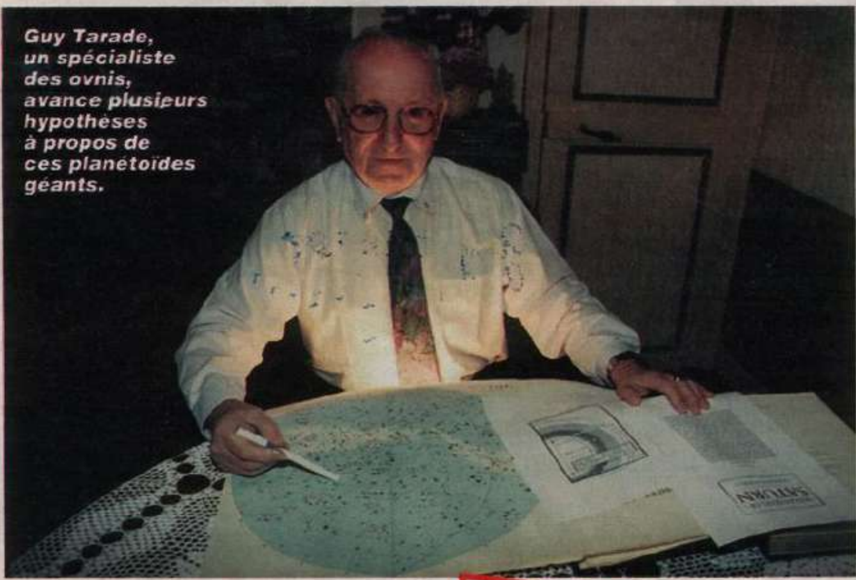

Copyright Kenneth Garrett

les extraterrestres...

seh et qui ont été détectés récemment à la surface de Mars.

Le plus spectaculaire concerne les preuves matérielles qui ont pu être rapportées sous la forme des photos stupéfiantes de Saturne et de ses anneaux, réalisées sous divers angles par les sondes américaines Voyager 1 et Voyager 2. Sur les clichés et les films transmis à la Terre par ces deux stations automatiques, apparaissent très nettement d'énormes cités volantes qui semblent être encore contrôlées... intelligemment. Il est même possible d'y distinguer de multiples sources lumineuses.

Des données techniques d'un intérêt considérable ont bien été publiées, dès les années 80, à l'issue des missions spatiales des Voyager 1 et 2, d'après certains résultats obtenus par leurs



Guy Tarade, un spécialiste des ovnis, avance plusieurs hypothèses à propos de ces planétoïdes géants.

près de Nice, par Claude Chapeau, un ancien chercheur du CNRS.

Porte-parole de cette association qui collecte en temps réel sur Internet et Compuserve des informations en provenance du monde entier, l'écrivain ufologue niçois Guy Tarade analyse diverses hypothèses à propos de ces planétoïdes géants qui servent sans doute de bases aux ovnis surgissant de plus en plus fréquemment dans le ciel terrestre.

« Que se passerait-il si une de ces gigantesques "îles volantes" quittait le voisinage de Saturne pour venir se mettre en orbite autour de notre planète ? »

Pas de doute : une terrible panique s'emparerait des populations, confrontées par voie de conséquence à des cataclysmes ne laissant que peu de chances de survie à l'espèce humaine !

Mais fort heureusement, tel ne semble pas devoir être notre très proche avenir. Même si certaines prophéties laissent présager une apocalypse, préludant elle-même à un renouveau pastoral pour l'humanité (*). On pense notamment au fameux quatrain de Nostradamus, celui qui annonce l'arrivée d'un « Grand Roy d'Effrayeur » appelé à se manifester avec son cortège de catastrophes à la date fatidique du 28 juillet 1999.

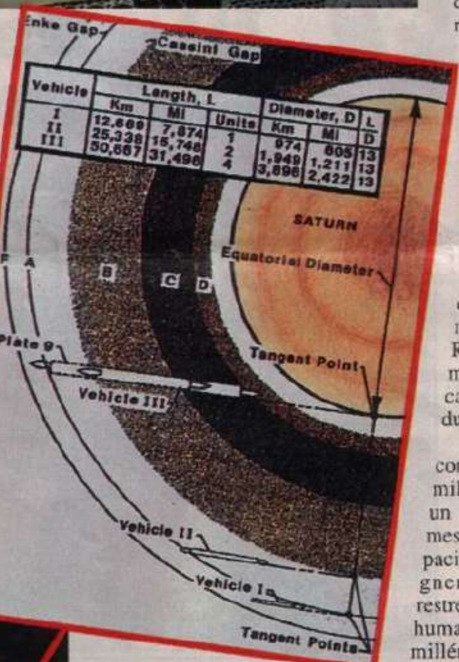
D'autres pensent, tout au contraire, que l'aube du troisième millénaire pourrait bien marquer un tournant positif pour les hommes, établissant enfin des contacts pacifiques et richissimes en enseignements avec des « para-terrestres ». Des êtres issus d'une race humaine exilée depuis des déluges millénaires sur d'autres planètes et de retour pour guider à temps l'hu-

Un cataclysme, survenu il y a treize mille ans, les aurait obligés à fuir la Terre à bord d'arches de Noé volantes...

struments de bord. Mais la NASA a igneusement préservé le secret pen- t plus de quinze ans à propos res documents analysés au moyen microscope à enregistreur et à ouvoir lumineux. **Là sont appa- r gigantesques appareils spatiaux saturniens, étrangement inhabituels dans leur apparence et leurs dimensions colossales.**

relatifs à l'espace qualifiés de non hostiles ».

Or, des engins de cette taille, ont estimé les responsables de la NASA – qui peuvent se tromper lourdement, en l'occurrence –, ne peuvent qu'être considérés comme « hostiles ». Et, à ce titre, leur existence ne devrait et n'aurait pas dû être révélée. Une cinquan-



Guy Tarade a dressé une carte montrant la position des vaisseaux spatiaux sur les anneaux de Saturne.

... et leurs descendants, nos lointains cousins, surveilleraient notre planète depuis trois gigantesques astronefs basés dans la banlieue céleste de Saturne

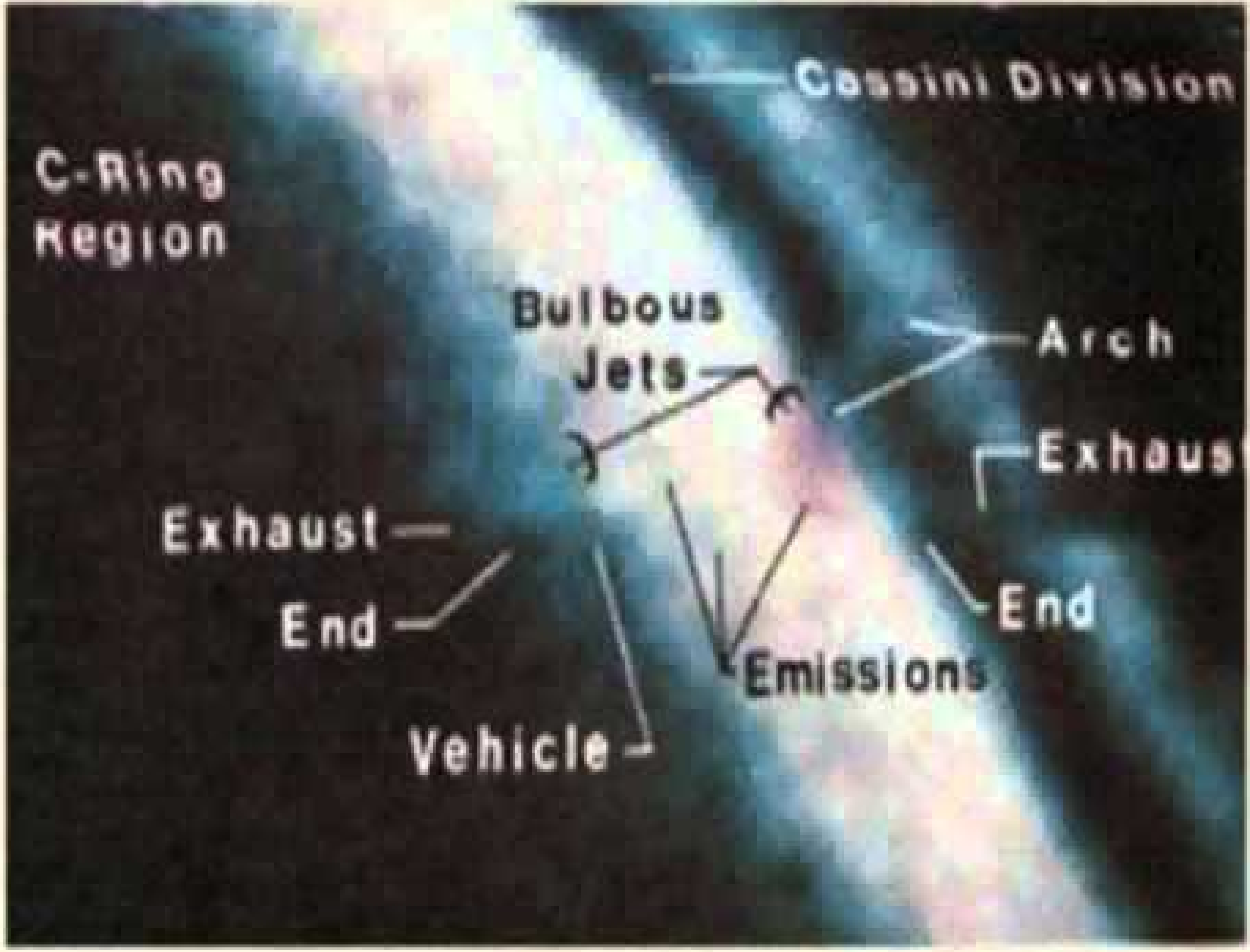
En face de ces monuments de l'espace, indéniables preuves d'une super-intelligence extraterrestre, les scientifiques américains ont préféré respecter « l'acte de l'Espace » signé en 1958 au plan mondial. Ce traité stipule que « le public ne doit être informé que de faits

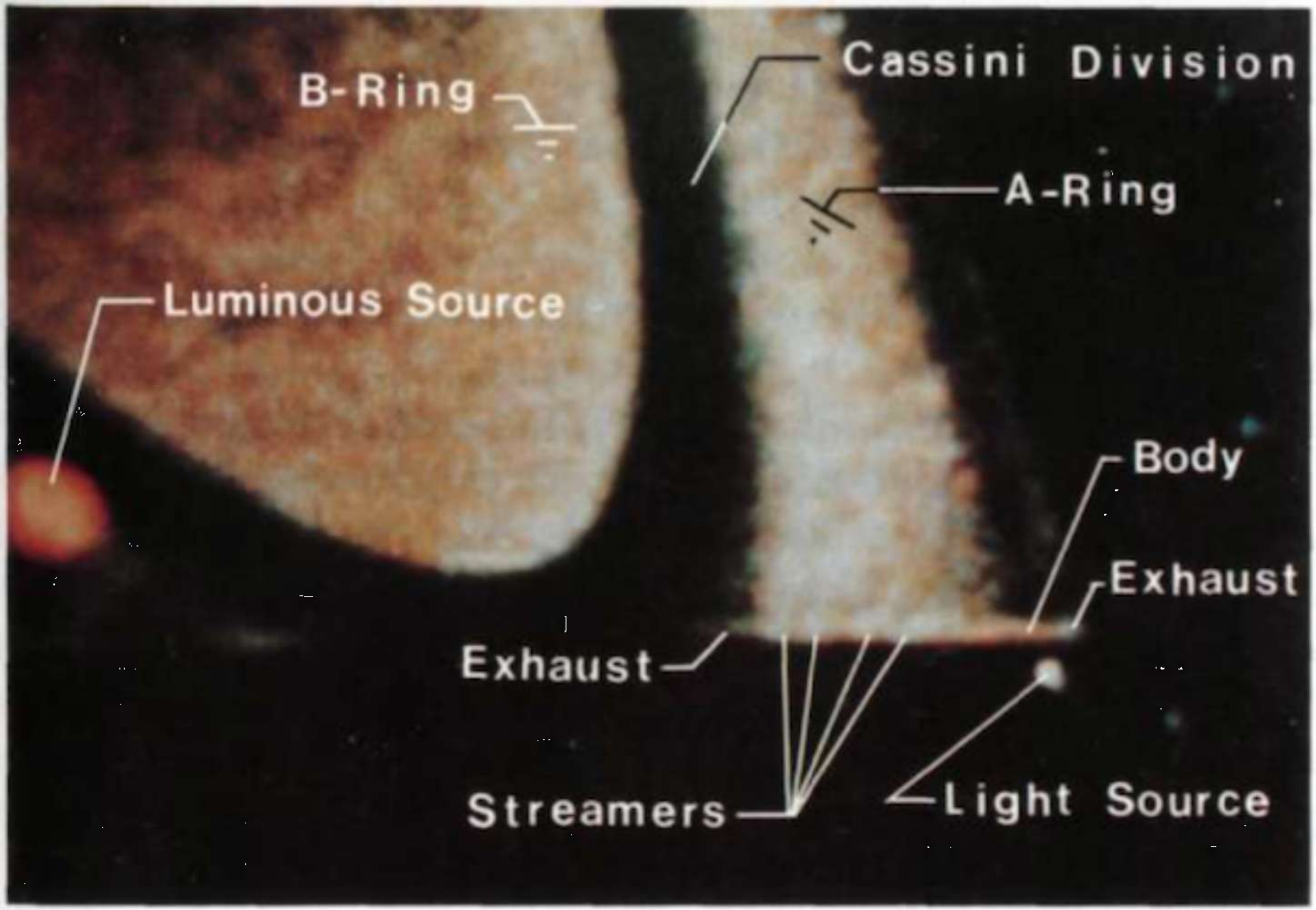
taine d'initiés ont alors été fermement invités à garder le silence. Depuis, quinze années se sont écoulées et une autre philosophie est née chez certains de ces scientifiques qui se sont décidés à parler.

En publiant son ouvrage, *Les Anneaux de Saturne* (non encore été édité en France), le docteur Norman R. Bergrun a choisi de mettre un terme au secret, plaçant ainsi sous un nouvel éclairage l'irritant mystère des « soucoupes volantes ». Il répond aussi à certaines questions fondamentales posées par « l'Union européenne des chercheurs pour le Droit de savoir », coordonnée depuis Villeneuve-Loubet,

manité contemporaine vers d'autres valeurs. Comme pour répondre à Gérard de Nerval, poète visionnaire qui annonçait : « Ils reviendront ces dieux que tu pleures depuis toujours. Le temps va ramener l'ordre des anciens jours... »

(*) *Le Grand Monarque. La dernière prophétie de Nostradamus*, par Guy Tarade.


Cassini Division
C-Ring
Region
Bulbous
Jets
Arch
Exhaust
Exhaust
End
End
Emissions
Vehicle



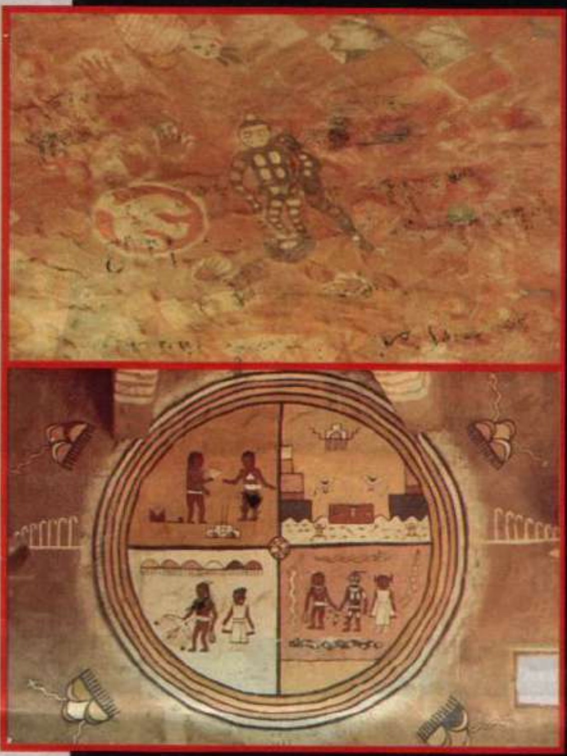
5: Efflux from along the length of a slender body, exhausting at both ends, generates the A-ring.

L'actualité **insolite**

par Jacques Legal

Nos ancêtres,

❑ Cette découverte est tellement importante que la NASA avait préféré la tenir secrète : trois gigantesques vaisseaux spatiaux auraient été repérés dans les anneaux de Saturne, de l'autre côté de notre système solaire ! L'un de ces astronefs a un diamètre voisin de celui de la Terre et un autre mesure plus de cinquante mille kilomètres de long. De plus, le ballet des ovnis serait géré depuis ces mégastations de l'espace par des « para-terrestres », prêts à nous venir en aide.



Ces dessins rupestres précolombiens, datant de seize mille ans et représentant des personnages avec des combinaisons spatiales et des engins interplanétaires, tendraient à démontrer que l'existence des extraterrestres était déjà connue à cette époque.

Jusqu'ici la NASA avait gardé le secret...

Une photo qui n'aurait jamais dû sortir des archives de la NASA et qui représente Saturne et ses anneaux sur lesquels on distingue très nettement la silhouette de trois astronefs géants.

MISES à jour aux Etats-Unis par deux éminents scientifiques – le docteur Walter Vincenti, professeur d'aéronautique et d'astronautique à l'université de Stanford, et le docteur Norman R. Bergrun, auteur du livre *Ringmakers of Saturn* –, les révélations d'une présence d'engins volants autour de Saturne sont pour le moins troublantes. Et de penser que l'impressionnante mise en scène du film *Independence Day* est encore bien en deçà d'une réalité sans doute suspendue dans l'espace saturnien depuis des millions d'années.

On a, certes, du mal à imaginer que de tels continents artificiels flottent dans la banlieue céleste de Saturne. D'immenses planétoïdes conçus à l'évidence par des êtres dont le savoir technologique dépasse de très loin les actuelles connaissances humaines.

"Para-terrestres"

Cela rejoint la thèse soutenue par le professeur Gérard Demarcq, professeur honoraire de géologie et de paléontologie à l'université de Lyon, qui s'apprête à publier un ouvrage intitulé *La Terre, origine des extraterrestres : la théorie des para-terrestres*. D'après lui, ces para-terrestres ne seraient autres que de « grands ancêtres de l'homme » et les descendants d'une ancienne civilisation très avancée dans le domaine de la technologie spatiale. Le professeur Demarcq estime qu'« il est tout à fait concevable que, voilà une trentaine de milliers d'années, ait pu se développer une lignée humaine intellectuellement très avancée ».

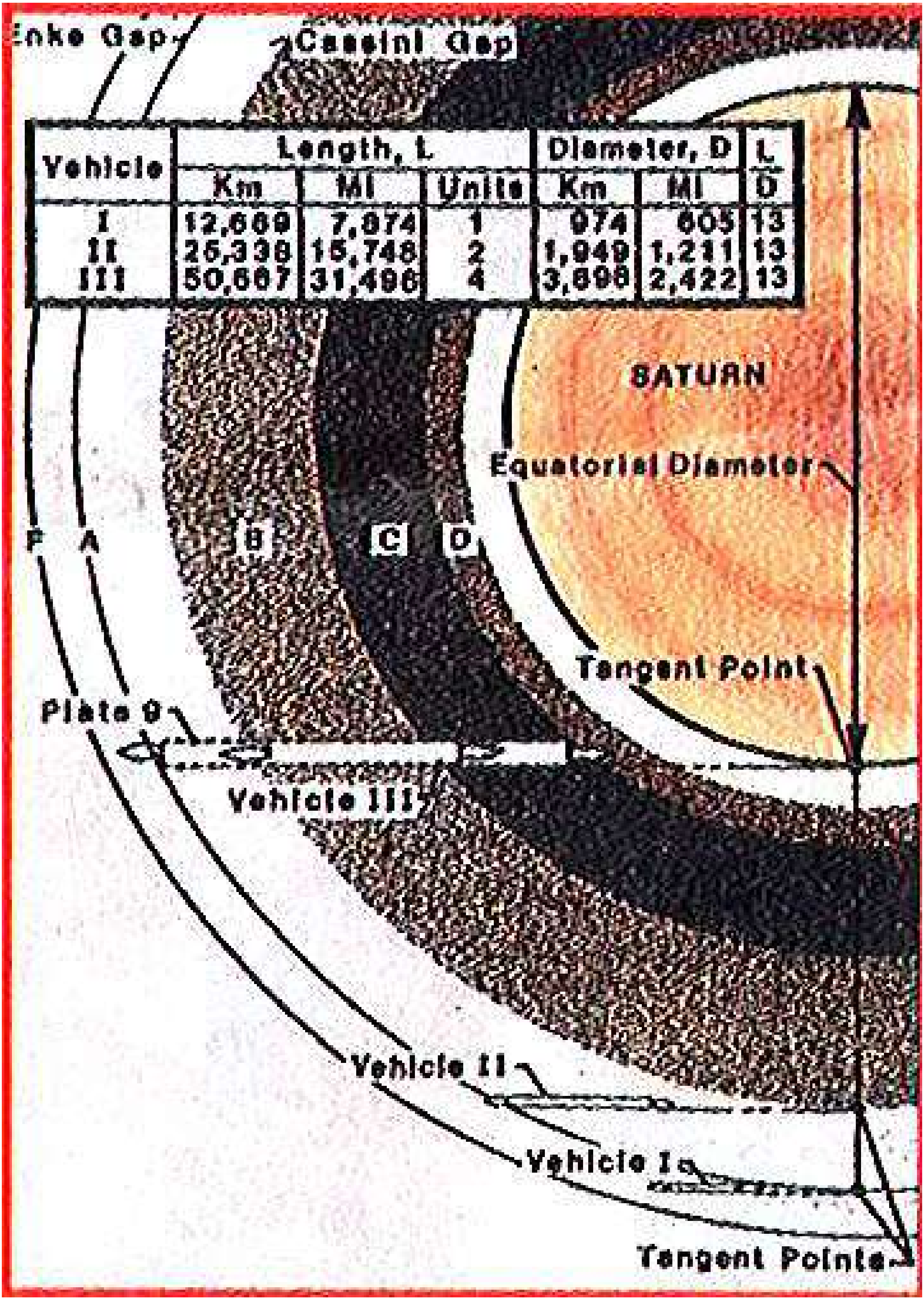
Au lieu de s'orienter, comme les hommes préhistoriques, vers l'utilisation des énergies et des matériaux terrestres, ils se seraient immédiatement intéressés à la physique. Notamment aux forces électro-magnétiques et gravitationnelle. C'est ce qui les aurait conduits, avec la découverte de la propulsion magnéto-hydro-dynamique, vers la construction de vaisseaux spatiaux ultra-performants.

On trouve ainsi une explication aux nombreux dessins rupestres précolombiens, datés de plus de seize mille ans et représentant des personnages avec leurs combinaisons spatiales et descendant d'engins semblant provenir de l'espace.

Au moment d'un déluge résultant d'une fonte planétaire des glaces, il y a treize mille ans, ces visiteurs « para-terrestres », contraints de déménage[r] leurs bases au sol, auraient pu s'enfui[r] à bord de véritables arches de Noé volantes, semblables aux astéroïdes qu[i] flottent encore aujourd'hui dans les anneaux de Saturne.

Ils auraient aussi pu créer d'autre[s] bases sur diverses planètes et y laisse[r] des traces aussi étonnantes que de[s] vestiges de sphinx et de pyramides, en tous points semblables à ceux de Ghi-

Norman Bergrun The Ringmakers Of Saturn



Vehicle	Length, L			Diameter, D		L/D
	Km	Mi	Units	Km	Mi	L/D
I	12,669	7,874	1	974	605	13
II	25,338	15,748	2	1,949	1,211	13
III	50,667	31,496	4	3,898	2,422	13

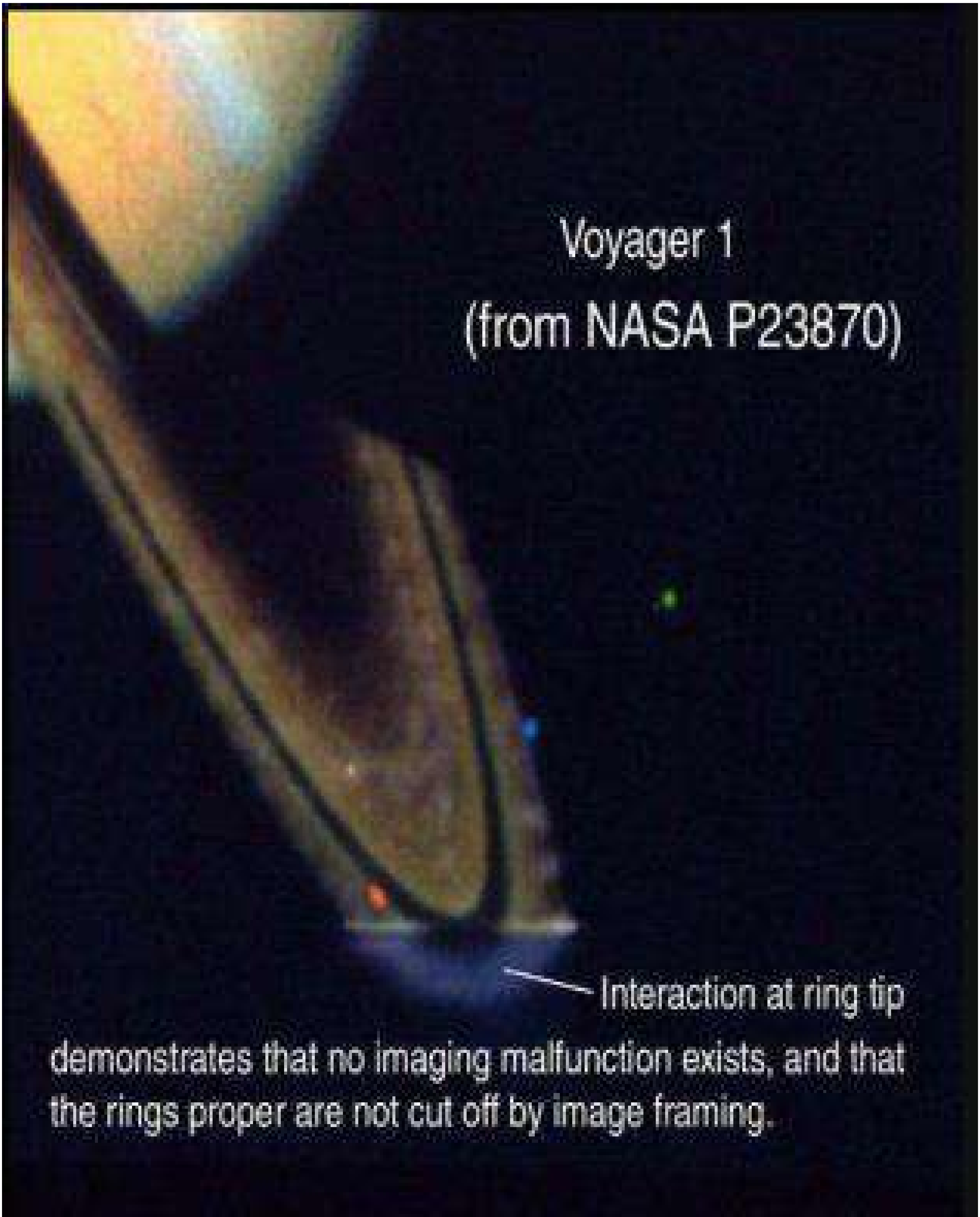


Figure 4: Figure 2 with brightness applied selectively to ring system only.

Alena with laser gun in front of the Meier's office. 6.7.1988.
Meier, Semyase's center of the silver star.

The hole in the tree trunk that Meier claims was caused by the laser gun. Credit: UFO Photo Archives

Meier holding the alleged extraterrestrial laser gun. Credit: UFO Photo Archives

Photo analysis aside, Korff and other skeptics have suggested that the UFOs in Meier's photos are simply models. It was not extraordinary in the pre-Photoshop days of the 1970s for someone to hoax a UFO photo by photographing models, Frisbees, hubcaps, and other physical objects. And while some Meier supporters are quick to contend that it would be impossible for a one-armed man to stage UFO photos, Meier himself admits to taking pictures of UFO models. Burned photos of these models were allegedly found in Meier's trash can by Martin Sorge, who at one time was Meier's friend. As with many details of the Meier story, there are divergent accounts of this incident. While some accounts claim that Meier's children created models of the UFOs, other accounts credit Meier with creating the models. In *UFO . . . Contact from the Pleiades*, Stevens explains, "When I asked about the models of the spaceships he readily admitted trying to model them even though they did not come out well. He even tried photographing the models and the result was so bad that he threw the pictures away."

But a different account is presented by Guido Moosbrugger in *And Yet . . . They Fly!*:

> One day in 1975, Semjase loaned Billy a model of her beamship for a short period to take a few pictures of it and then be returned. On the basis of these snapshots, Billy planned to construct his own model spacecraft, but this plan never came to fruition. A serious mishap occurred to the negatives of these model photographs—they slipped off the office tabletop into a wastepaper basket and were not found until after the entire contents had landed in a fireplace. Kalliope, Billy's wife, discovered the more or less burned negatives in the ashes and handed them over to one of the group members to be restored, if possible.

It is interesting to note that Billy and Kalliope divorced, and she has since stated in interviews with Korff and Swiss UFO researcher and author Luc Burgin that Meier hoaxed his UFO photos and fabricated the tales of extraterrestrial encounters. However, this contradicts her previous statements that Meier's contacts were real and that she, herself, witnessed events with Billy.

Select Meier photos have received far more skepticism than others. Among those are photos that Meier allegedly took during his travels through space and time with the extraterrestrials. Some of these photos show dinosaurs that Meier allegedly took on the planet Neber. But some researchers, like the Independent Investigations Group, contend that the dinosaurs in these photos are simply illustrations from a book that was published in 1972 titled *Life Before Man*, which was written by Zdenek V. Spinar. The illustrated dinosaurs in this book do appear to be identical to the dinosaurs in the Meier photos.

Another highly criticized set of photos purports to show Asket and Nera aboard a beamship. The women in these photos have been identified as Michelle DellaFave and Susan Lund, who were members of the Golddiggers—a singing and dancing troupe that appeared on the Dean Martin Variety Show. According to a letter posted to the FIGU website by Meier in May 1998, the extraterrestrial Ptaah informed Meier that the photographs of Asket and Nera were actually of their American doubles. Meier went on to explain that the "Men in Black" had intercepted his film, found look-alikes for Asket and Nera, took pictures of them, and substituted these false images for the originals of the Asket/Nera photos. And, he claims the "Men in Black" performed this same trickery with most of his early photos.

One lesser-known Meier photo shows Meier standing in the middle of what appears to be a ring of fiery light. This picture appears in Moosbrugger's book, *And Yet . . . They Fly!*, and is explained to be an "energy belt" of "burning static electricity" emanating from Quetzal's ship above Meier, which does not appear in the photo. Meier's arm is extended over his head in the photo, allegedly holding a microphone to record the sound of Quetzal's ship. Multiple researchers have pointed out that the ring of fire in this photo looks suspiciously identical to steel wool being swung overhead by someone.

Alleged photograph of Asket. Credit: UFO Photo Archives

Still photo from the Dean Martin Variety Show of the members of the Golddiggers, allegedly the source of Meier's photo of Asket. Credit: Greg Garrison Production/NBC

Aside from his photographs, Meier furnishes other evidence to corroborate his claims of extraterrestrial contact, including metal samples, and even an extraterrestrial weapon. Meier gave these metal samples to Stevens, and Stevens had these samples tested by various labs. According to Stevens, tests showed that the elements in the samples were "put together in a very unusual way from normal Earth technology," and that most of the elements studied showed "un-Earthly characteristics." Dr. Marcel Vogel, a chemist, performed several tests on the metals. But according to Kal Korff, Dr. Vogel says the claims made in Stevens's book contradict his opinions. According to Moosbrugger, analysis was also conducted by a metallurgist from the University of Arizona who, "examined one of the metal fragments and analyzed it as a simple 'cooking pot metal' or cheap cast metal alloy used to produce such things as tin soldiers."

Meier claims that an extraterrestrial woman, Alena, left a ray gun with him, but cautioned him not to fire it. Unable to resist the temptation, Meier fired the weapon at a nearby fruit tree, burning a hole completely through the trunk of the tree. Meier showed the tree to Stevens, who took photos of the hole in the tree, and examined it with his finger. But to Stevens, the internal wood of this hole did not appear to have been burned.

Conclusion

The information provided in this article barely scratches the surface of the decades-long Billy Meier story. Meier claims to have much more evidence, including audio recordings, UFO films, and tomes of transcripts from his encounters that are filled with extraterrestrial wisdom. Meier even asserts that, because of his claims, there have been multiple assassination attempts on his life! From this brief overview, it is easy to see why the Billy Meier story is so controversial, and, without a doubt, the most polarizing case in the history of ufology.

The Billy Meier Photo Debate

Independent Investigations Group (IIG) is a group dedicated to investigating paranormal claims. In fact, on their website, www.iigwest.com, IIG offers "$50,000 to anyone who can prove paranormal abilities under scientific testing conditions," and states that, "Of those who have completed a test, not a single one has yet demonstrated any paranormal powers." Notably, IIG has paid particular attention to the Billy Meier UFO case and describes in its online reports how Meier's evidence "can be created by non-extra-terrestrial means."

In its investigations, IIG has specifically recreated many of the UFOs that appear in Meier's photographs, using common household items from the time period of Meier's photographs, such as storage container lids, Christmas ornaments, food platters, and pressure cooker lids. In an attempt to debunk Meier's theories and show how a one-armed man during pre-Photoshop days could create photographs of saucer-shaped objects in the sky, IIG demonstrates how clear fishing line on a pole and creative photography can create the image of a UFO in the sky. IIG's ability to mimic Meier's photos, however, does not necessarily prove that Meier's photos are fakes.

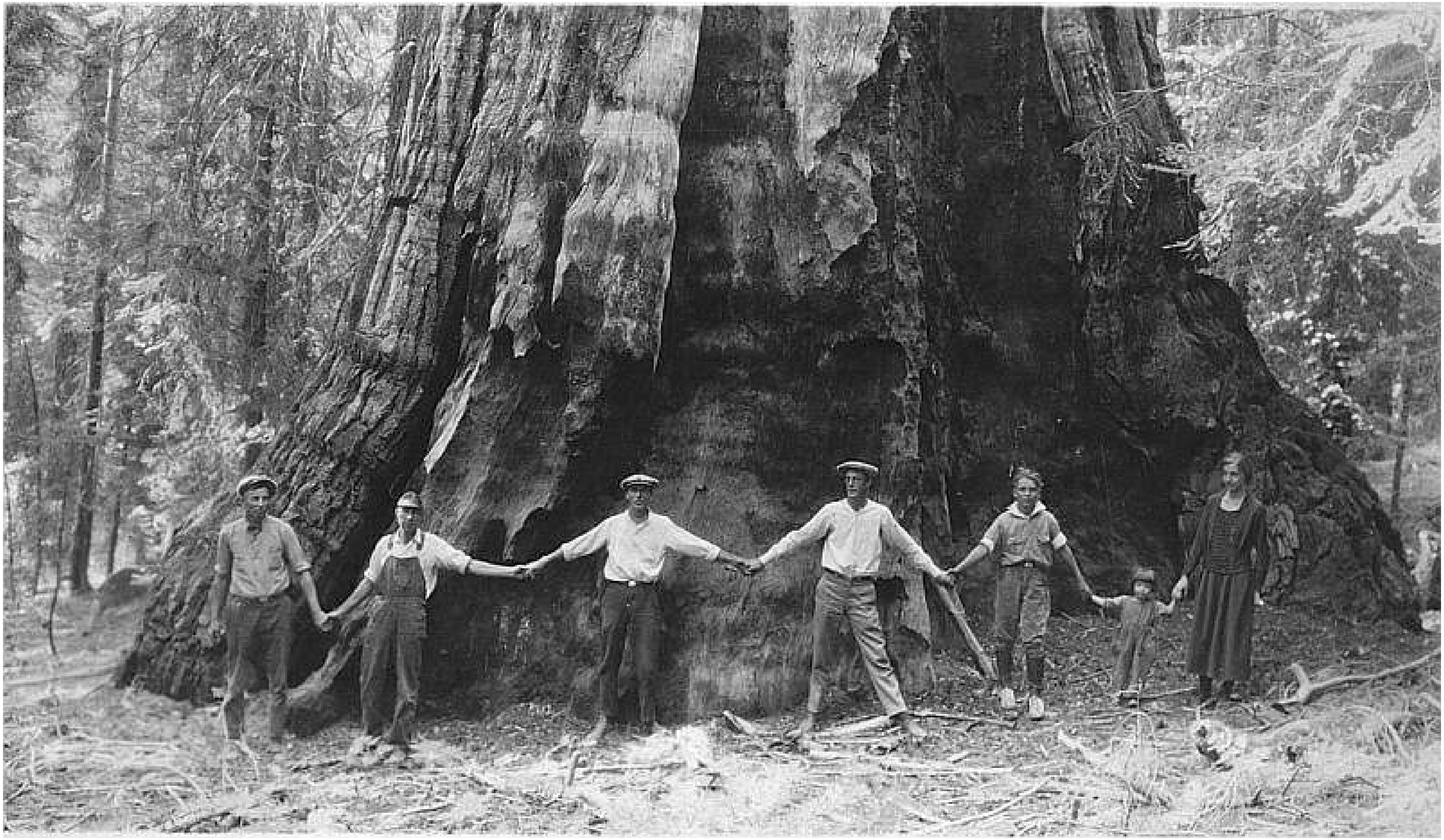
A beamship photographed by Meier Credit: UFO Photo Archives

In response to the debunking of one of Meier's most controversial photos known as the "Wedding Cake UFO," Michael Horn, the proclaimed "Authorized American Media Representative for the Billy Meier Contacts," provides an argument as to why the photo is real on his website, www.thefly.com. In defense of Meier's photographs, Horn provides various photographs showing how certain camera and focus angles are impossible to recreate, and contends that this demonstrates that Meier's photos are real. Horn also says there are many unanswered questions that skeptics would have to address in order to substantiate their accusations, such as, "Where was the model made and concealed?"; "Who in Meier's area possesses the specialized skills required for this precision level of manufacture, at any size?"; "How [were the models] suspended at 30 [feet] by a one-armed man"; and "Why hasn't [anyone] come forward to show that they made and/or now have [the models]?"

IIG posted on its website an alleged email correspondence between representatives of IIG and Horn regarding the Meier case. From the looks of it, the debate between IIG and Horn will surely continue, as will the debate between the Meier believers and skeptics alike.

coolthingoftheday:

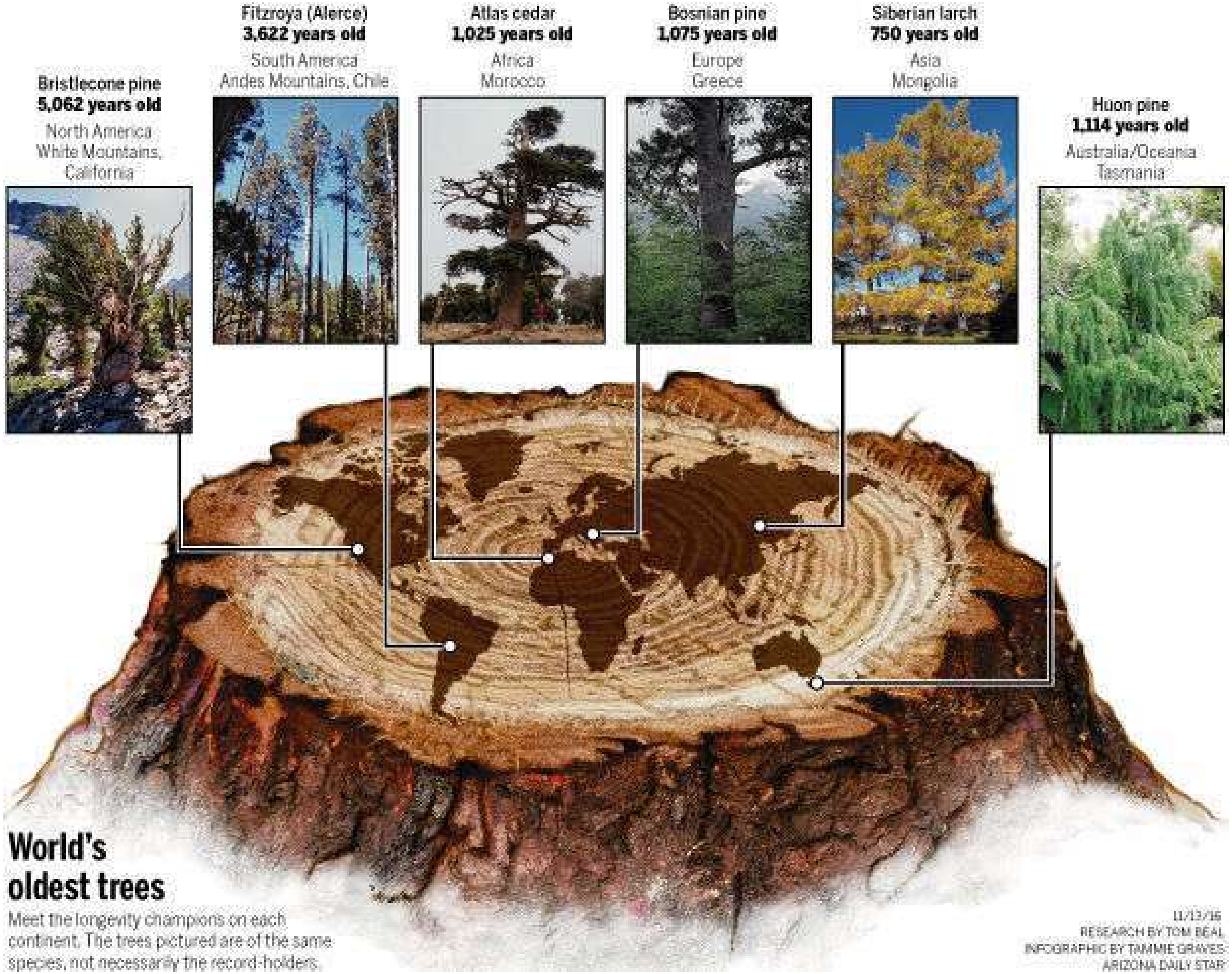
> *Pterocarpus angolensis*, or wild teak, looks like a perfectly normal tree until it's wounded. When you cut into it, it dribbles long trails of dark red liquid down its trunk. For this reason, wild teak has come to be known as **bloodwood**.
>
> This phenomenon is caused by tannin, a naturally occurring polyphenol found in plants, seed, bark, wood, leaves, and fruit skins. Regular plants typically contain about 12-20% tannin - wild teak sap contains about 77%.




Grandidier's Baobab

Dragon Blood Tree

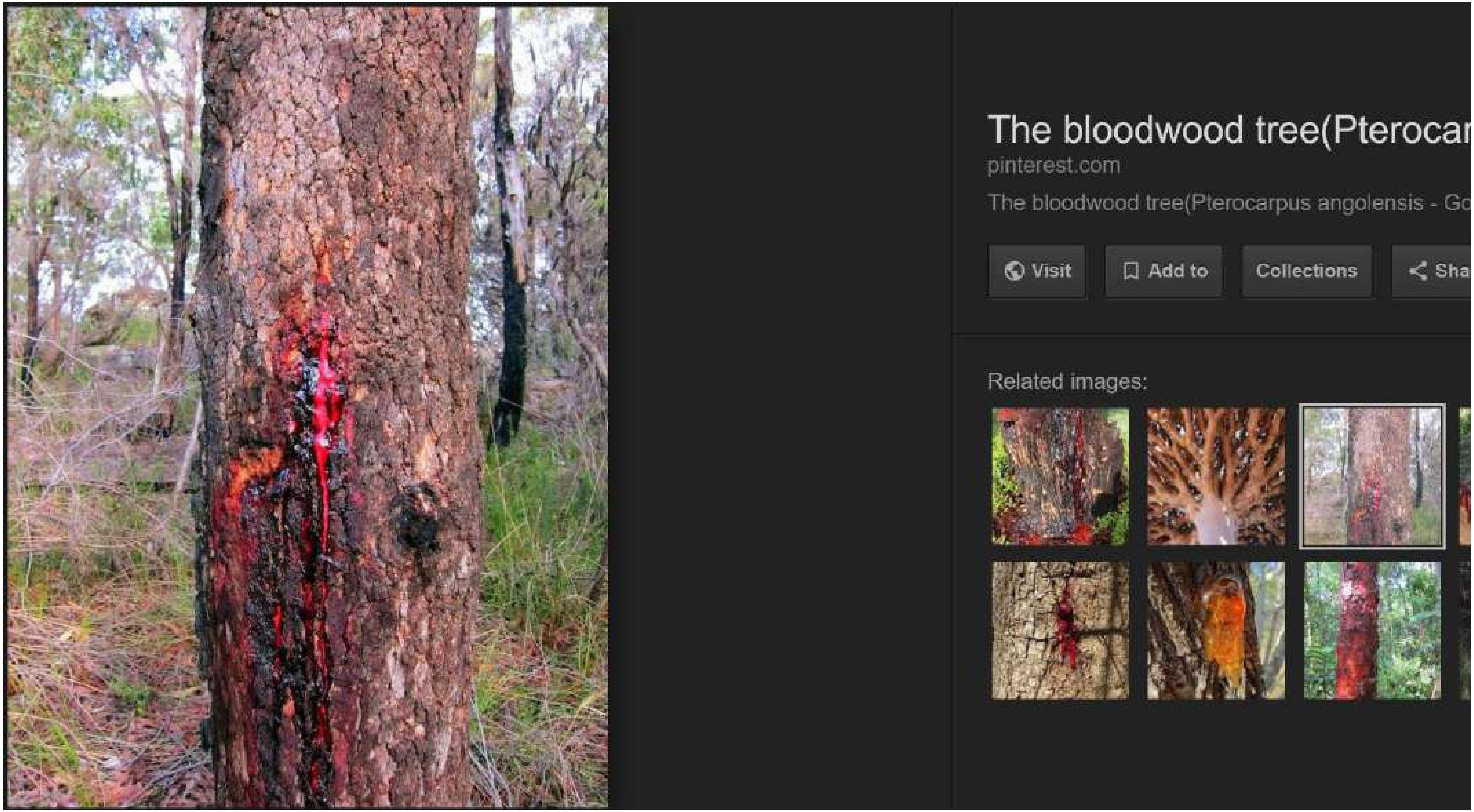
Jacaranda



Bristlecone pine
5,062 years old
North America
White Mountains, California
Fitzroya (Alerce)
3,622 years old
South America
Andes Mountains, Chile
Atlas cedar
1,025 years old
Africa
Morocco
Bosnian pine
1,075 years old
Europe
Greece
Siberian larch
750 years old
Asia
Mongolia
Huon pine
1,114 years old
Australia/Oceania
Tasmania
World's oldest trees
Meet the longevity champions on each continent. The trees pictured are of the same species, not necessarily the record-holders.
11/13/16
RESEARCH BY TOM BEAL
INFOGRAPHIC BY TAMMIE GRAVES
ARIZONA DAILY STAR


石林

THE BIGGEST
17
DRAGO MILENARIO
0:07 / 7:58
CC
HD


The bloodwood tree(Pterocar
pinterest.com
The bloodwood tree(Pterocarpus angolensis - Go
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Add to
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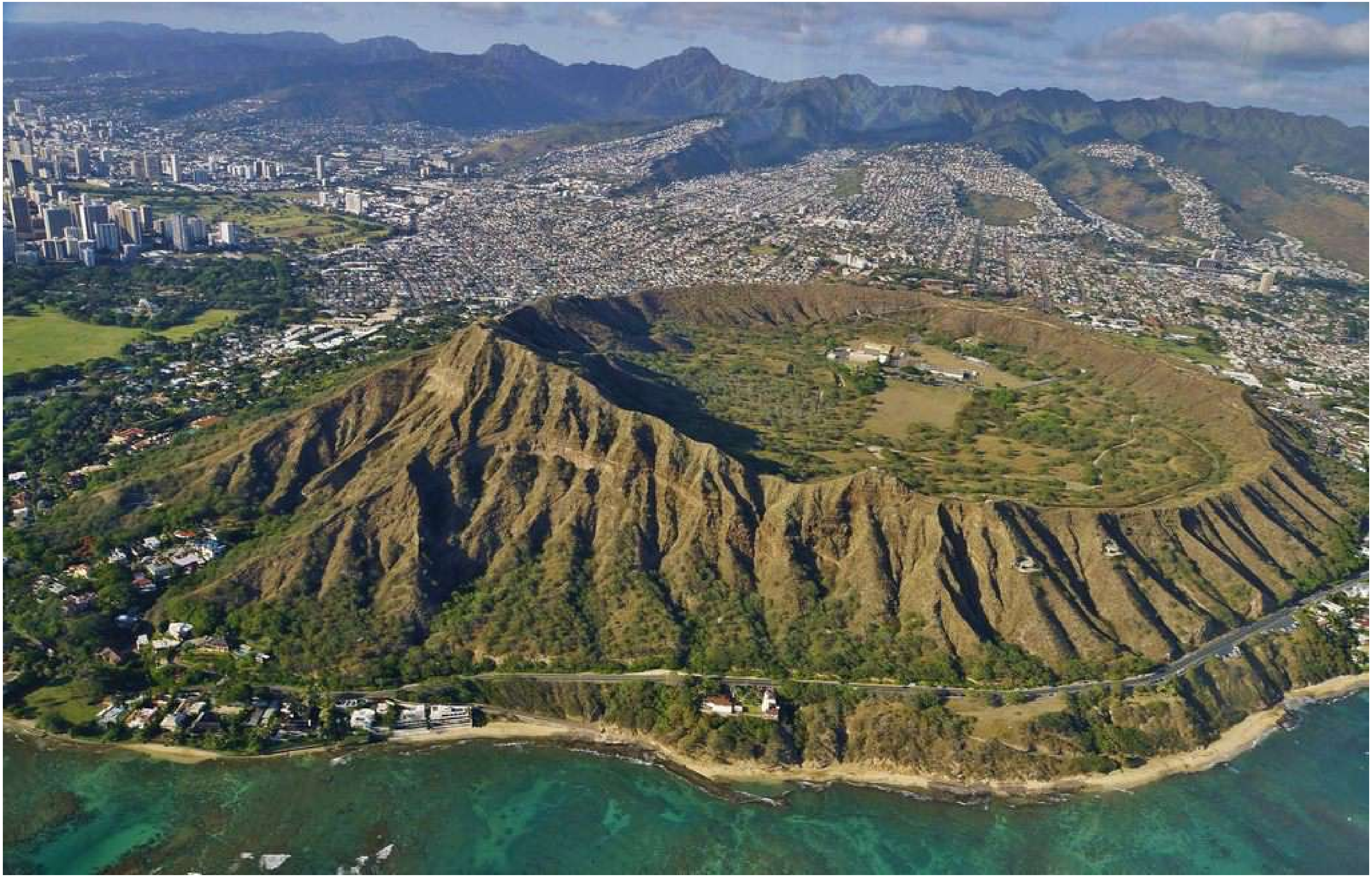
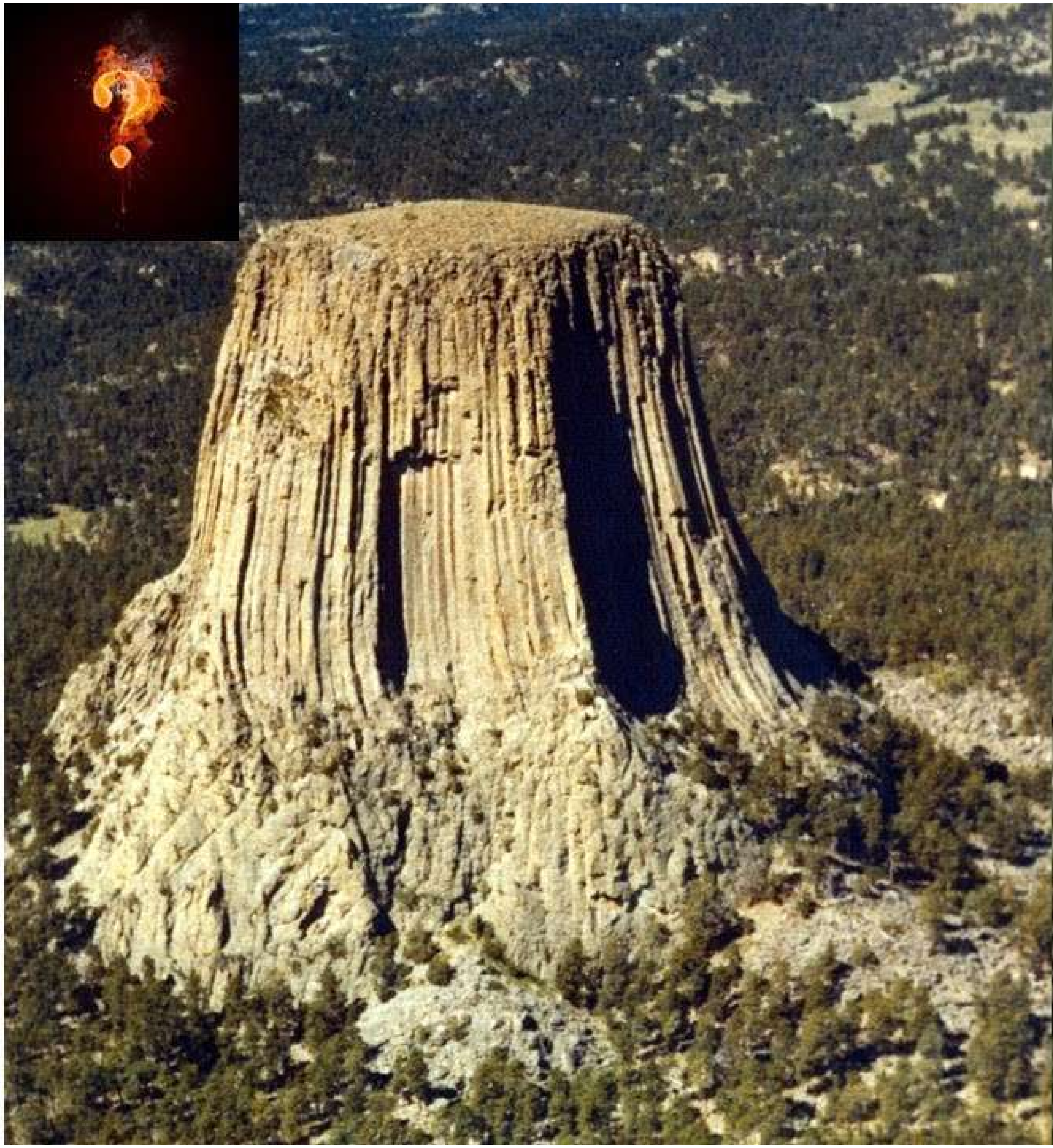
Related images:




N.L'Khalfaoui©



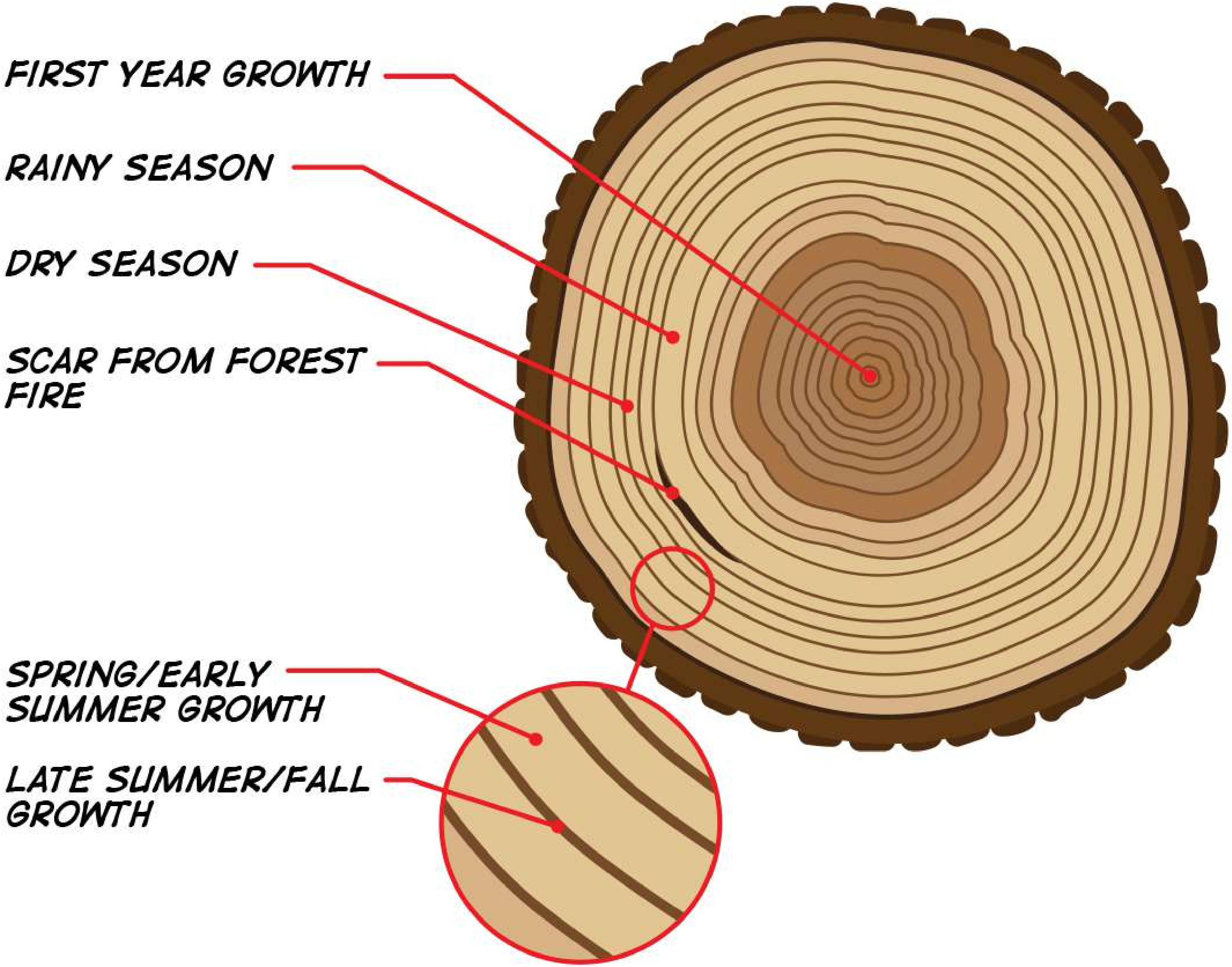

(c) Garrett Fisher

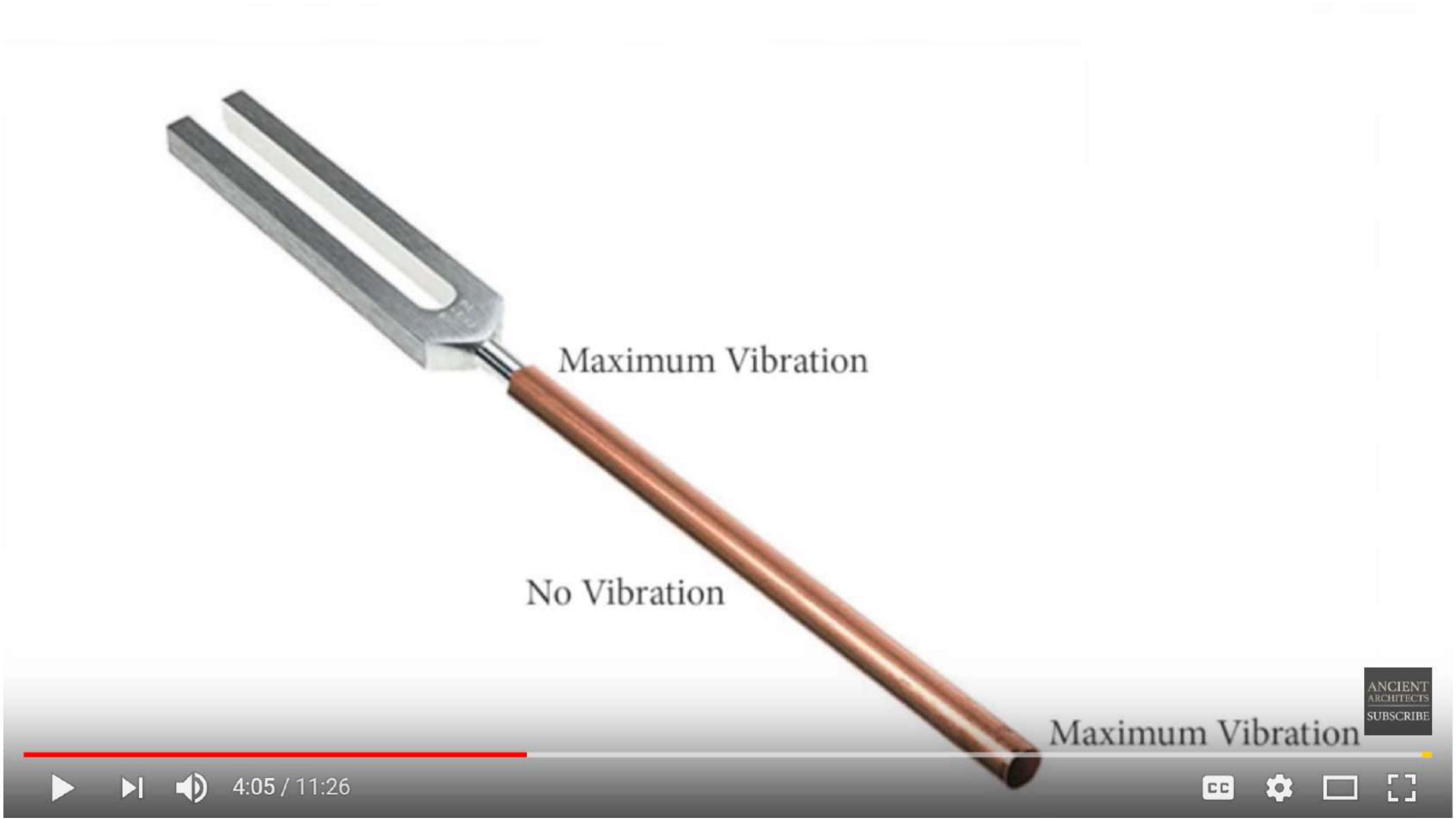









FIRST YEAR GROWTH
RAINY SEASON
DRY SEASON
SCAR FROM FOREST FIRE
SPRING/EARLY SUMMER GROWTH
LATE SUMMER/FALL GROWTH



Maximum Vibration
No Vibration
Maximum Vibration
ANCIENT
ARCHITECTS
SUBSCRIBE
4:05 / 11:26

Japanese Math Professor Excellent Optical Illusionist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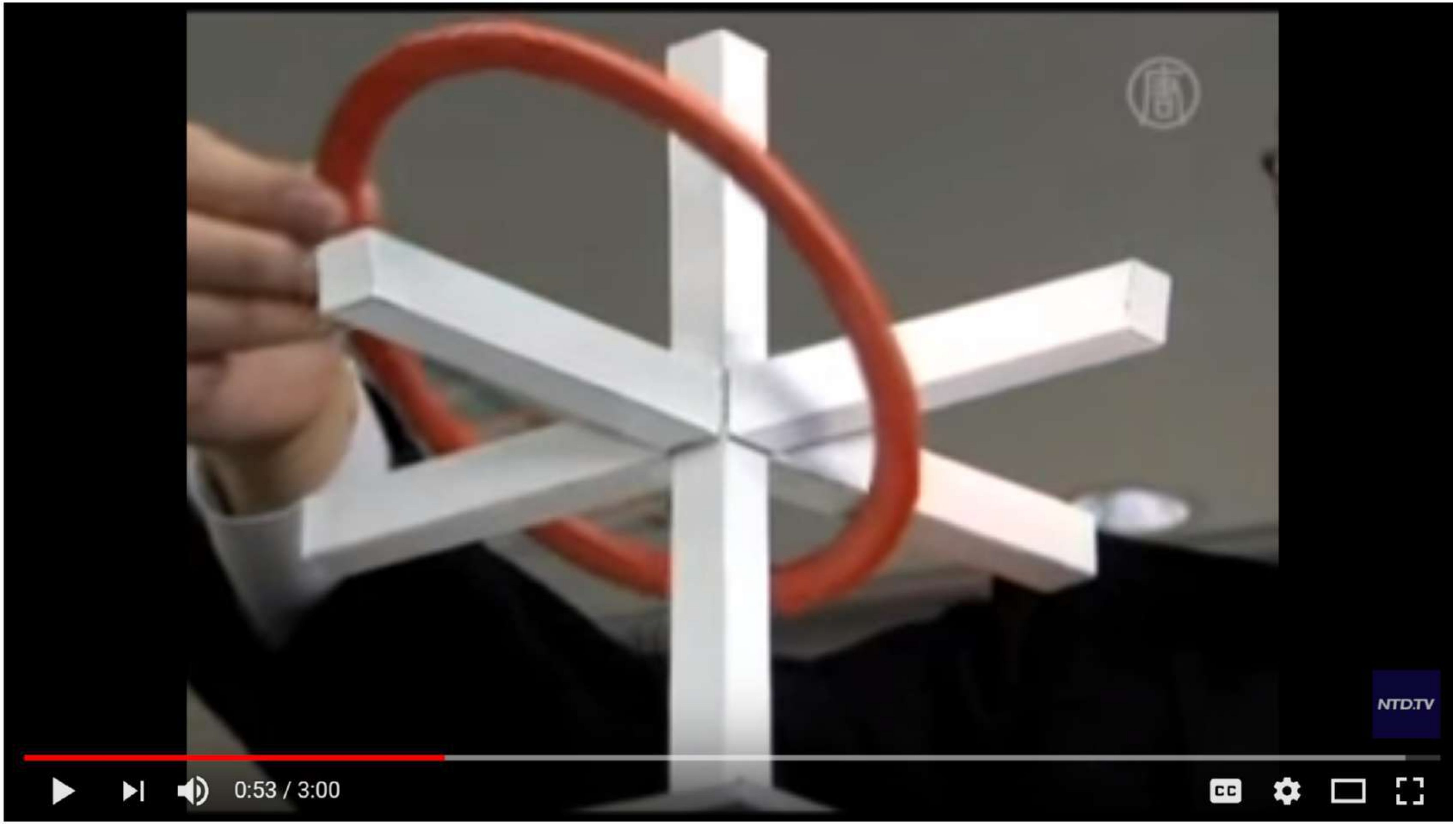
NTD.TV
0:45 / 3:00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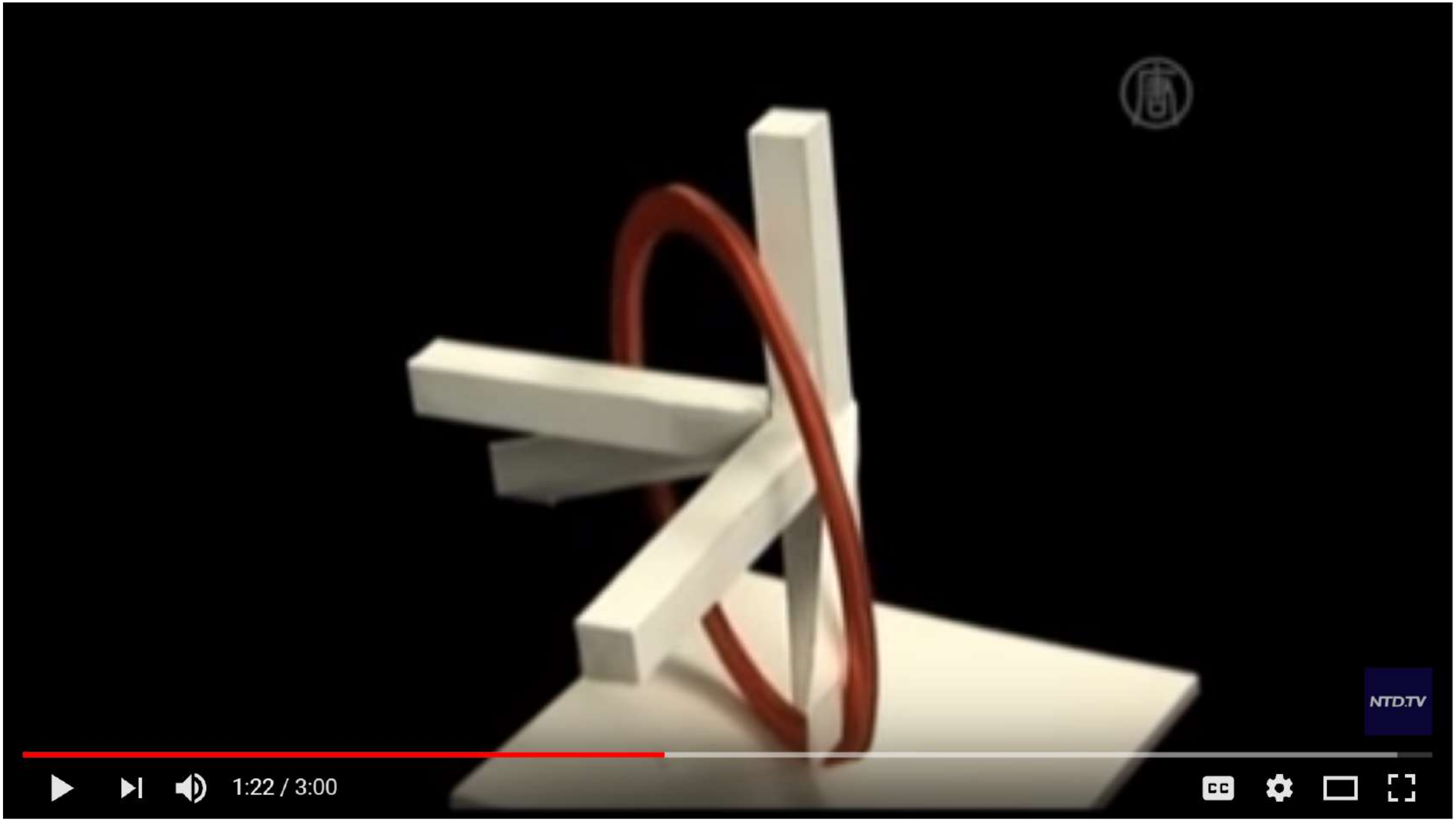
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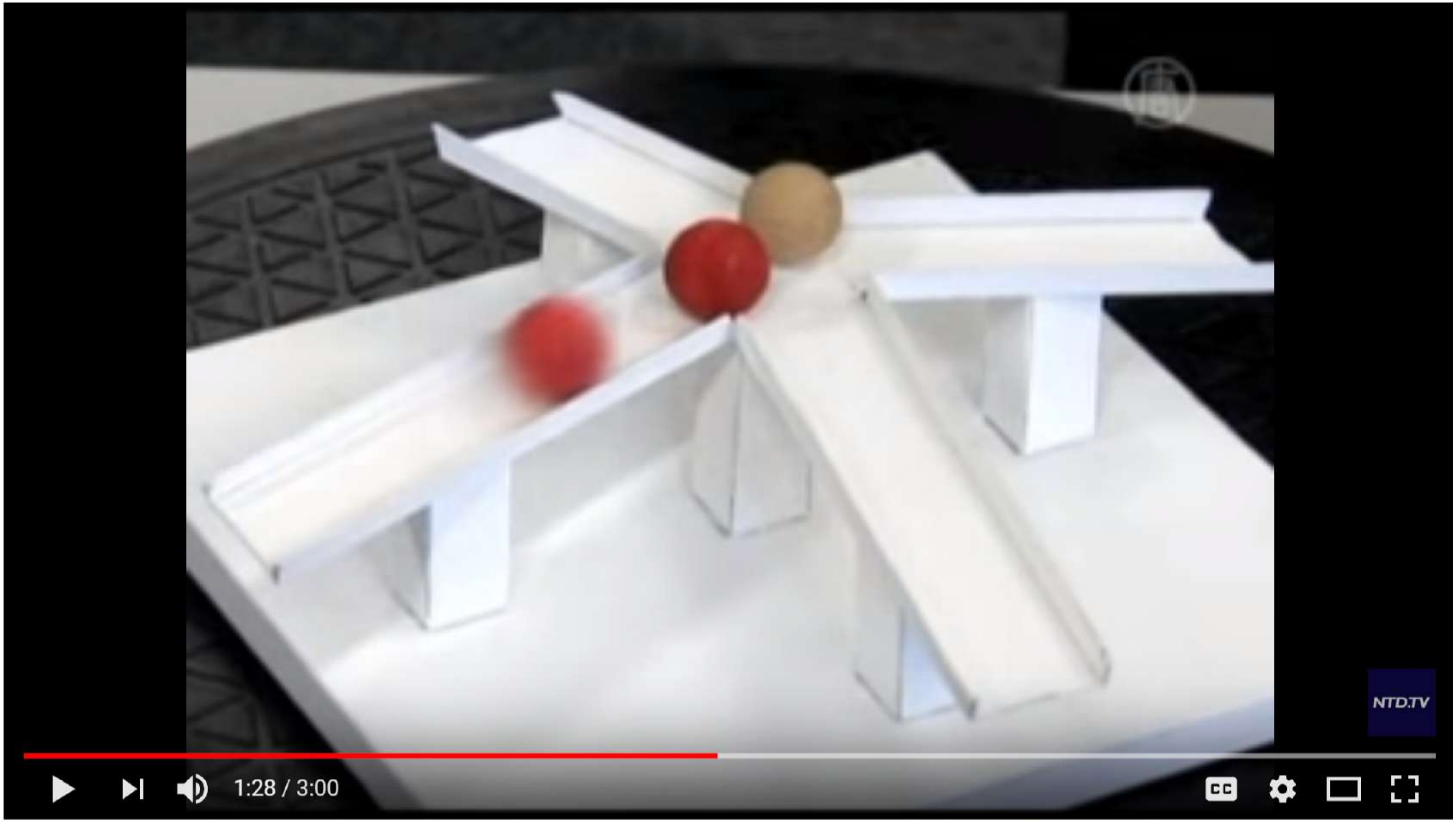
1:22 / 3:00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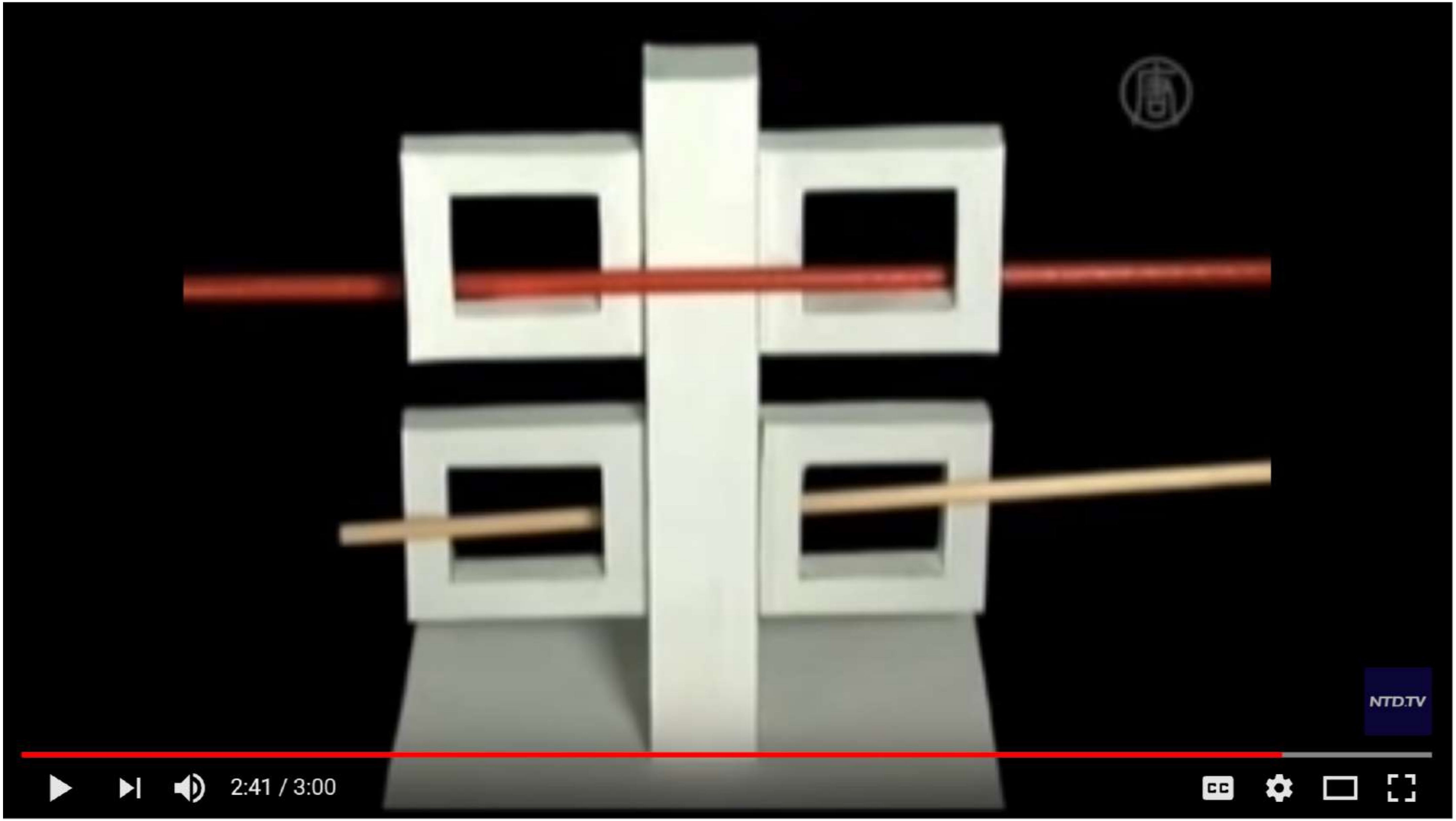
NTD.TV
1:45 / 3:00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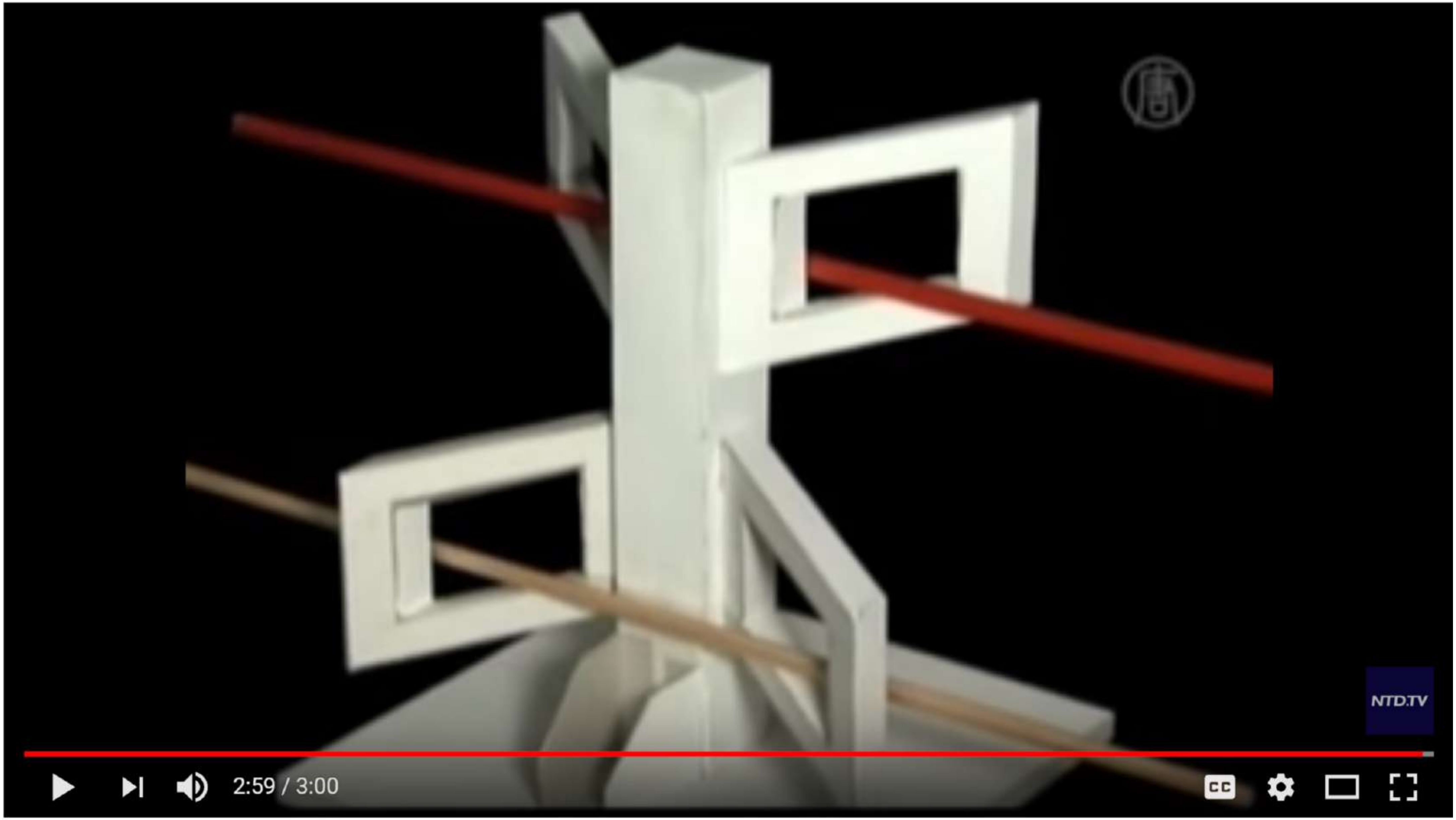
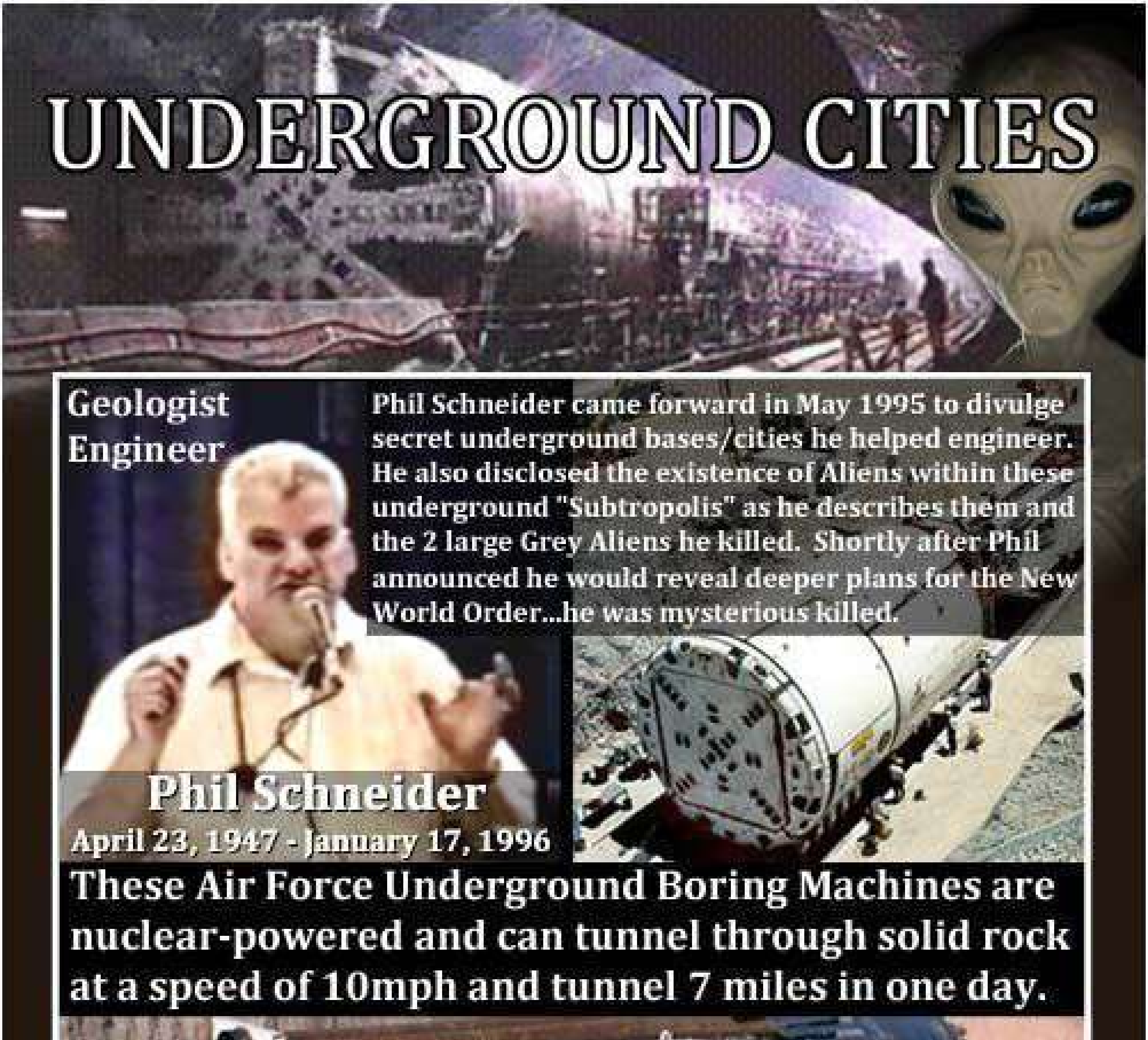
2:41 / 3:00


NTD.TV
2:59 / 3:00


WIRTH

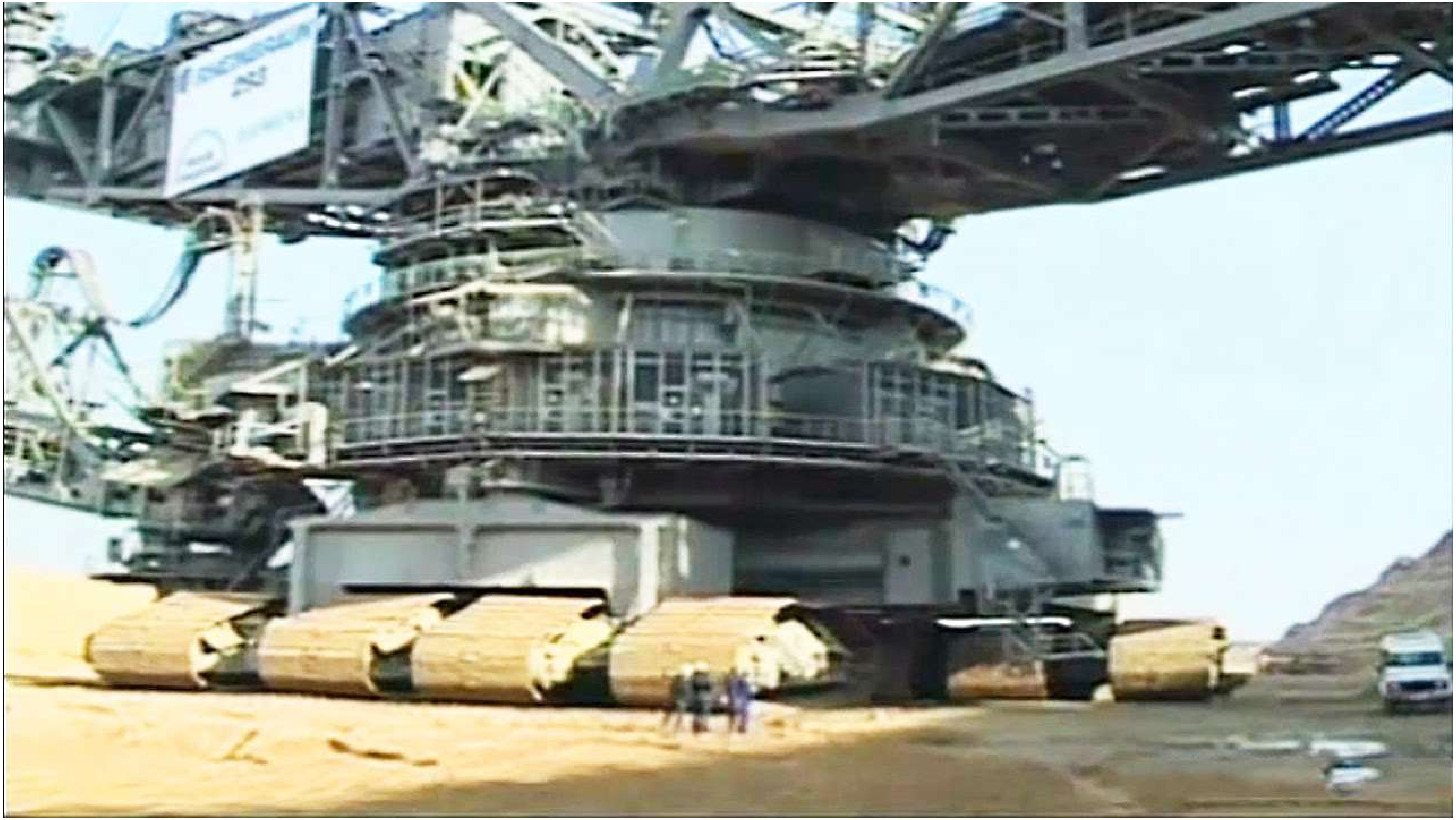
Hauptsammler
Mettmann


UNDERGROUND CITIES
Geologist
Engineer
Phil Schneider came forward in May 1995 to divulge secret underground bases/cities he helped engineer. He also disclosed the existence of Aliens within these underground "Subtropolis" as he describes them and the 2 large Grey Aliens he killed. Shortly after Phil announced he would reveal deeper plans for the New World Order...he was mysterious killed.
Phil Schneider
April 23, 1947 - January 17, 1996
These Air Force Underground Boring Machines are nuclear-powered and can tunnel through solid rock at a speed of 10mph and tunnel 7 miles in one day.
U.S. AIR FORCE
Phil Schneider acknowledges over 50 underground bases that are several stories deep and go on for miles. These underground cities are designed to sustain millions of people for several years.
Copyright 2009 ConspiracyCards


SRs1301 1553

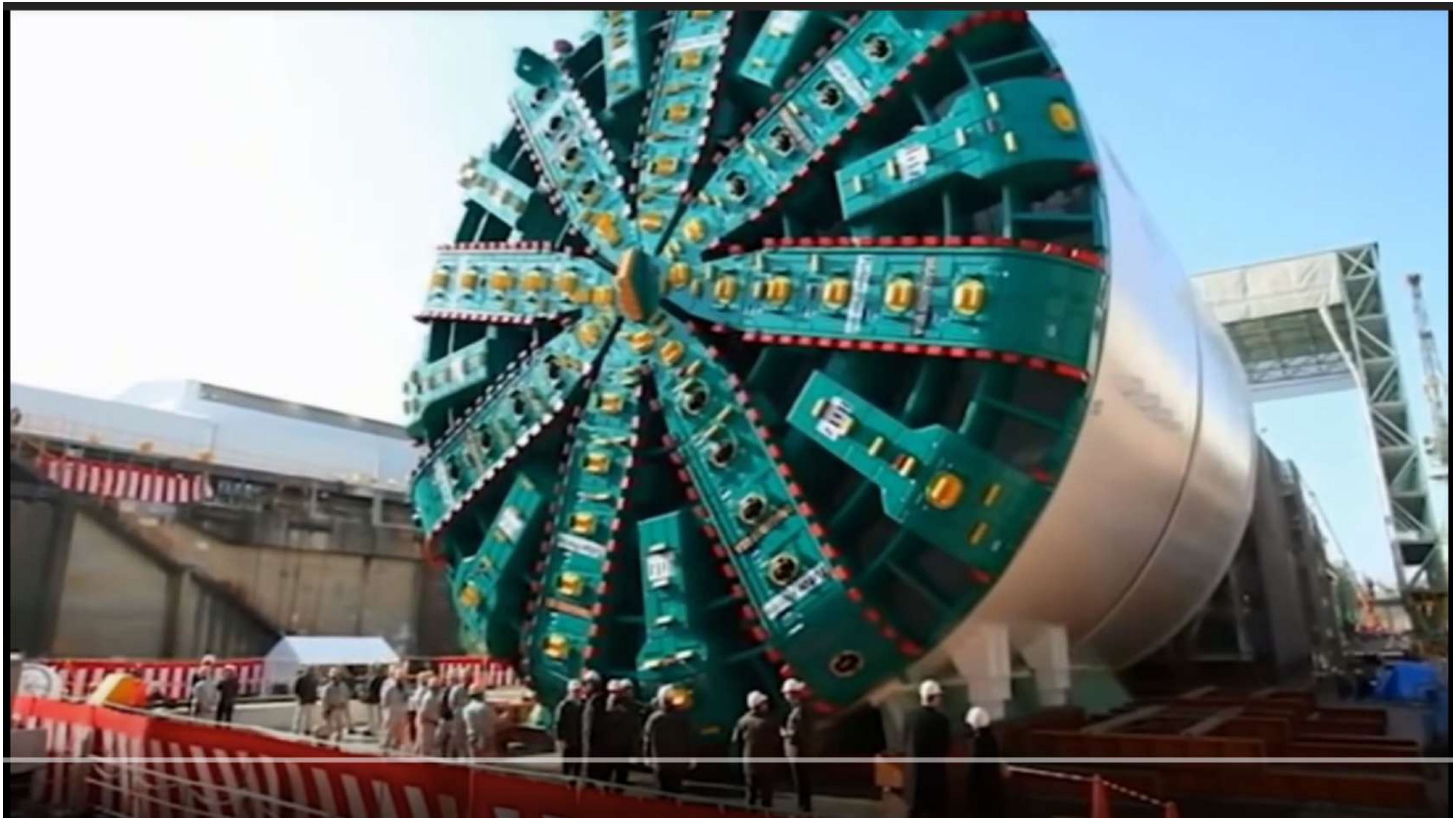

dedmaxopka.livejournal.com © dedmaxopka@gmail.com


BAGGER 293




THIS IS THE BAGGER
228 BUCKET-WHEEL
EXCAVATOR IN
GERMANY
IT CAN EXCAVATE
240,000 TONS
OF COAL PER
DAY.
IT IS THE
LARGEST
LAND VEHICLE IN THE WORLD.
YES, VEHICLE.
THIS THING
MOVES....


BUILDING A BETTER




TALKS WITH TEACHINGS FROM MY COSMIC FRIENDS
ASHTAR SHERAN
ORTHON
angels-heaven.org
Pic. 4395 P EN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Apollo 20 the unknown mission


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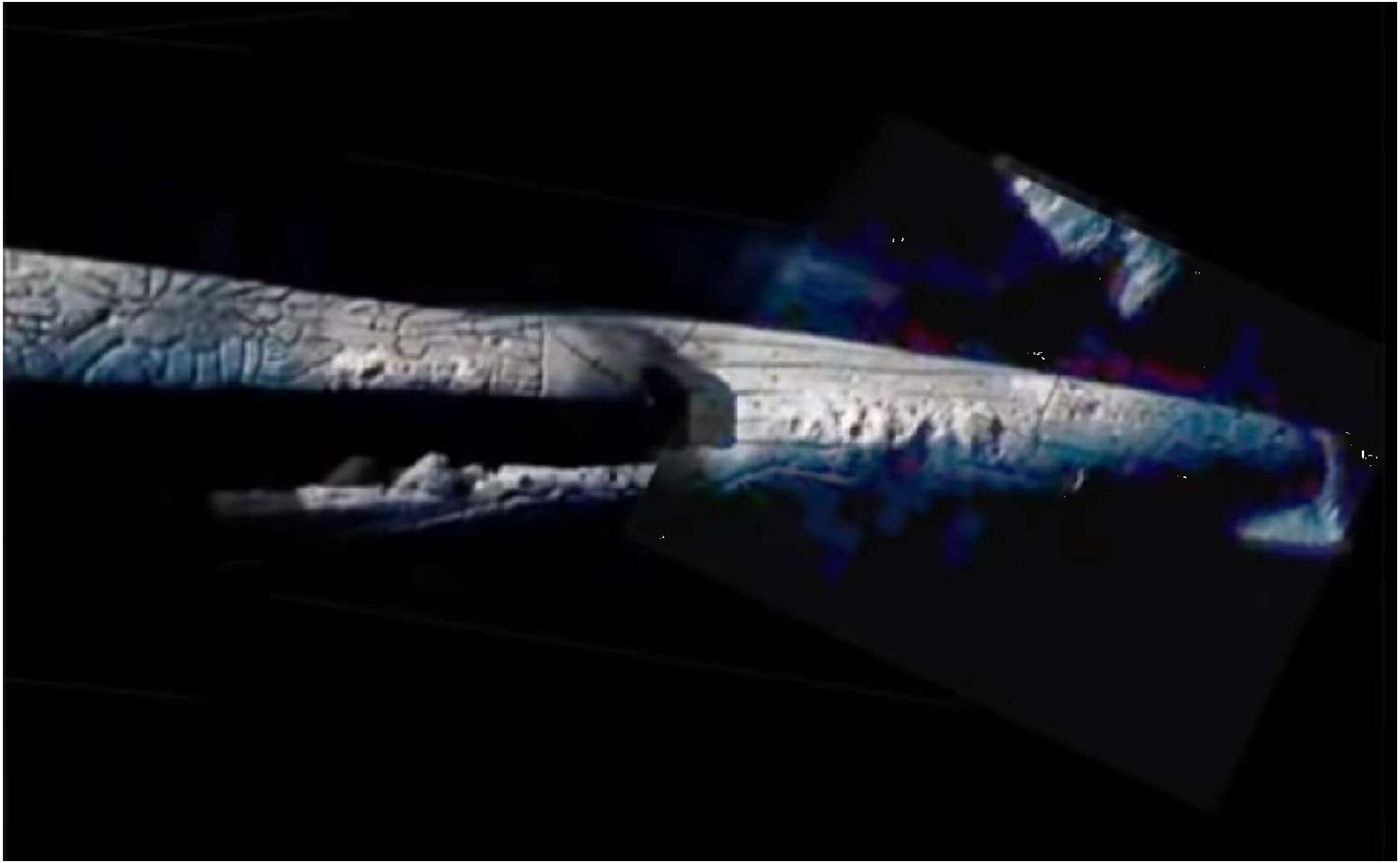
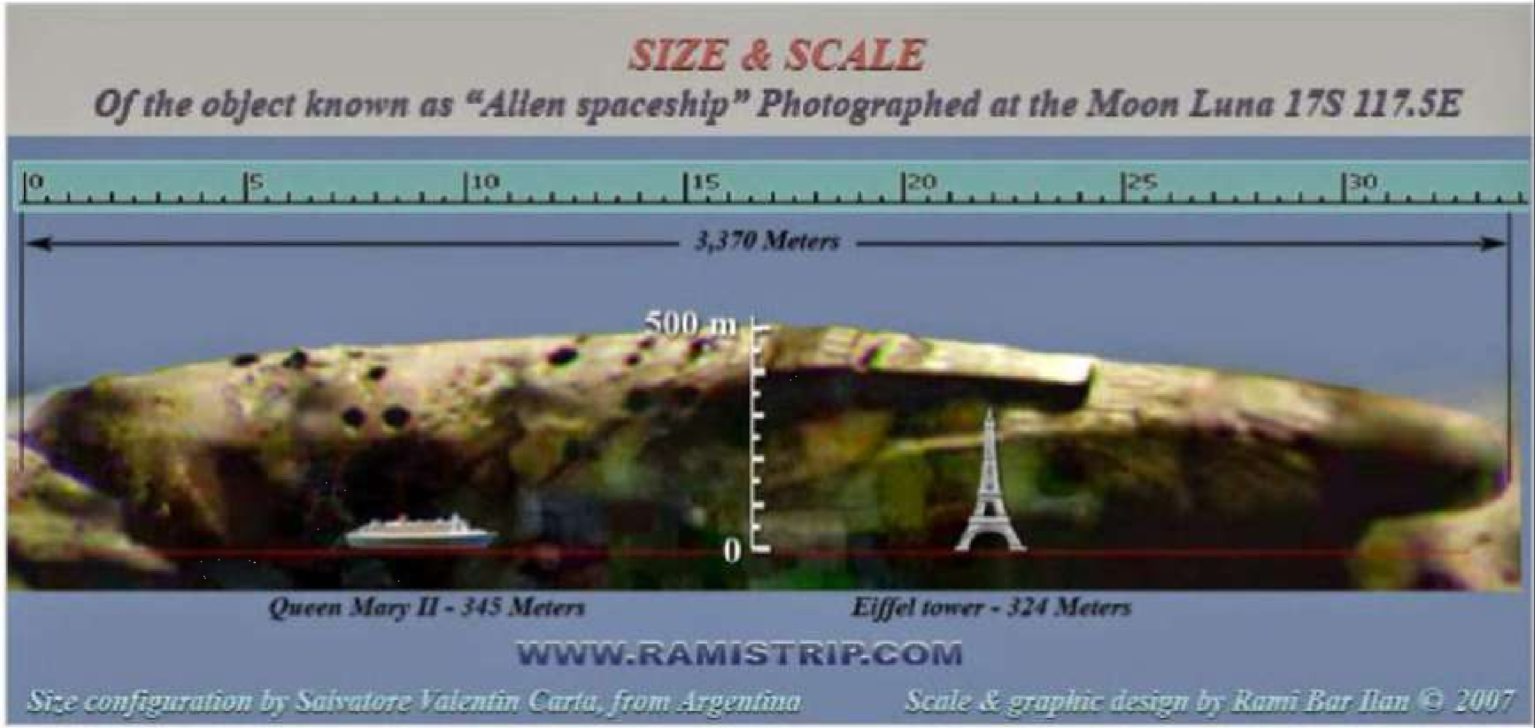
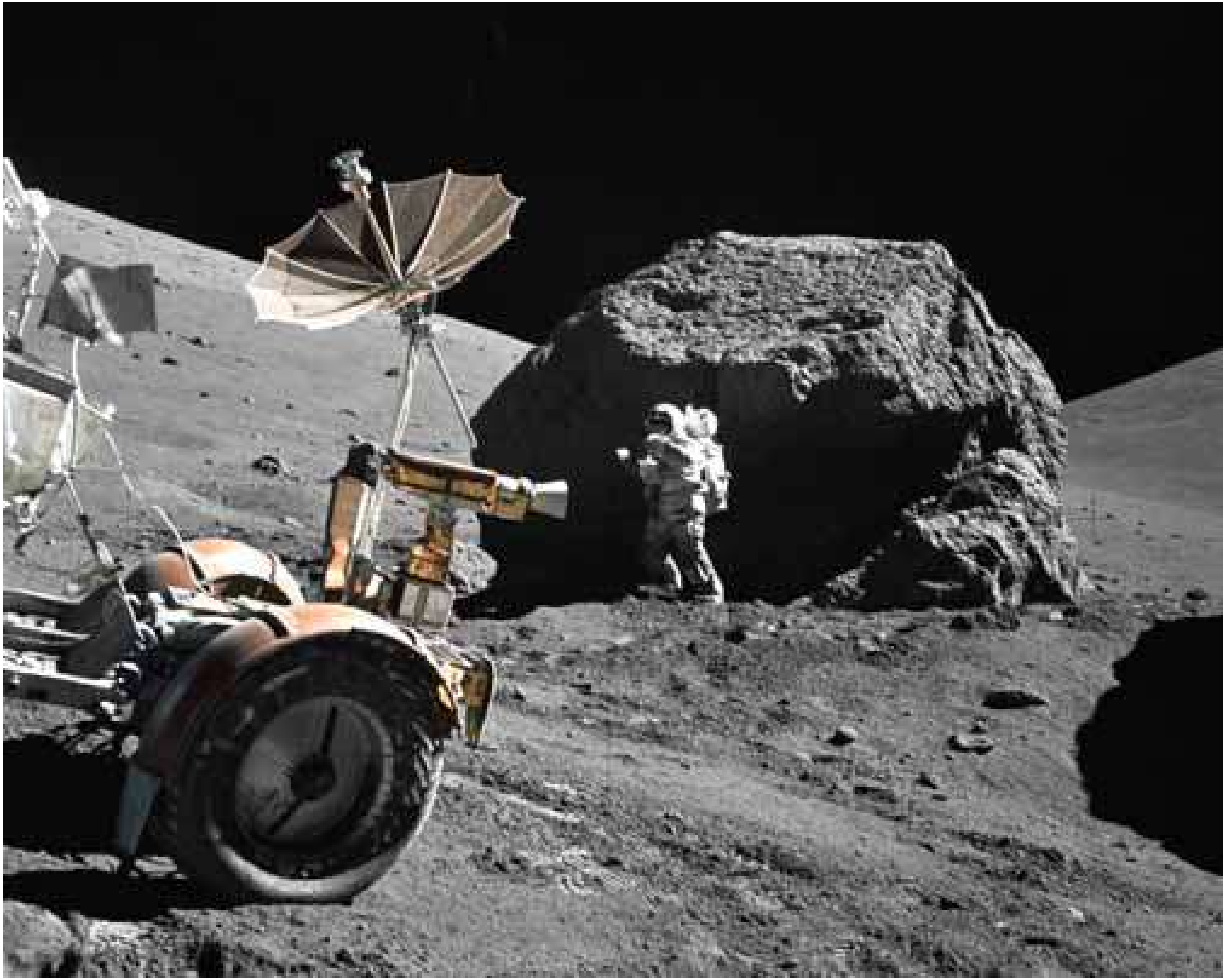
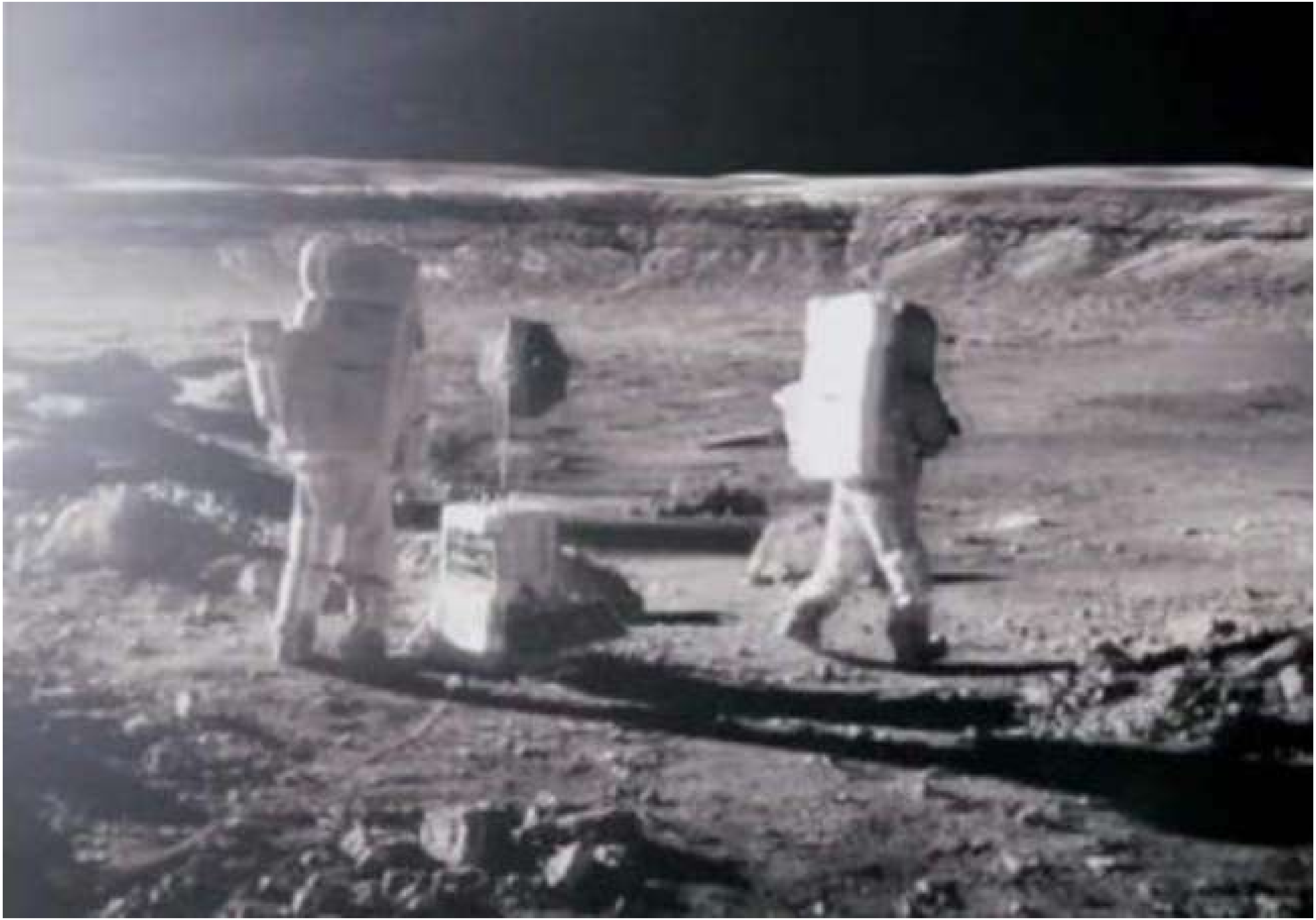
Apollo 20 the unknown mission

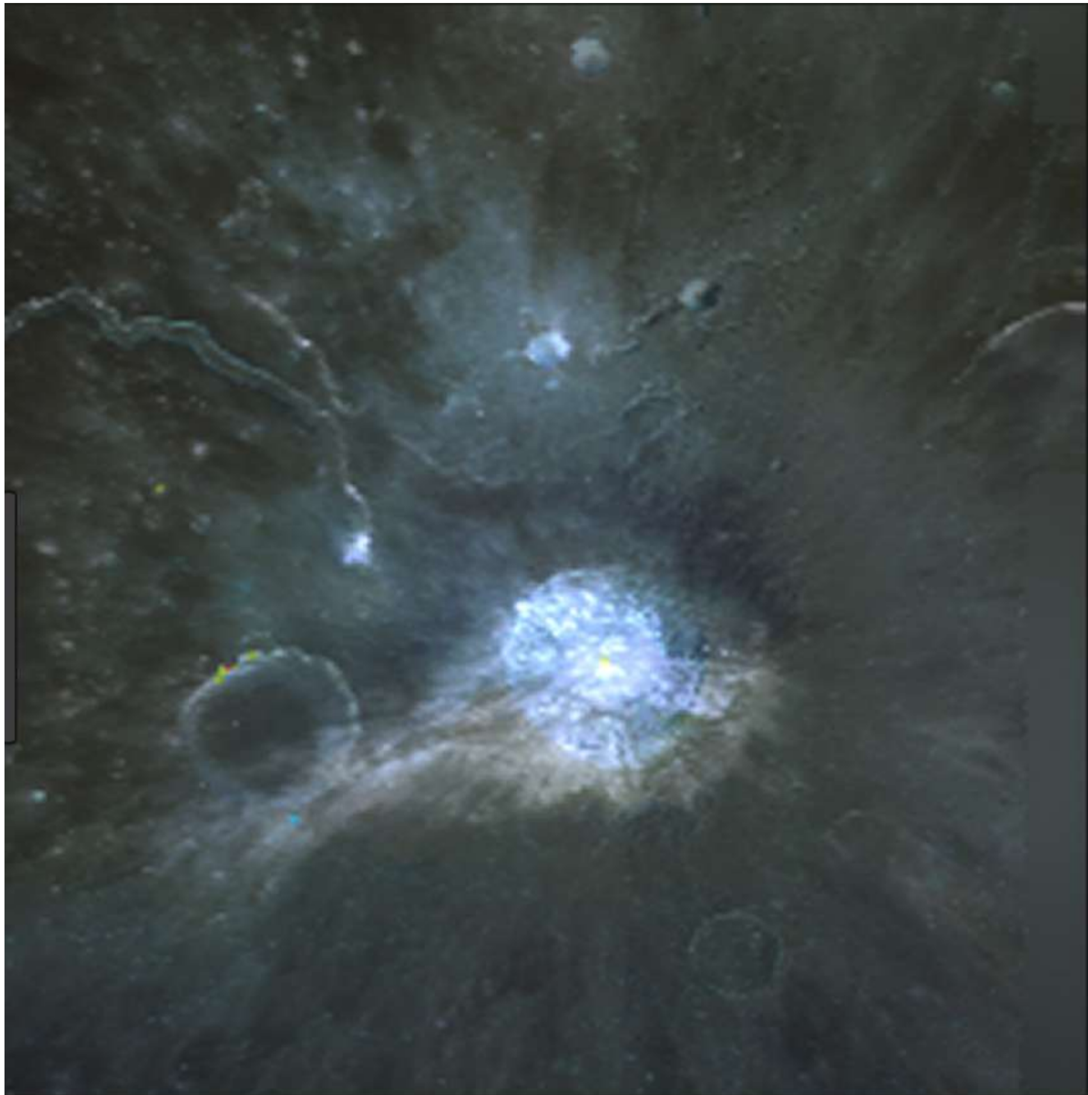



SIZE & SCALE
Of the object known as "Alien spaceship" Photographed at the Moon Luna 17S 117.5E
0
5
10
15
20
25
30
3,370 Meters
500 m
0
Queen Mary II - 345 Meters
Eiffel tower - 324 Meters
WWW.RAMISTRIP.COM
Size configuration by Salvatore Valentin Carta, from Argentina
Scale & graphic design by Rami Bar Ilan © 2007


ALIEN SPACESHIP ON THE MOON
HOW BIG IS IT?
Rami © 2007
WWW.RAMISTRIP.COM
General impression of size & scale - Object around urban structures of Manhattan & Toronto







Aristarchus Crater - Blue Gem

The Living Moon

Credit: USGS/US Navy/Clementine Spacecraft

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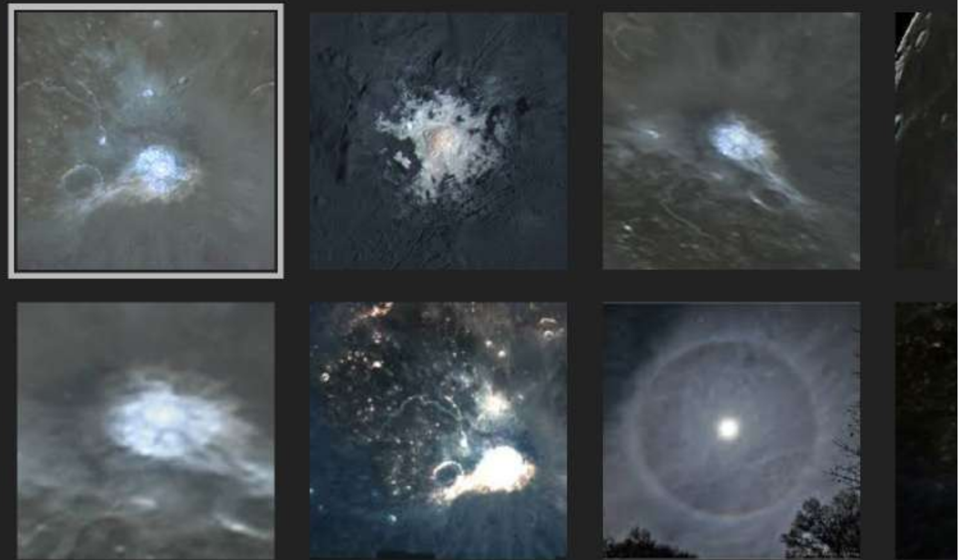
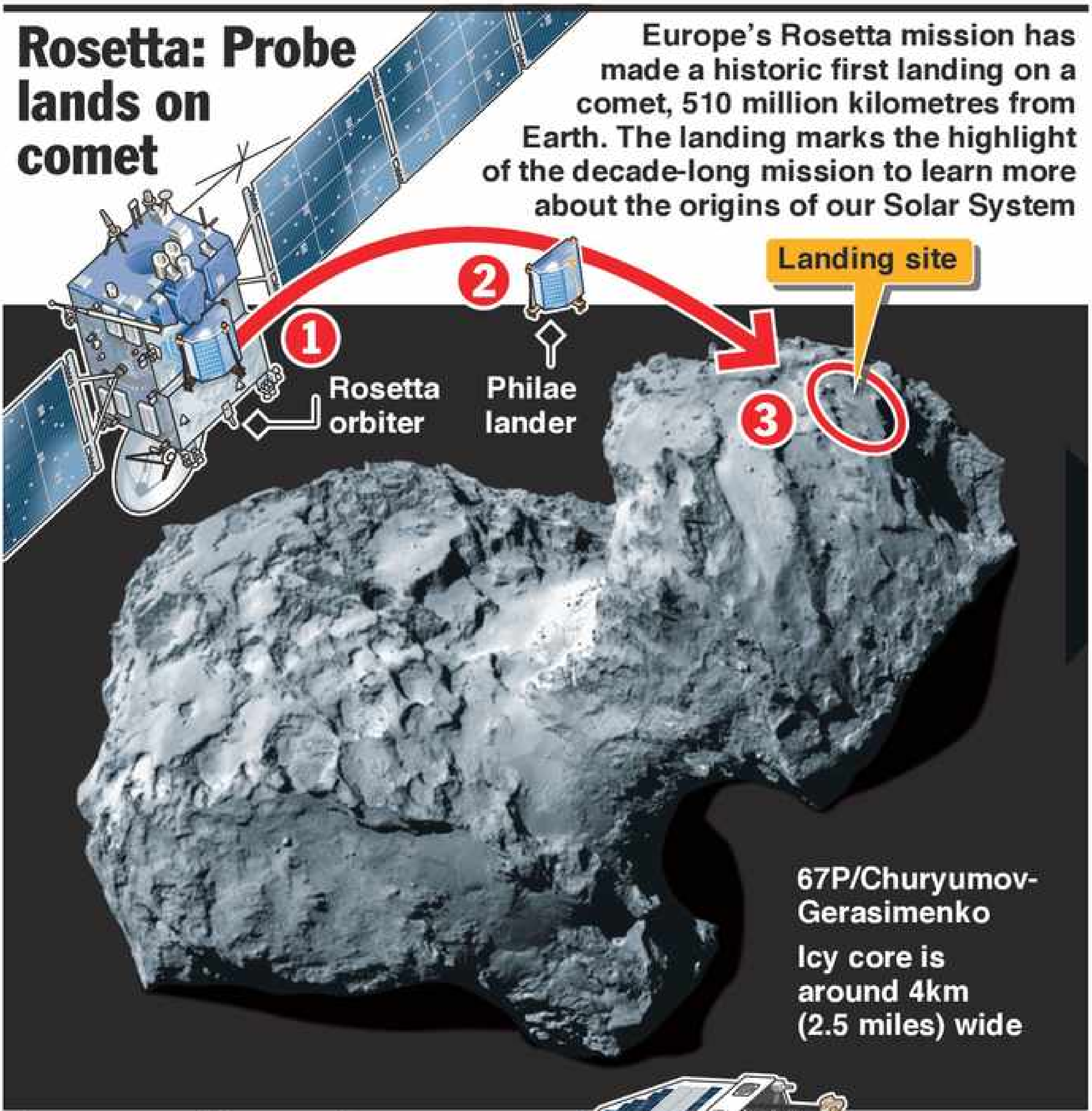



© BONI / BACKGRID

Rosetta: Probe lands on comet

Europe's Rosetta mission has made a historic first landing on a comet, 510 million kilometres from Earth. The landing marks the highlight of the decade-long mission to learn more about the origins of our Solar System

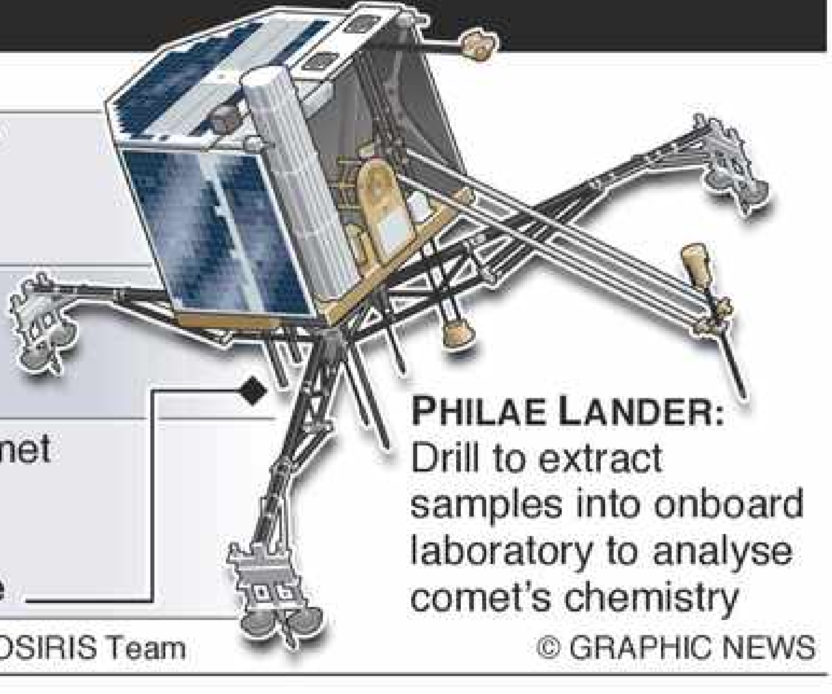


ANATOMY OF HISTORIC LANDING

1 08:35GMT: Fridge-sized lander launched from mother ship. 20km descent will take seven hours

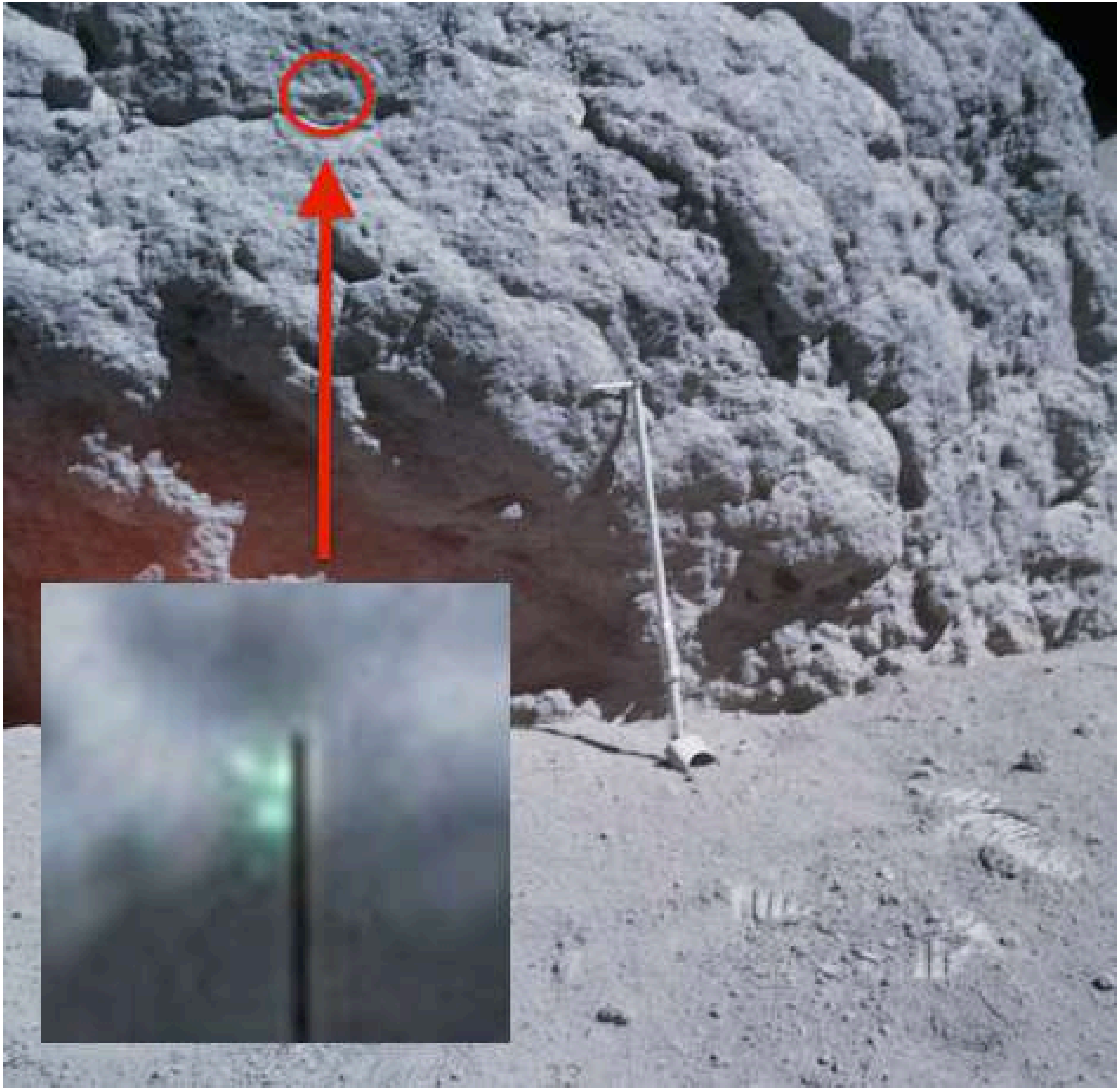
2 11:00GMT: Rosetta receives signal from Philae, which unfurls legs and starts taking pictures

3 16:05GMT: Philae lands on comet but harpoons that secure probe to surface fail to attach, meaning craft could bounce back into space



PHILAE LANDER: Drill to extract samples into onboard laboratory to analyse comet's chemistry

Source: ESA Picture: ESA/Rosetta/MPS for OSIRIS Team

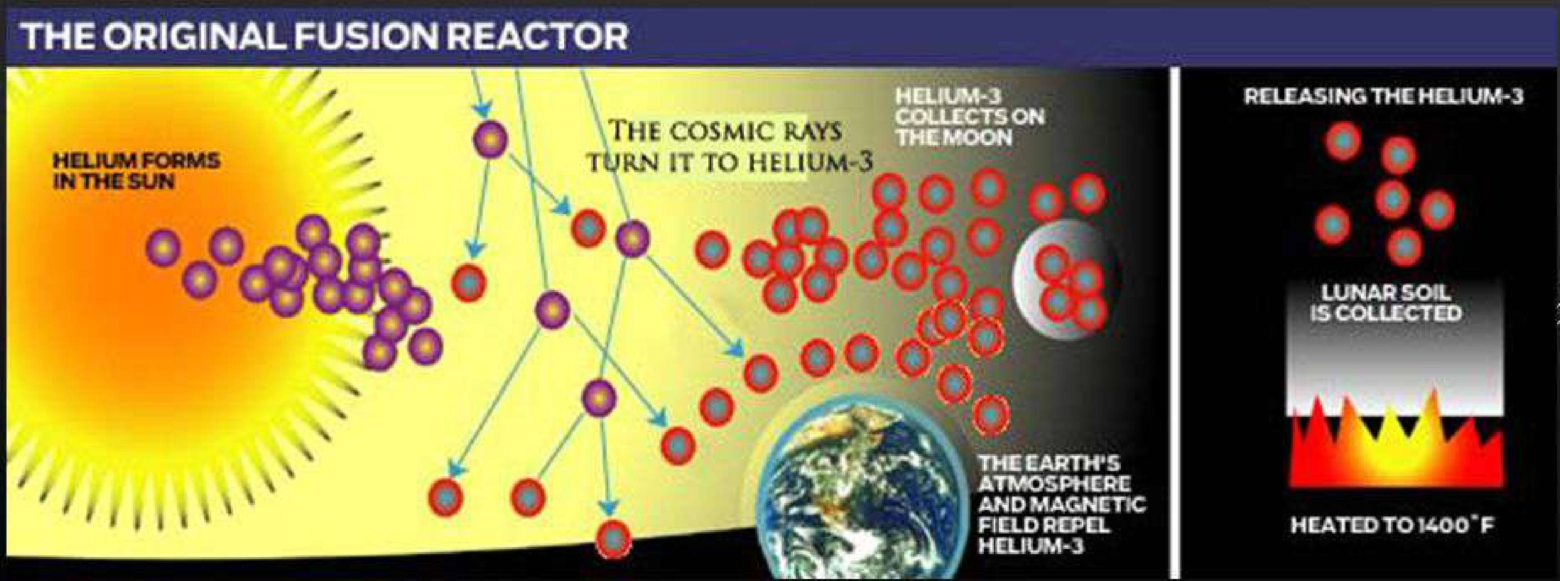


Moon Fuel or Moonshine for Reactors

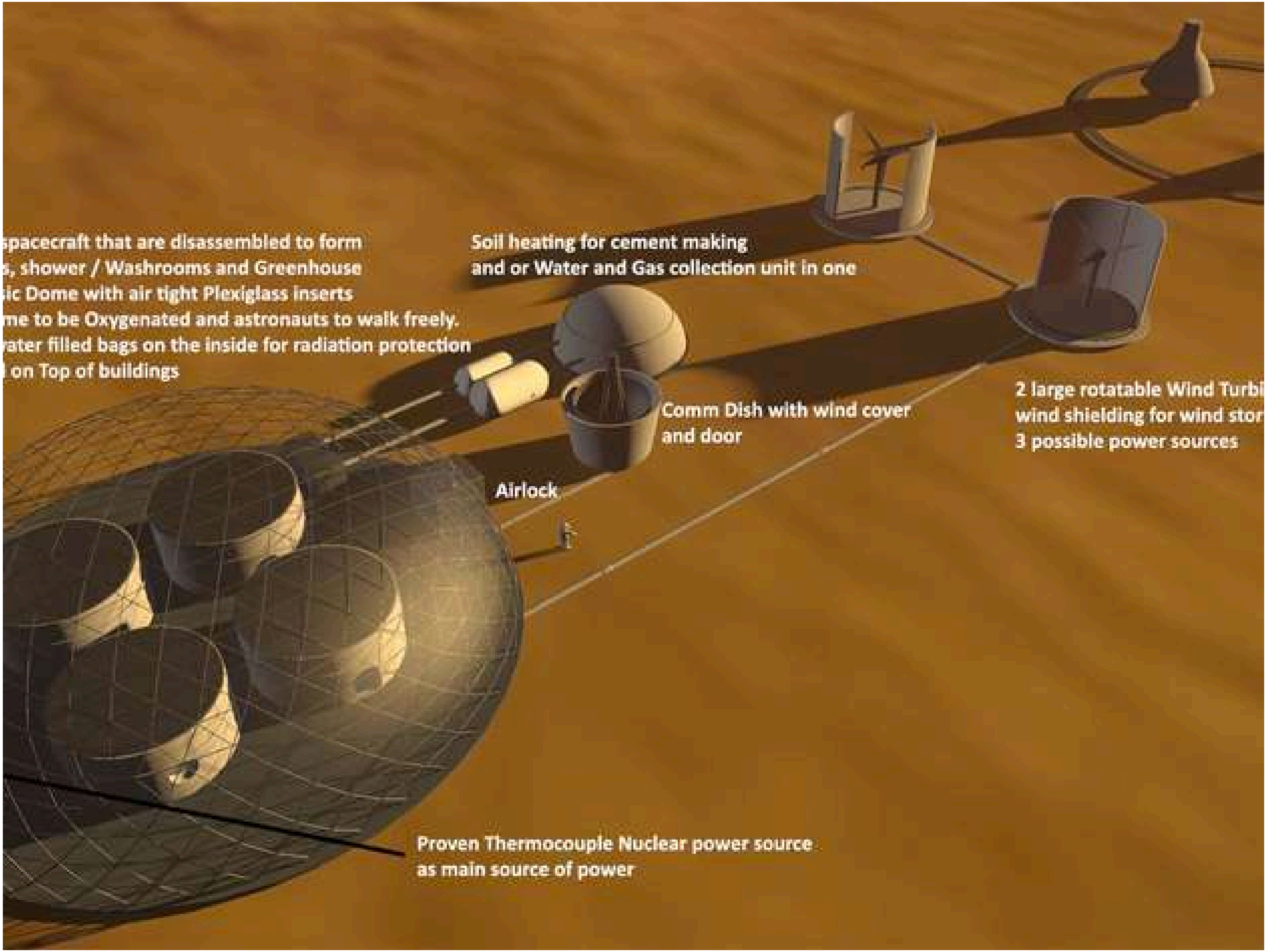
The moon is 'so rich' in helium 3, that this could 'solve humanity's energy demand for 10,000 years at least.

HELIUM-3

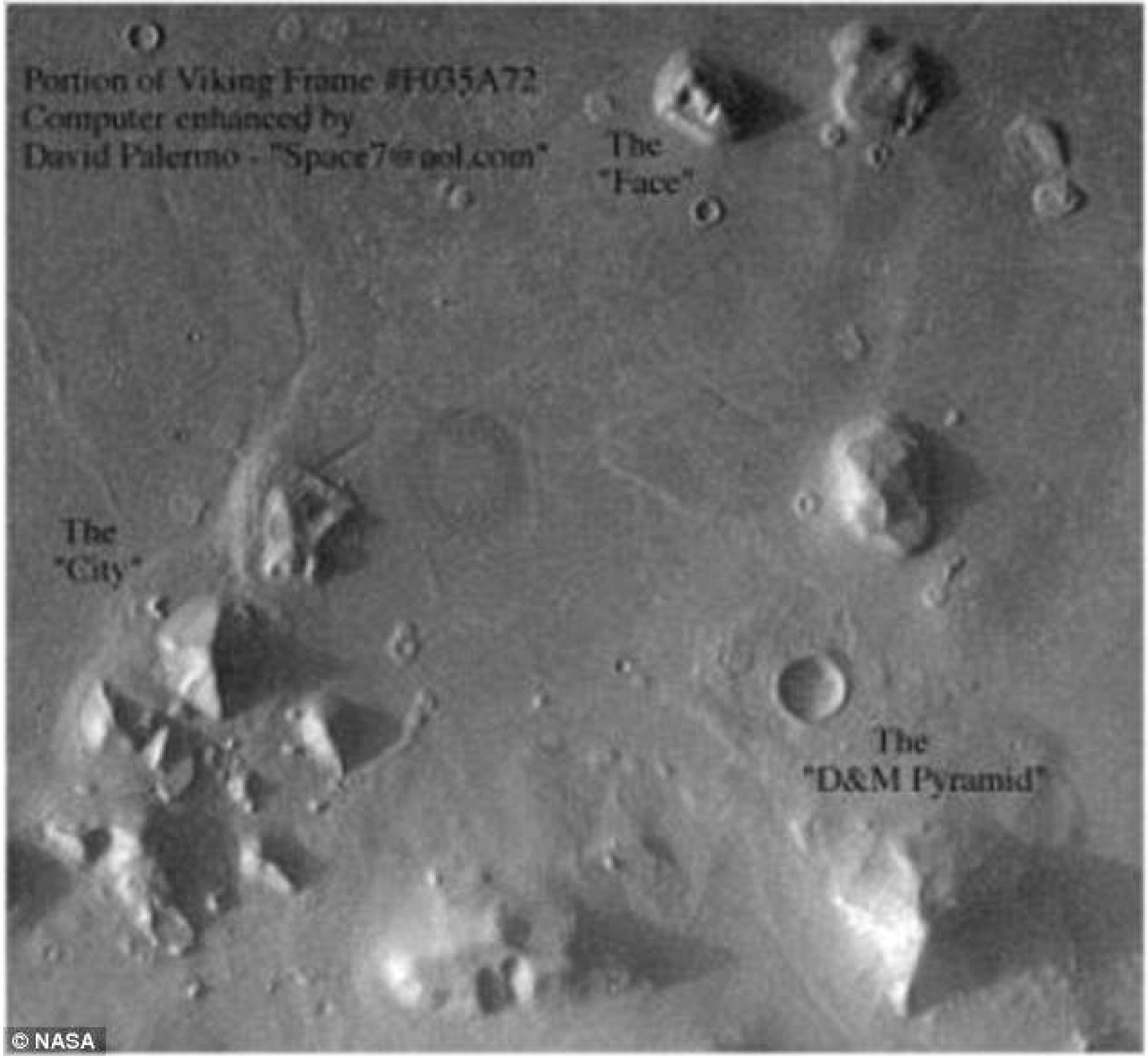
- An ideal candidate fuel for nuclear fusion.
- Formed in the Sun and carried through space on solar winds, helium-3 is extremely rare on Earth.
- Helium 3 is a light, non-radioactive isotope of helium with two protons and one neutron.

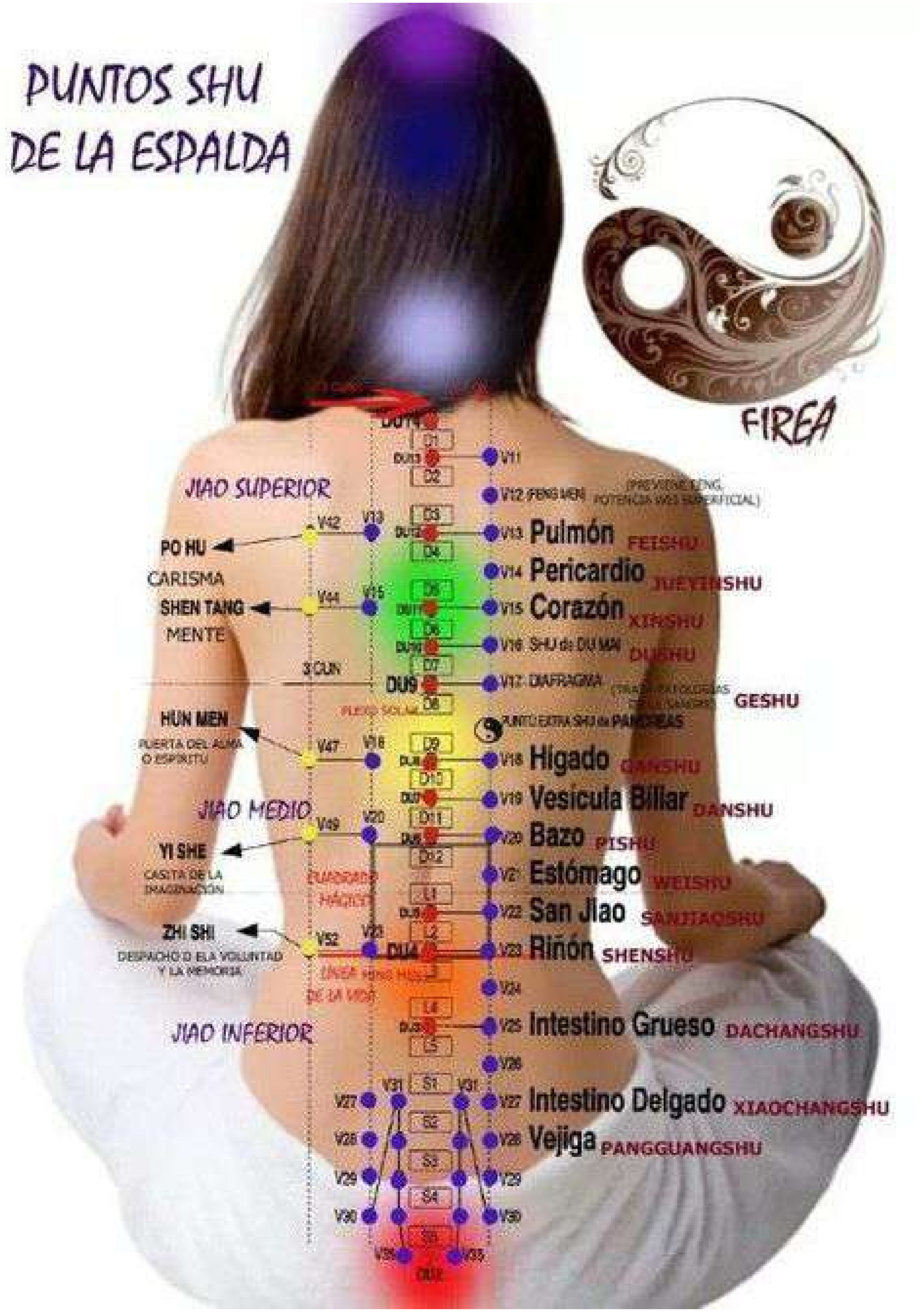



HOLD 1

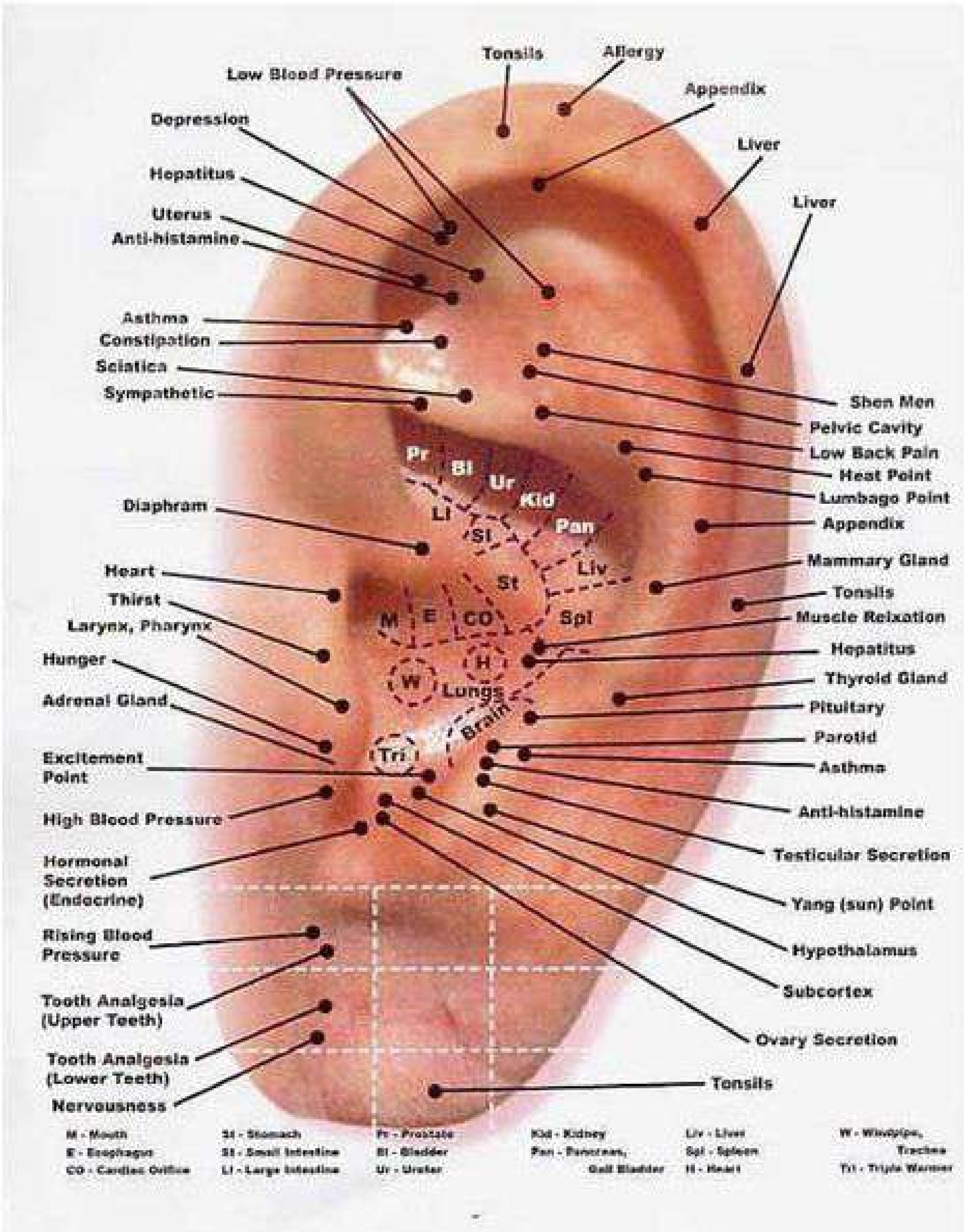

spacecraft that are disassembled to form
s, shower / Washrooms and Greenhouse
sic Dome with air tight Plexiglass inserts
me to be Oxygenated and astronauts to walk freely.
vater filled bags on the inside for radiation protection
on Top of buildings
Soil heating for cement making
and or Water and Gas collection unit in one
2 large rotatable Wind Turbi
wind shielding for wind stor
3 possible power sources
Comm Dish with wind cover
and door
Airlock
Proven Thermocouple Nuclear power source
as main source of power

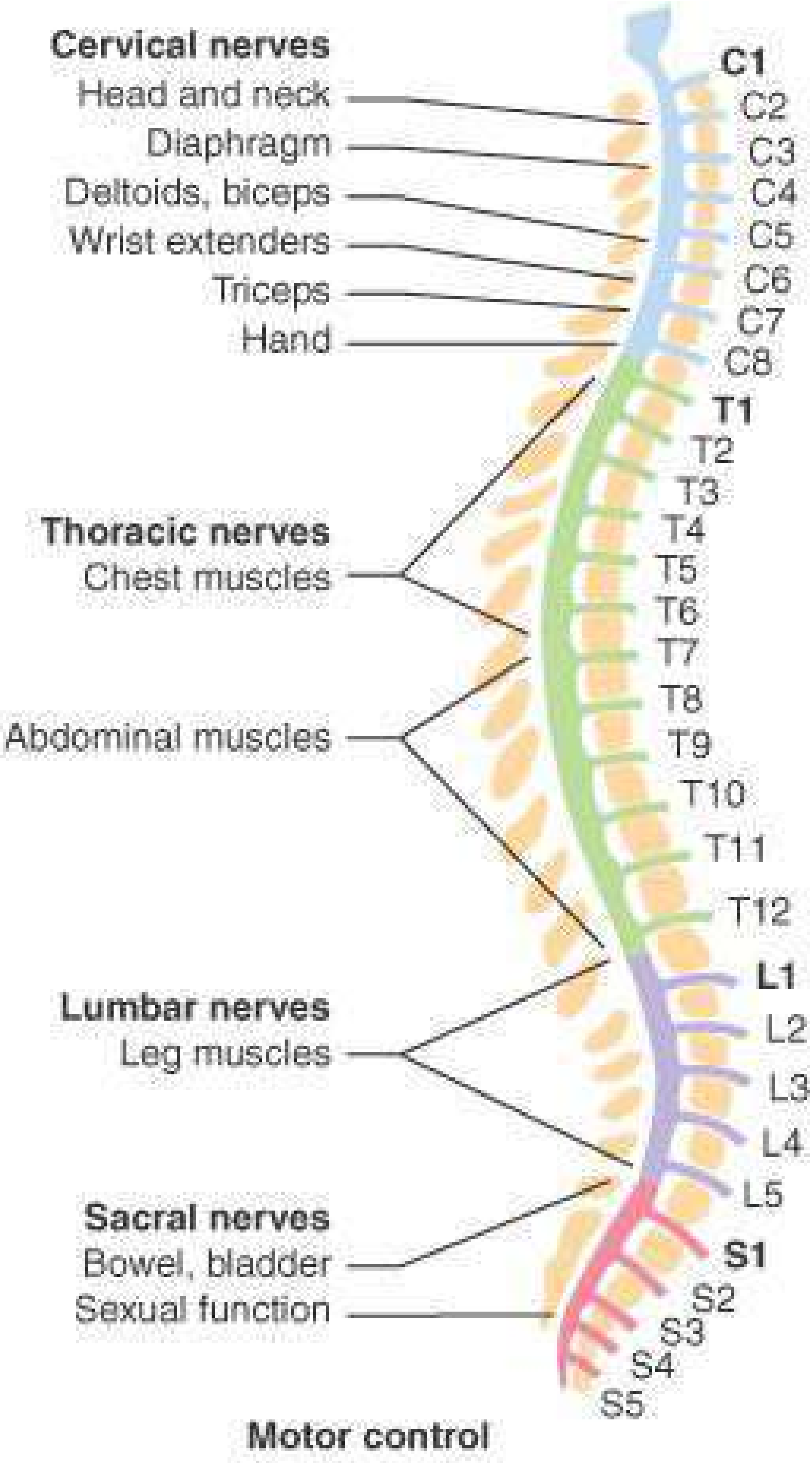
Paranormal
NASA Curiosity Rover photographs Pyramid on Mars
1976


Portion of Viking Frame #F035A72
Computer enhanced by
David Palermo - "Space7@aol.com"
The
"Face"
The
"City"
The
"D&M Pyramid"
© NASA


PUNTOS SHU
DE LA ESPALDA
FIREA
JIAO SUPERIOR
PO HU
CARISMA
SHEN TANG
MENTE
3 CUN
HUN MEN
JIAO MEDIO
YI SHE
ZHI SHI
Y LA MEMORIA
JIAO INFERIOR
DU9
DU4
V11
V12 (FENG MEN)
V13 Pulmón FEISHU
V14 Pericardio
V15 Corazón
V16 SHU de DU MAI
V17 DIAFRAGMA GESHU
V18 Higado
V19 Vesicula Biliar DANSHU
V20 Bazo
V21 Estómago WEISHU
V22 San Jiao
V23 Riñón SHENSHU
V25 Intestino Grueso DACHANGSHU
V27 Intestino Delgado XIAOCHANGSHU
V28 Vejiga PANGGUANGSHU

Physical Ear Chart





Cervical nerves
Head and neck
Diaphragm
Deltoids, biceps
Wrist extenders
Triceps
Hand
C1
C2
C3
C4
C5
C6
C7
C8
Thoracic nerves
Chest muscles
Abdominal muscles
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
Lumbar nerves
Leg muscles
L1
L2
L3
L4
L5
Sacral nerves
Bowel, bladder
Sexual function
S1
S2
S3
S4
S5
Motor control

dōTERRA
Wellness Advocate

Foot Reflexology Chart & Oil Use Guide

1 Brain, Pineal, & Pituitary
Frankincense
Immortelle®
Balance®
Patchouli, Copaiba
Sandalwoods
InTune®, Console®
Myrrh, Vetiver

2 Parathyroid
Frankincense
Rosemary
Immortelle®
Vetiver, Basil
Clove, Forgive®

3 Thyroid
Clove, Myrrh
Frankincense
Rosemary, Basil
Peppermint
Immortelle®
Lemongrass
DDR Prime®

4 Thymus
Cassia, Thyme
Melaleuca
On Guard®
Rosemary
Lemongrass
Clary Sage

Eyes
Clary Sage
Frankincense
Helichrysum
Immortelle®
Lavender

15 Lung
Breathe®
Eucalyptus
Melissa, Siberian Fir
Cypress, Rosemary
Oregano, Thyme
Lime, Cardamom
Arborvitae

Sinus
Breathe®
Melissa, Lime
Eucalyptus
Peppermint
Lavender, Lemon
Rosemary
Douglas Fir

Ears
Helichrysum
Melaleuca
Frankincense
Lavender, Basil
Emotional Oils

Shoulder
AromaTouch®
Wintergreen
Birch
Lemongrass
Deep Blue®
PastTense®
Siberian Fir

Liver
Cilantro, Geranium
Frankincense
Zendocrine®
Rosemary, Fennel
Citrus Oils
DDR Prime®
Slim & Sassy®

Heart
Cardamom, Rose
Cypress, Blk Pepper
Lemongrass, Anchor®
Marjoram, Elevation®
Ylang Ylang, Jasmine
Cinnamon/Cassia
Geranium, Passion®

Gallbladder
Geranium, Lavender
Rosemary
Juniper Berry
Cardamom
Zendocrine®
Citrus Oils

5 Pancreas
Rosemary
Basil, Coriander
On Guard®
Fennel
Motivate®
Slim & Sassy®

Spleen
Citrus Oils
Marjoram
Melaleuca
Fennel
Cardamom

14 Adrenal
Rosemary, Basil
Ylang Ylang
Geranium, Clove
Zendocrine®
Citrus Oils

13 Bladder
Cassia/Cinnamon
On Guard®
Cypress, Bergamot
Lemongrass
Juniper Berry

6 Stomach
7 Small Intestine
DigestZen®
Fennel, Ginger
Peppermint
Cardamom
Zendocrine®
Slim & Sassy®
Coriander, Basil

Ascending Colon
8 Descending Colon
12 Transverse Colon
DigestZen®
Fennel, Ginger
Blk Pepper
Cardamom
Peppermint
Slim & Sassy®
Spearmint
Citrus Oils

Rectum
Cypress
Balance®
Helichrysum
Melaleuca
Lavender

9 Sciatic Nerve
AromaTouch®
Deep Blue®
Birch/Wintergreen
PastTense®
Peppermint
Helichrysum
Copaiba

10 Kidney
Rosemary
Lemongrass
Cassia, Cilantro
Geranium
Juniper Berry
Zendocrine®
Citrus Oils

Right Foot   Left Foot

Muscles
AromaTouch®
Deep Blue®
Douglas Fir
Siberian Fir
Spearmint
Frankincense
PastTense®
Wintergreen
Marjoram
Blue Tansy

Outer Ankle— **Ovaries or Testes**

Ovaries
Myrrh, Basil
ClaryCalm®
Whisper®
Rosemary
Jasmine
Ylang Ylang
Geranium

Testes
Rosemary
Clary Sage
Geranium
Lavender
Sandalwoods

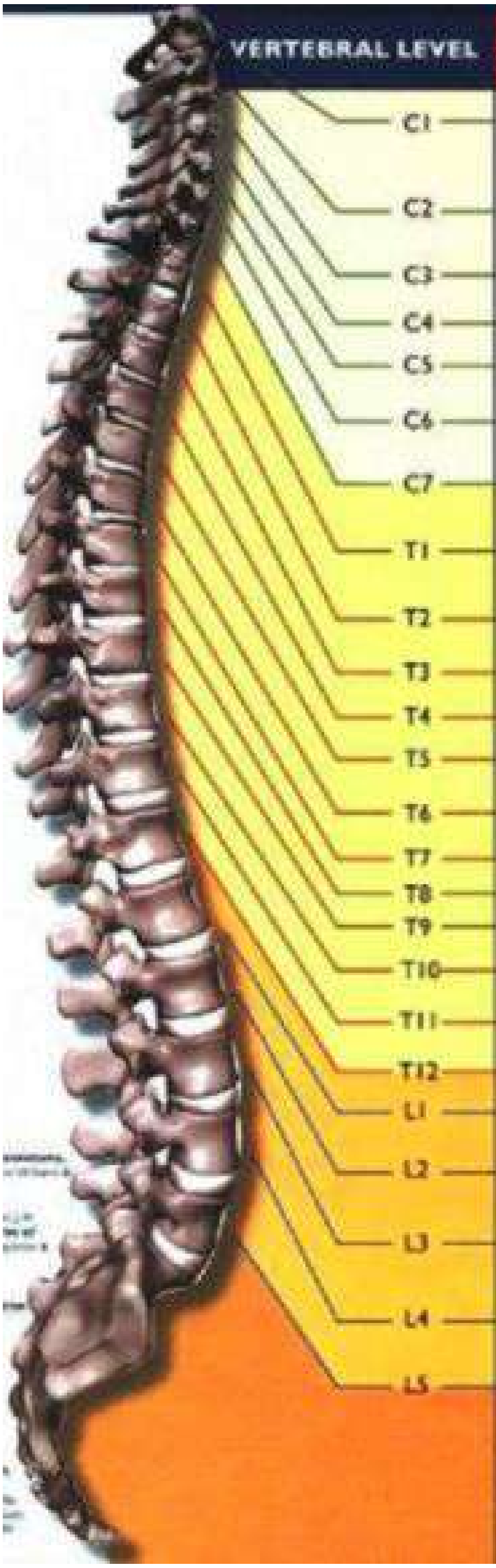
Nerves
Helichrysum
Lemongrass
Clove, Geranium
Peppermint
Roman Chamomile
Serenity®, Copaiba
DDR Prime®
Petitgrain, Vetiver
Frankincense

11 Spine
Melaleuca
AromaTouch®
Copaiba
Wintergreen
Siberian Fir
Douglas Fir
Melissa, Balance®
DDR Prime®

Inner Ankle— **Uterus or Prostate**

Uterus
Frankincense
Lemon, Forgive®
Jasmine, Neroli
Clary Sage
Geranium
ClaryCalm®
Whisper®

Prostate
Helichrysum
Frankincense
Immortelle®
Copaiba, Basil
Juniper Berry
Cypress, Myrrh
DDR Prime®



NERVE ROOT*	INNERVATION	POSSIBLE SYMPTOMS
C1 C2 C3 C4	Intracranial Blood Vessels • Eyes • Lacrimal Gland • Parotid Gland • Scalp • Base of Skull • Neck Muscles • Diaphragm	Headaches • Migraine Headaches • Dizziness • Sinus Problems • Allergies • Head Colds • Fatigue • Vision Problems • Runny Nose • Sore Throat • Stiff Neck • Cough • Croup • Arm Pain • Hand and Finger Numbness or Tingling • Asthma • Heart Conditions • High Blood Pressure
C5 C6 C7 C8	• Neck Muscles • Shoulders • Elbows • Arms • Wrists • Hands • Fingers • Esophagus • Heart • Lungs • Chest	
T1 T2 T3 T4	Arms • Esophagus • Heart • Lungs • Chest • Larynx • Trachea	Wrist, Hand and Finger Numbness or Pain • Middle Back Pain • Congestion • Difficulty Breathing • Asthma • High Blood Pressure • Heart Conditions • Bronchitis • Pneumonia • Gallbladder Conditions • Jaundice • Liver Conditions • Stomach Problems • Ulcers • Gastritis • Kidney Problems
T5 T6 T7 T8 T9 T10	Gallbladder • Liver • Diaphragm • Stomach • Pancreas • Spleen • Kidneys • Small Intestine • Appendix • Adrenals	
T11	Small Intestines • Colon • Uterus	
T12	Uterus • Colon • Buttocks	
L1 L2 L3 L4 L5	Large Intestines • Buttocks • Groin • Reproductive Organs • Colon • Thighs • Knees • Legs • Feet	Constipation • Colitis • Diarrhea • Gas Pain • Irritable Bowel • Bladder Problems • Menstrual Problems • Low Back Pain • Pain or Numbness in Legs
SACRAL	Buttocks • Reproductive Organs • Bladder • Prostate Gland • Legs • Ankles • Feet • Toes	Constipation • Diarrhea • Bladder Problems • Menstrual Problems • Lower Back Pain • Pain or Numbness in Legs

Mushrooms with white or cream spores
Pleurotus They grow on wood or debris. The stem is either lateral or almost absent
Russula Very common in woods, often bright colours. The gills and flesh are brittle, the gills white or creamy
Mycena Very small species with thin stems and mainly conical caps. Some exude a liquid on breaking the stem
Lactarius Exude droplets of milky-white or coloured liquid when damaged
Oudemansiella This one has a deep root
Collybia The gills are very numerous (crowded). The stem is fibrous
Melanoleuca The caps are normally flat with a central umbo. The stem is fibrous
Hygrocybe Waxy to the touch, often brightly coloured, growing in grass
Cantharellus The Chanterelles have gill-like wrinkles rather than gills
Armillaria Grows on or near trees, very often in large clumps
Amanita They all have a bag (volva) or a bulb with a rim at the stem base. Most have a ring on the stem
Laccaria The main species are very common. The stem is fibrous
Clitocybe The gills run down the stem (decurrent) in most of the species
Lepiota & Macrolepiota Usually have rings on the stem and scales on the cap. Some are very large, some small
Tricholoma Brown, grey, white or yellow. Generally thick-fleshed with a stout appearance
Marasmius Mostly small and white with tough flesh. This one is the Fairy Ring Champignon

TOXIC
INEDIBLE
EDIBLE
TASTY
CINNABAR WEBCAP
BULBOUS FIBRECAP
BAY POLYPORE
GERANIUM BRITTLEGILL
FRUITY BRITTLEGILL
BEECH MILKCAP
UGLY MILKCAP
COMMON MILKCAP
COMMON EARTHBALL
FAWN PLUTEUS
FALSE CHANTER-ELLE
BIRCH POLYPORE
HOOF BRACKET
SLIMY SPIKE
OCHRE B'GILL
YELLOW SWAMP B'GILL
BLACKENING B'GILL
FALSE SAFFRON M'CAP
AM.
DECEIVER
BLUSHER
FLY AGARIC
BROWN BIRCH BOLETE
BOVINE BOLETE
CHARCOAL BURNER
BEEF-STEAK
CHANTERELLE
THE MILLER
HEDGEHOG
CHICKEN OF THE WOODS
TAWNY GRISETTE
CEP
SCARLETINA BOLETE
SLIPPEY JACK
LARCH BOLETE
BAY BOLETE
© Galloway Wild Foods.com

Seward
COMMUNITY CO-OP

Enoki

Delicate in flavor and appearance, this crisp textured mushroom is usually added to soups, pasta dishes, or vegetable side dishes towards the end of cooking time. They are also quite tasty raw in salads or on sandwiches. The flavor is sometimes described as slightly fruity.

Chanterelle

Orange or yellow, meaty and funnel-shaped, the chanterelle has a fruity smell, reminiscent of apricots and a mildly peppery taste. Most flavor compounds are fat soluble, so preparations using cream, butter, or oil make the best use of these mushrooms. They are not typically eaten raw.

Button

The classic white mushroom is very versatile. Though their flavor is subtle when raw, it deepens nicely as they are cooked, especially sautéed. They can be used to good effect in preparations where a mushroom flavor is desired, but is not the focus of the dish.

Brown Beech

This clustered mushroom has nutty, buttery flavor, and a firm, crunchy texture. Can be eaten raw, but most western palettes best enjoy beech mushrooms baked, steamed, or sautéed in olive oil.

Shitake

The most commonly available asian mushroom, it has a robust flavor that adds depth to stir-fry, soups, and any other dish needing an umami flavor note. The stem tends to be unpleasantly fibrous, so the cap is usually separated before cooking.

Cremini

These look just like a button mushroom, except for their brown skin. They have a somewhat deeper flavor that white buttons. They can be used in any preparation that calls for button mushrooms and make especially handsome stuffed mushrooms.

Maitake

Firm textured with a robust, earthy flavor, Maitake is sometimes referred to as "Hen of the Woods." They make a good meat substitute and can be used in any recipe that calls for mushrooms. Health benefits are legion-these mushrooms help booster the immune system, fight cancer and are especially rich in potassium, vitamin B2, D , and niacin.

Oyster

These delicate, softly colored mushrooms are prized for their aromatic qualities and sweet, meaty flesh. They should be cooked, and can be used in their entirety, though the stems should be cooked slightly longer. The caps cook quickly and can be used in stir-fries, soups, sauces, risottos, or pan-fried and enjoyed on their own.

Portabella

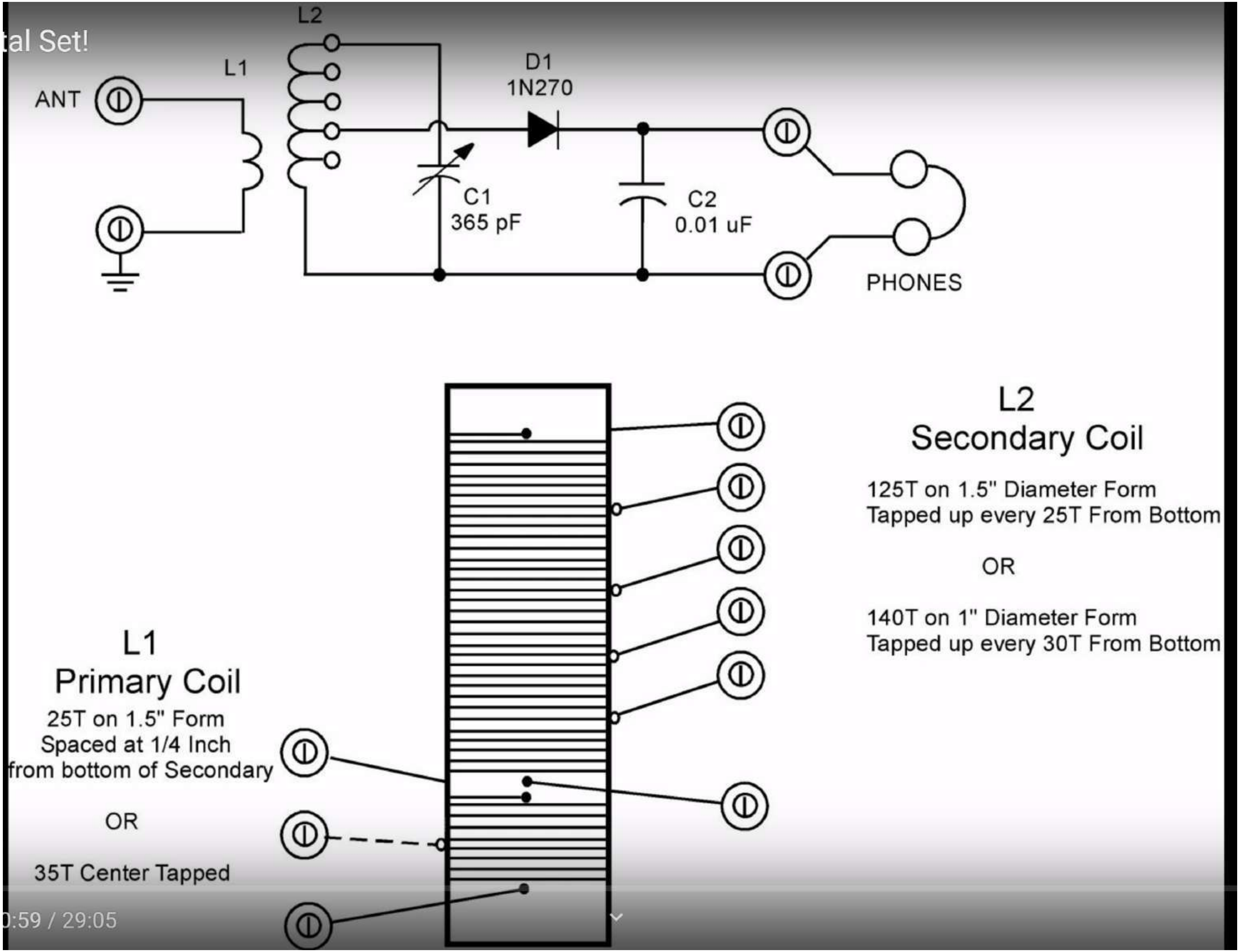
These are really just cremini mushrooms let to grow larger. Their size and shape makes them excellent candidates for the grill, but they are also good sliced and sauteed.

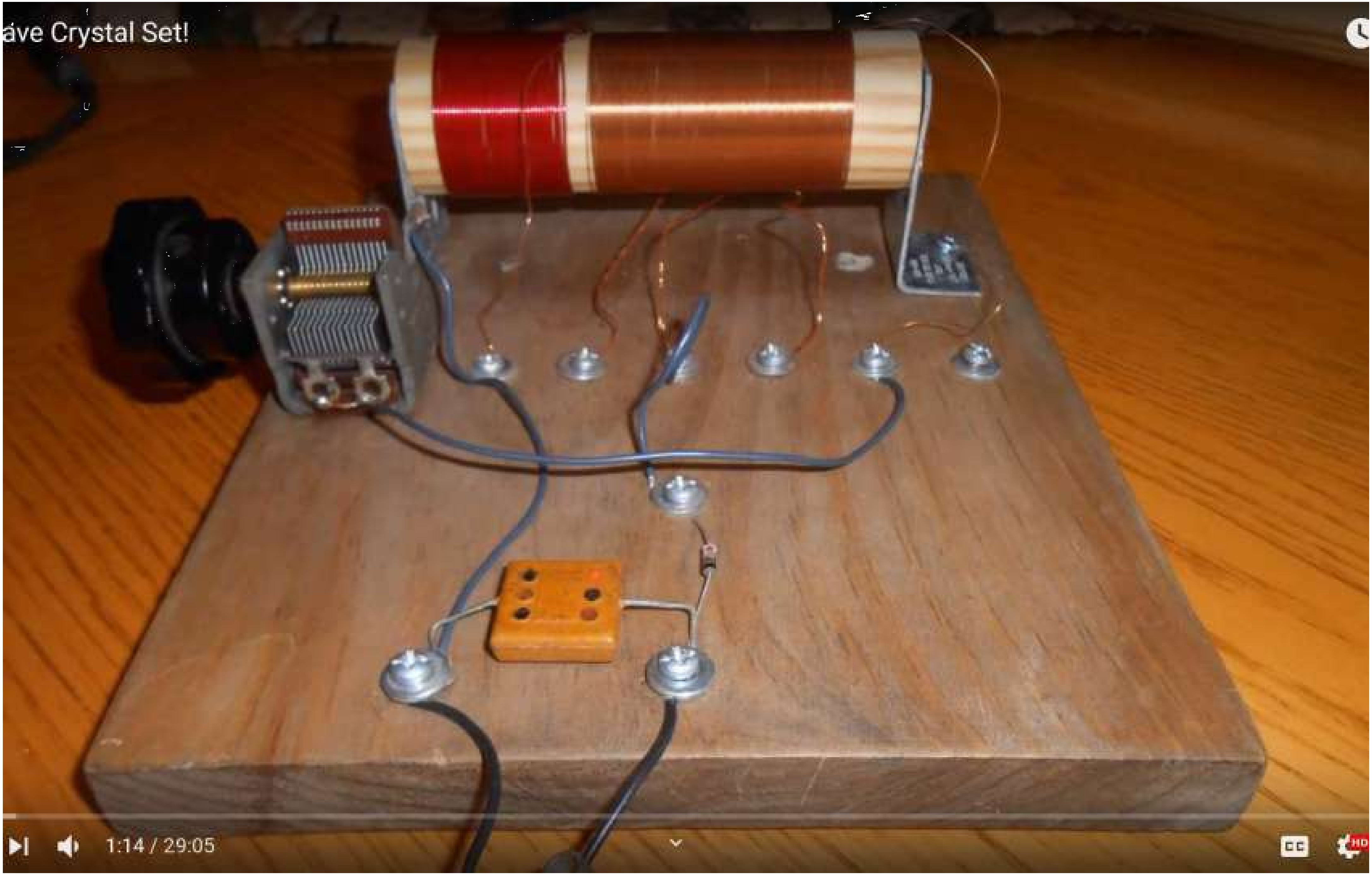
Shortwave Crystal Set!


0:37 / 29:05
CC
HD

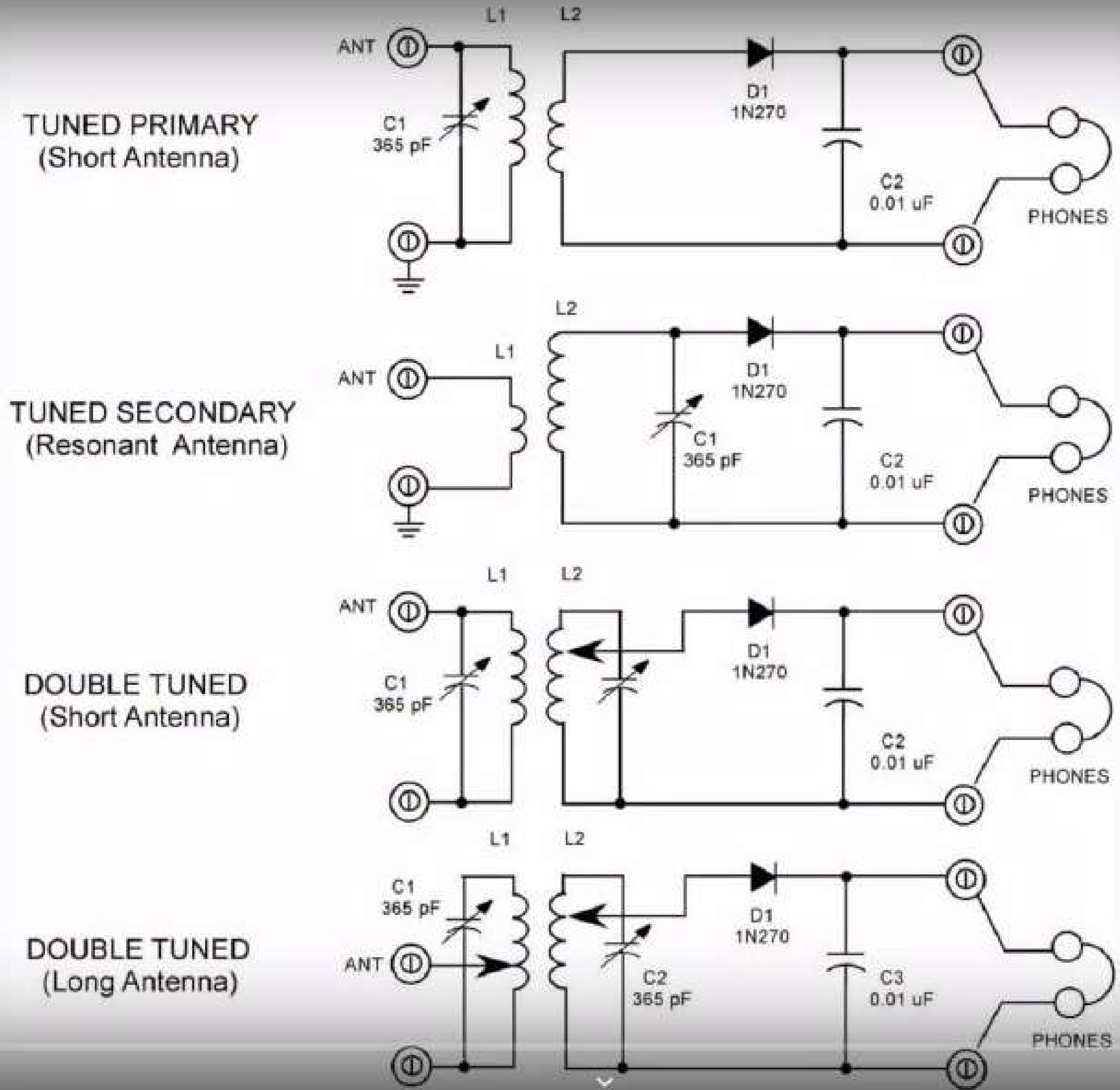
LOOSE COUPLER
LOOSE COUPLER
0:38 / 29:05


FARADAY SHIELD
0:40 / 29:05
HD

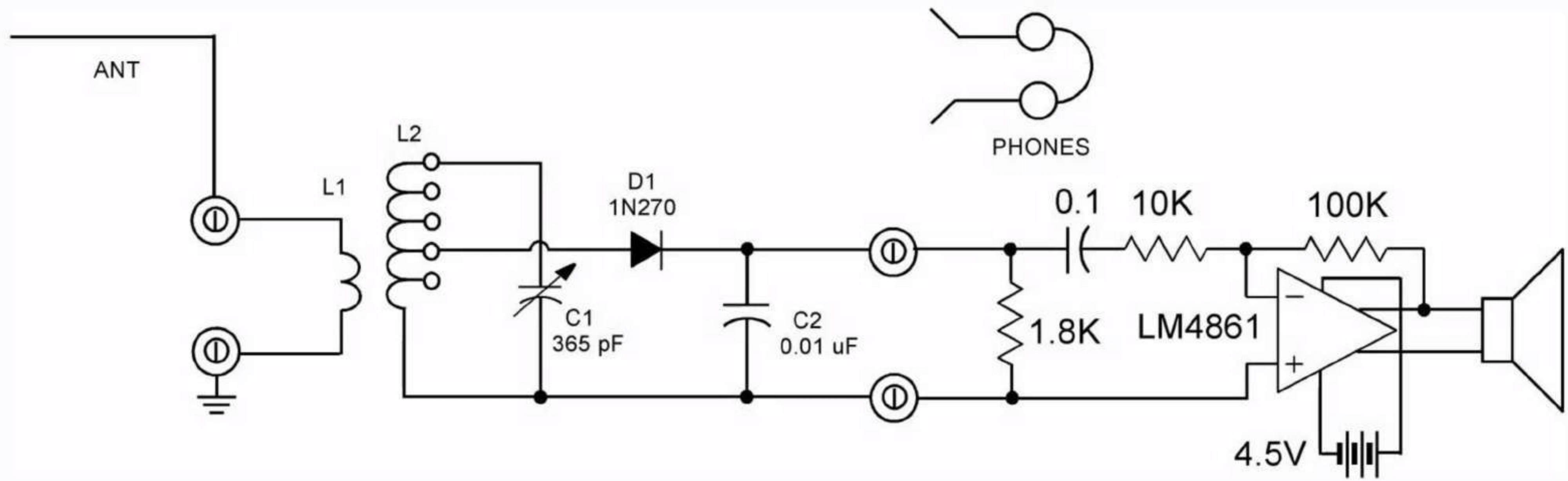

tal Set!
L2
L1
ANT
D1
1N270
C1
365 pF
C2
0.01 uF
PHONES
L2
Secondary Coil
125T on 1.5" Diameter Form
Tapped up every 25T From Bottom
OR
140T on 1" Diameter Form
Tapped up every 30T From Bottom
L1
Primary Coil
25T on 1.5" Form
Spaced at 1/4 Inch
from bottom of Secondary
OR
35T Center Tapped
:59 / 29:05


ave Crystal Set!
1:14 / 29:05

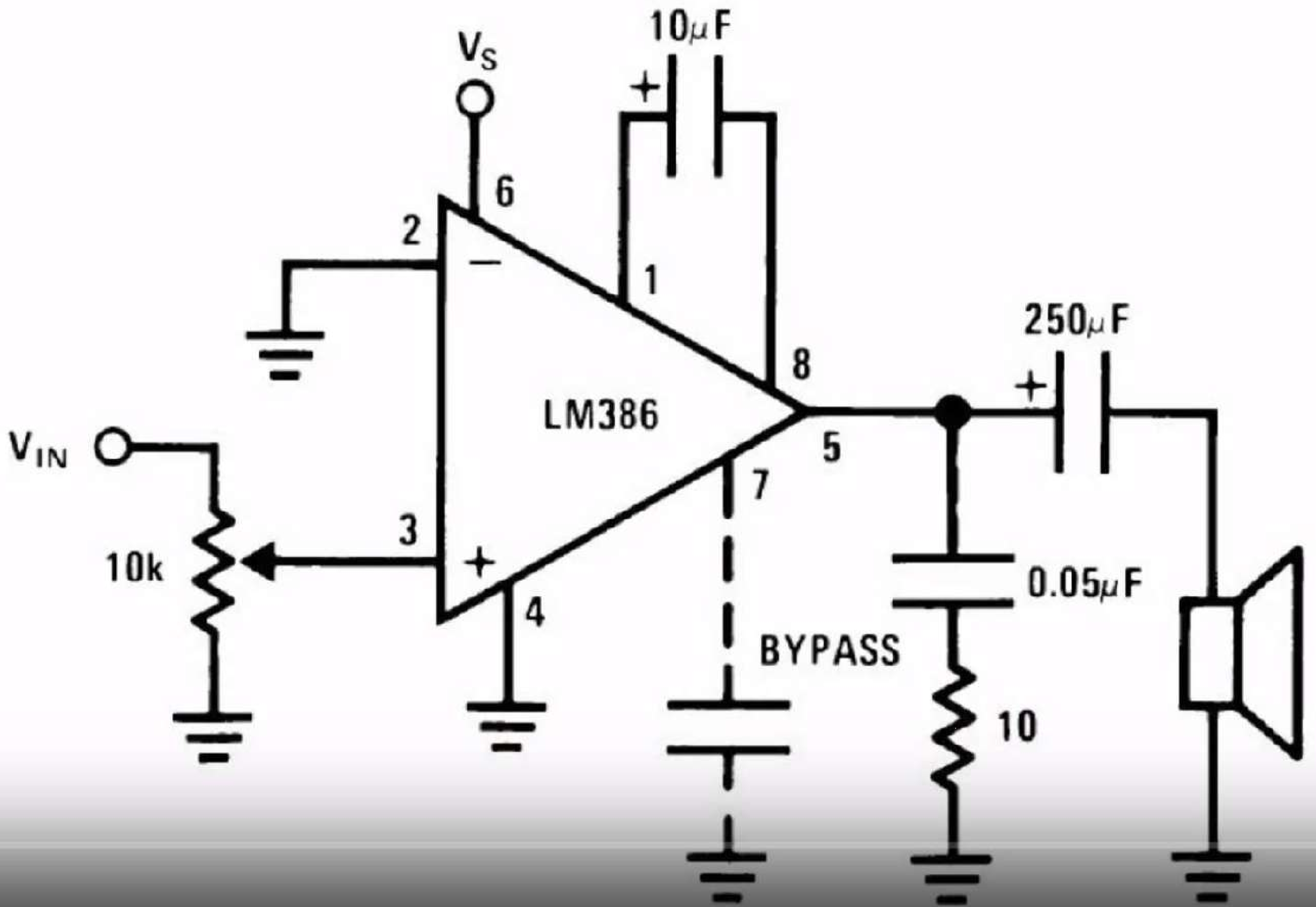
rystal Set!

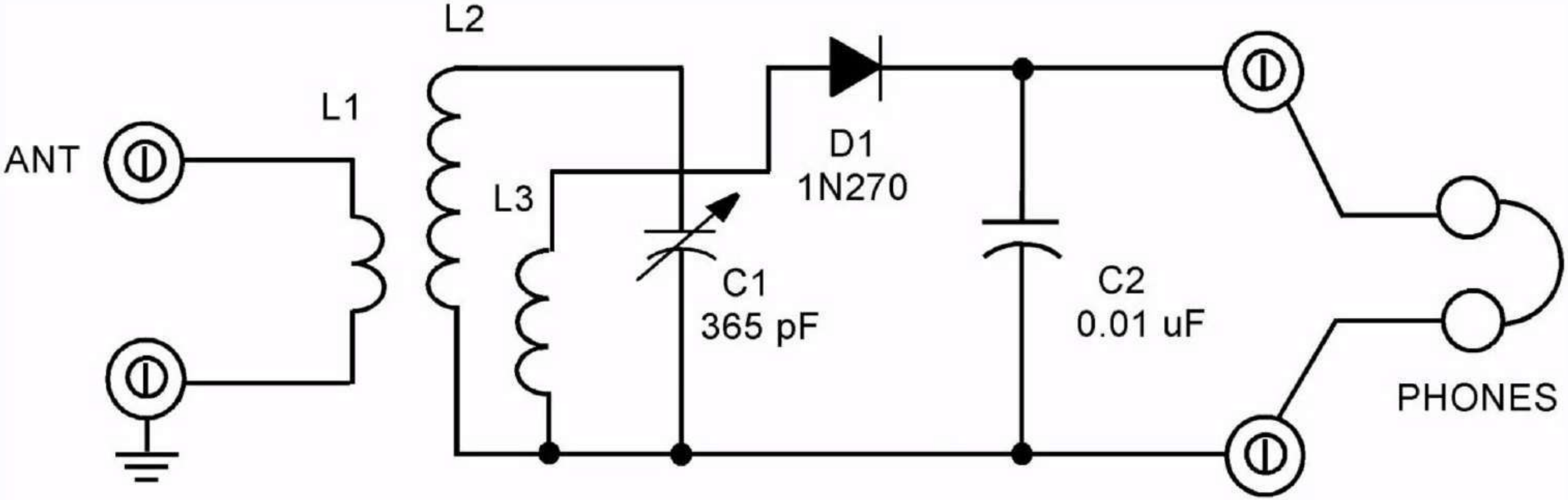


1:24 / 29:05

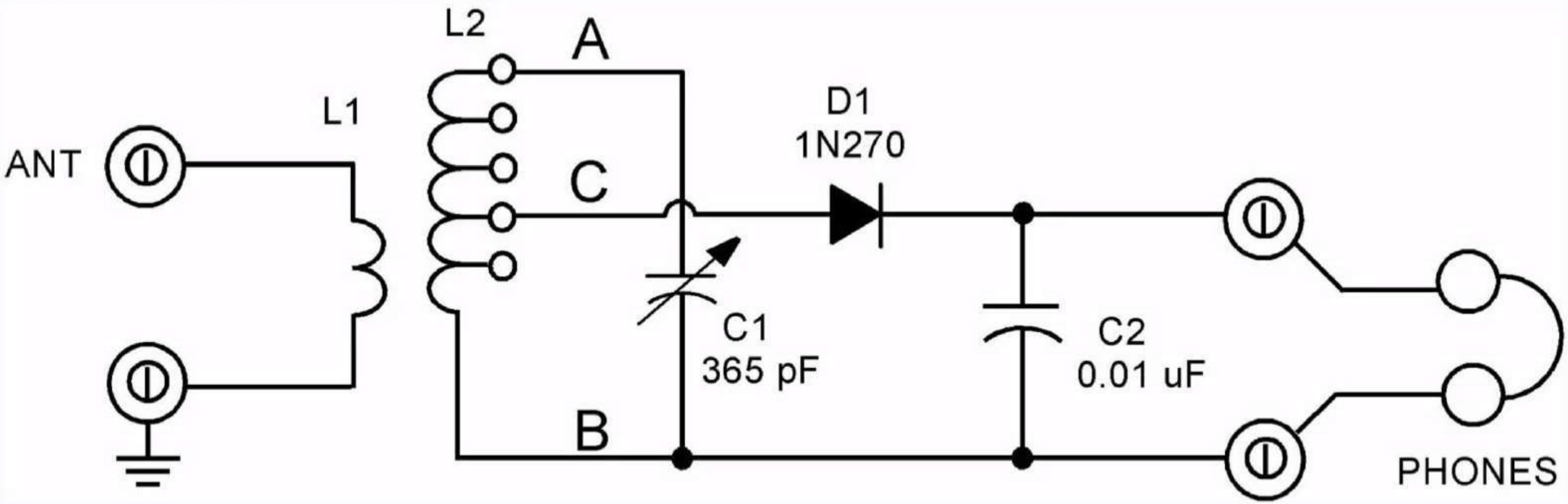

ANT
L1
L2
D1
1N270
C1
365 pF
C2
0.01 uF
PHONES
0.1
10K
100K
1.8K
LM4861
4.5V

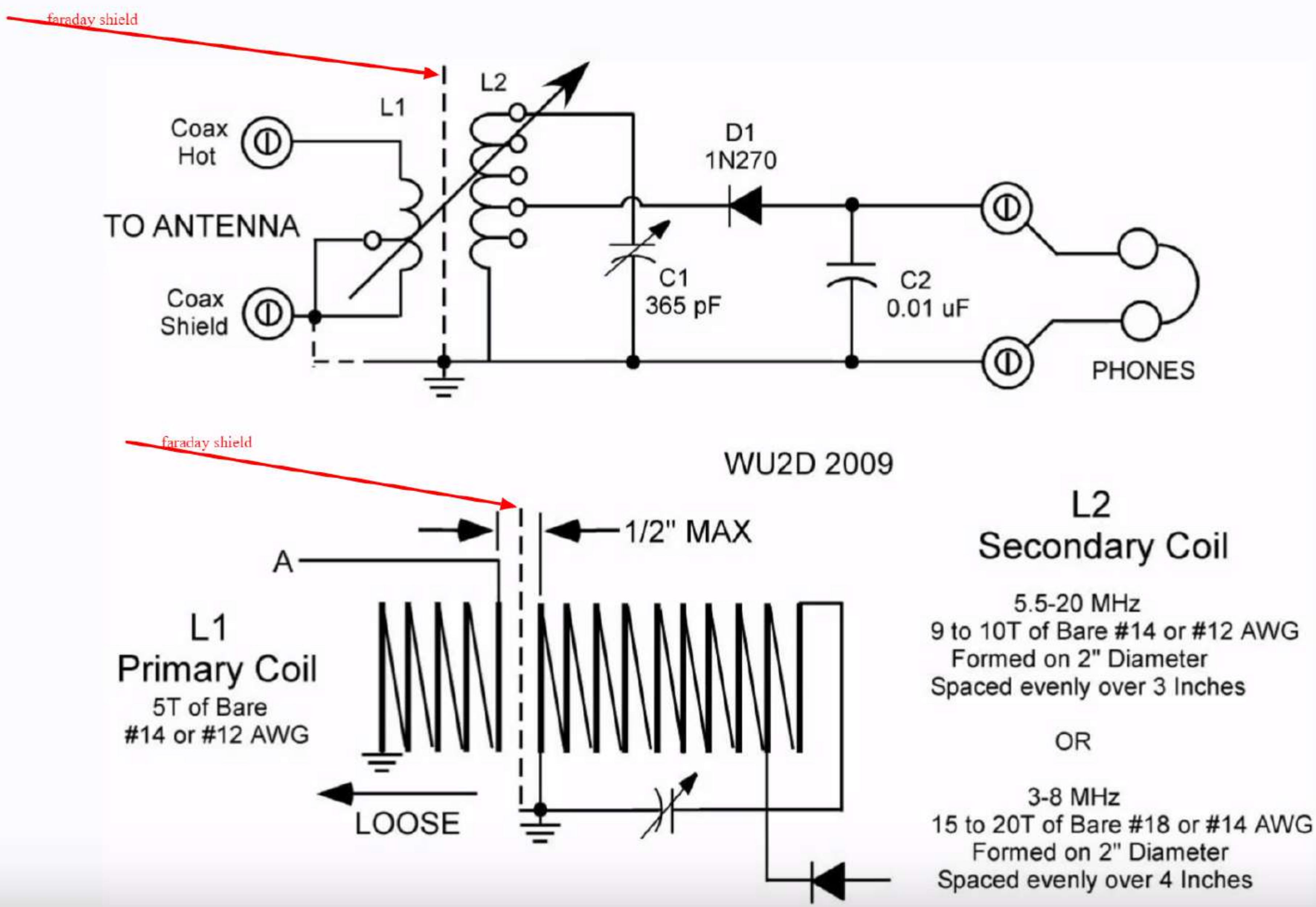
Amplifier with Gain = 200

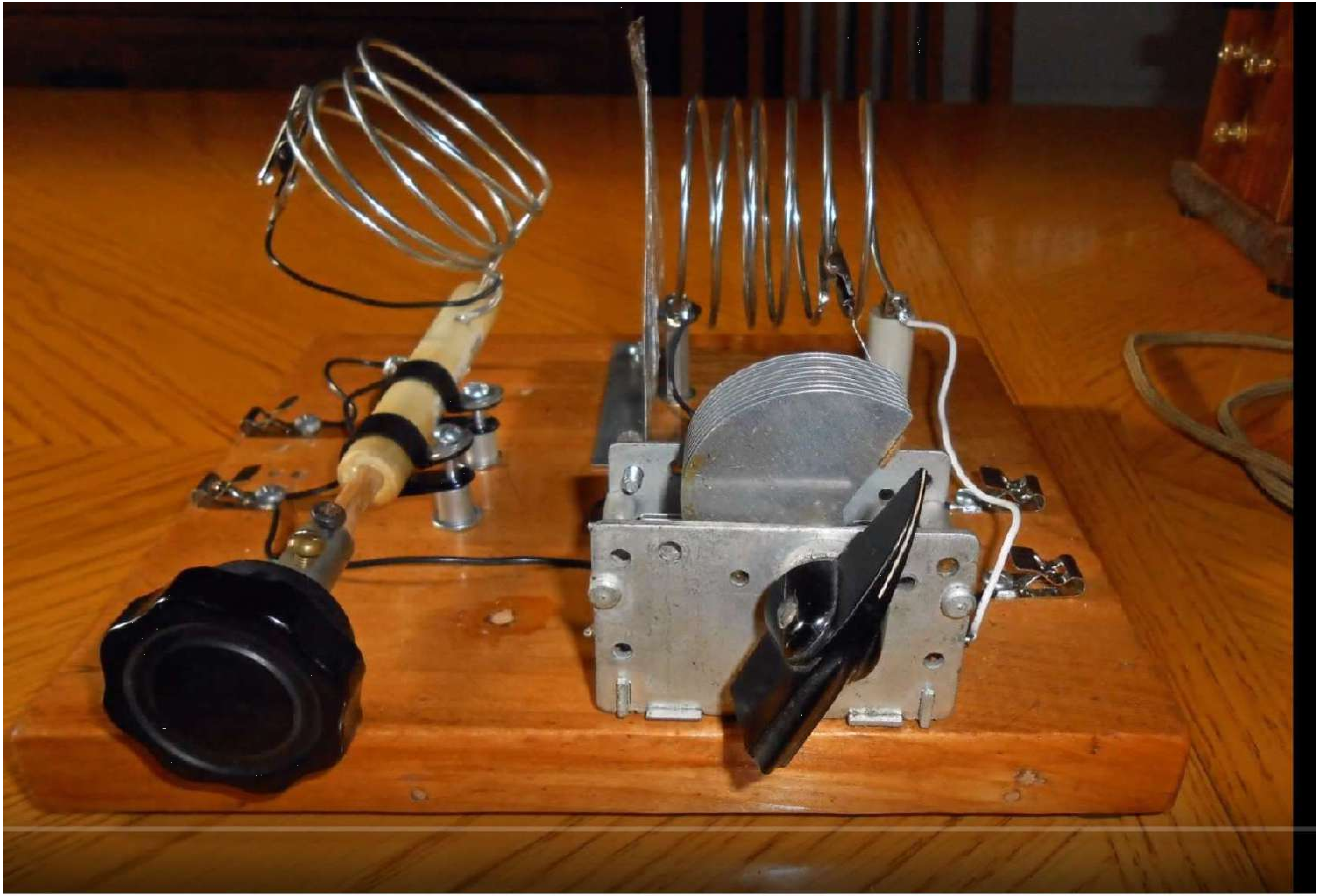


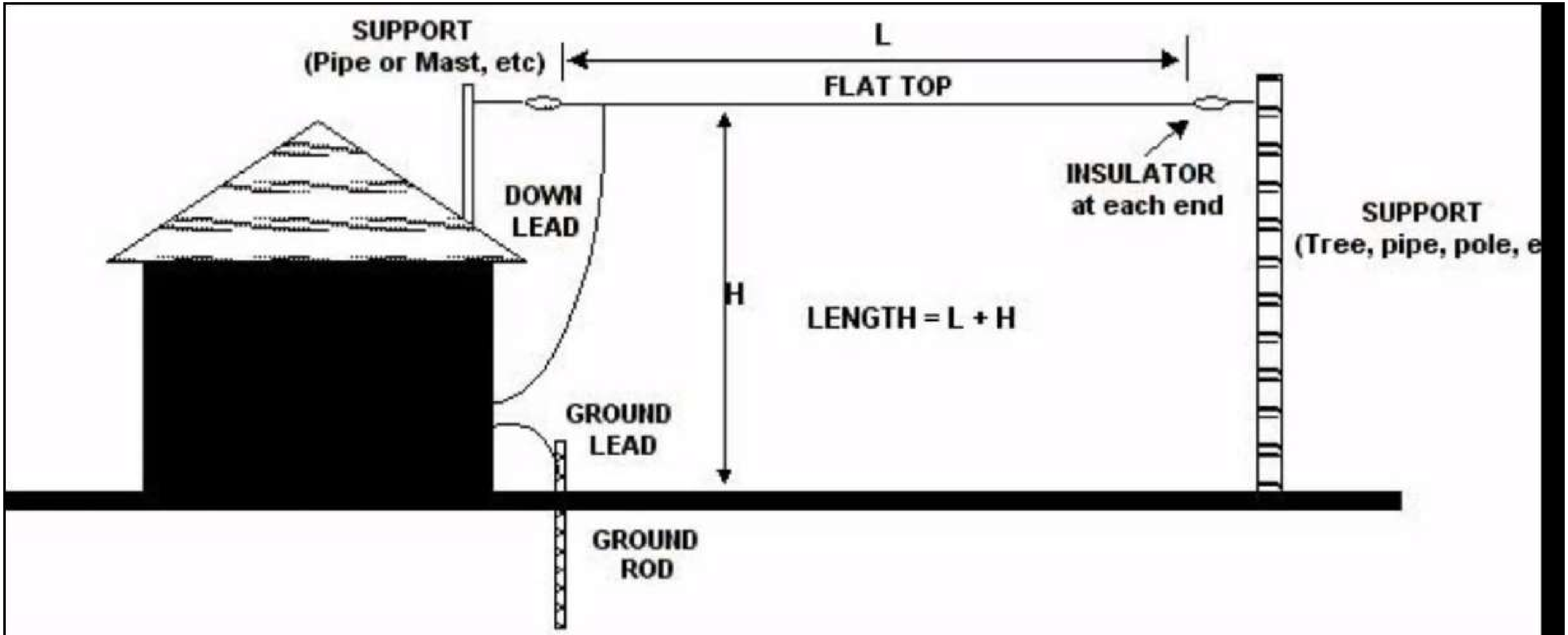


INDUCTIVELY MATCHING DIODE
WITH SEPARATE WINDING

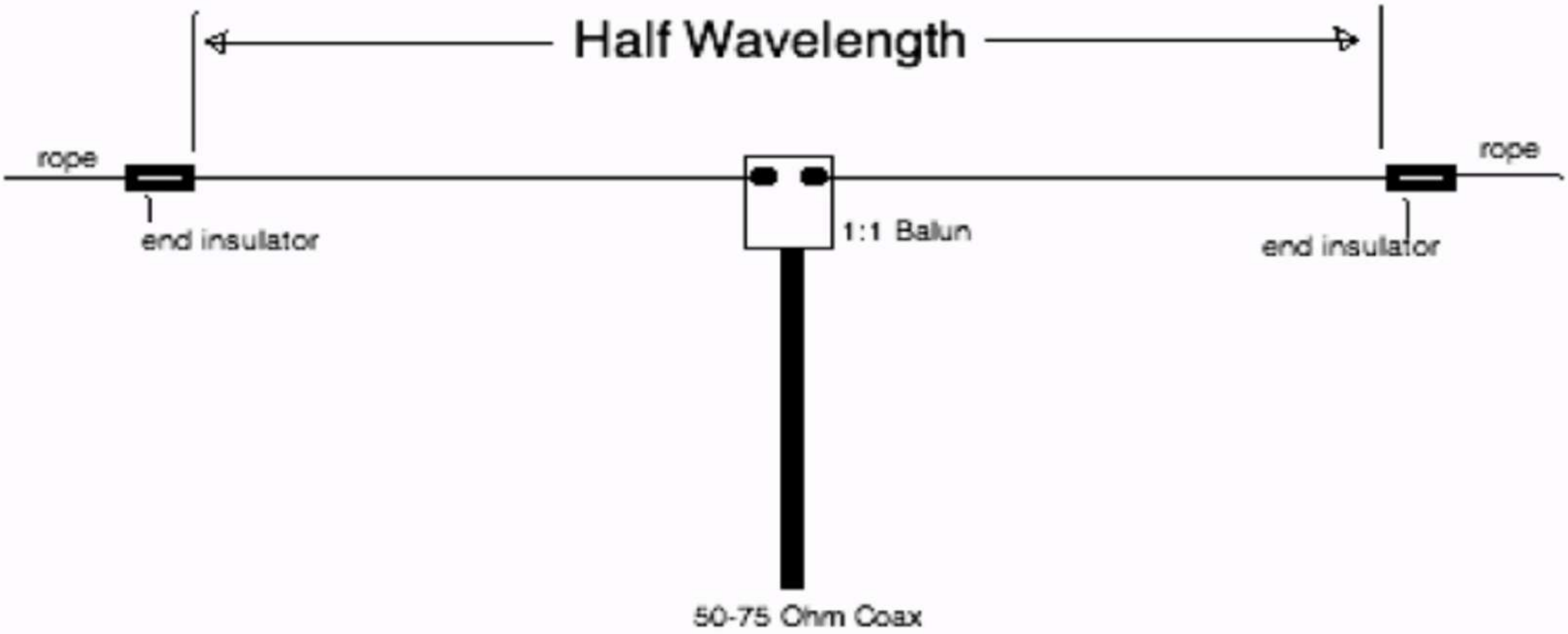

L2
A
L1
D1
1N270
ANT
C
C1
365 pF
C2
0.01 uF
B
PHONES


faraday shield
L1
L2
Coax
Hot
TO ANTENNA
Coax
Shield
D1
1N270
C1
365 pF
C2
0.01 uF
PHONES
faraday shield
WU2D 2009
1/2" MAX
A
L1
Primary Coil
5T of Bare
#14 or #12 AWG
LOOSE
L2
Secondary Coil
5.5-20 MHz
9 to 10T of Bare #14 or #12 AWG
Formed on 2" Diameter
Spaced evenly over 3 Inches
OR
3-8 MHz
15 to 20T of Bare #18 or #14 AWG
Formed on 2" Diameter
Spaced evenly over 4 Inches

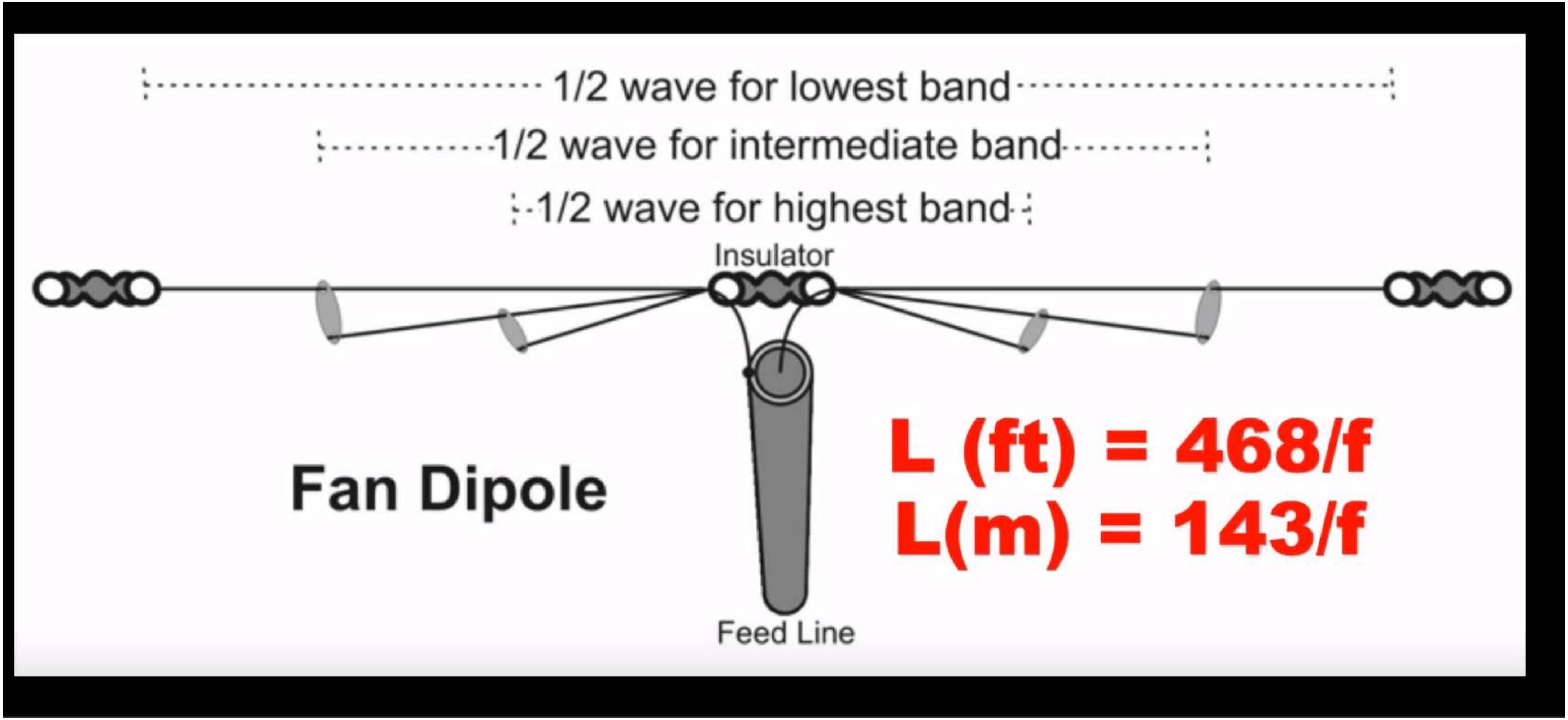


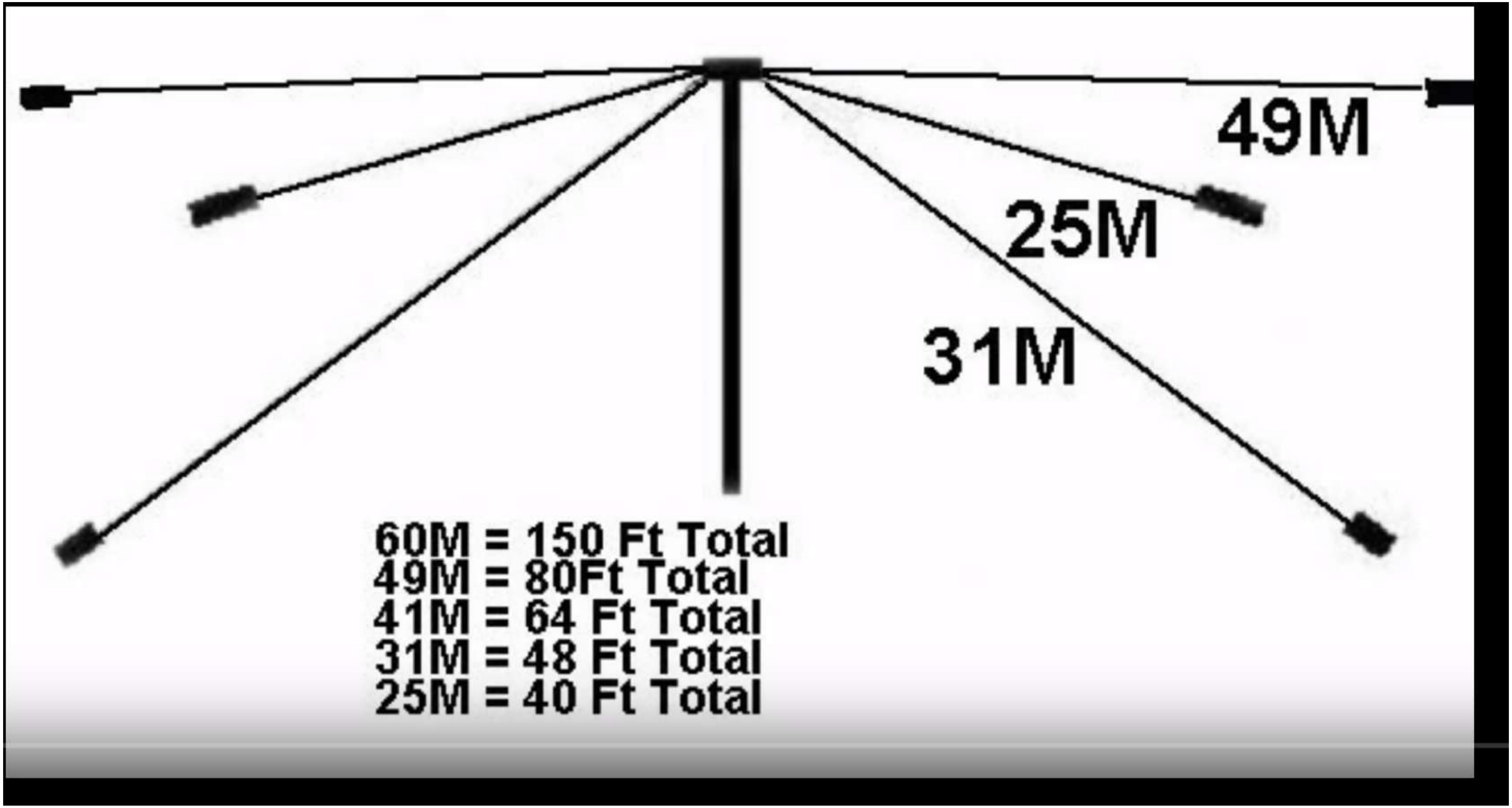


TYPICAL LONG WIRE ANTENNA



TUNED HORIZONTAL DIPOLE ANTENNA

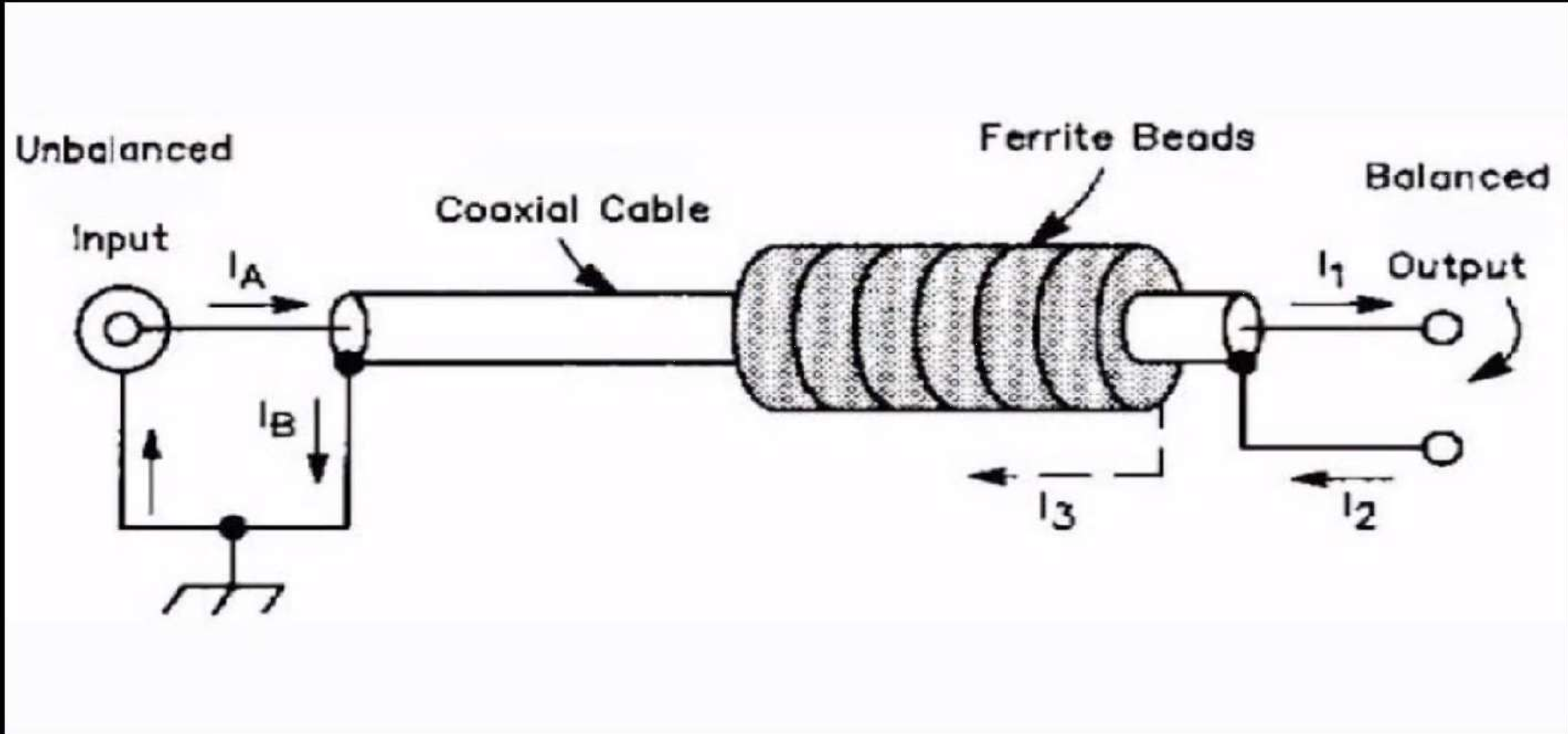

1/2 wave for lowest band
1/2 wave for intermediate band
1/2 wave for highest band
Insulator
Fan Dipole
L (ft) = 468/f
L(m) = 143/f
Feed Line


49M
25M
31M
60M = 150 Ft Total
49M = 80Ft Total
41M = 64 Ft Total
31M = 48 Ft Total
25M = 40 Ft Total


4:1 Balun is Ideal


RG-6, RG59 75 Ohm
w 1:1 Balun
or 300 Ohm Twinlead w
4:1 Balun is Ideal

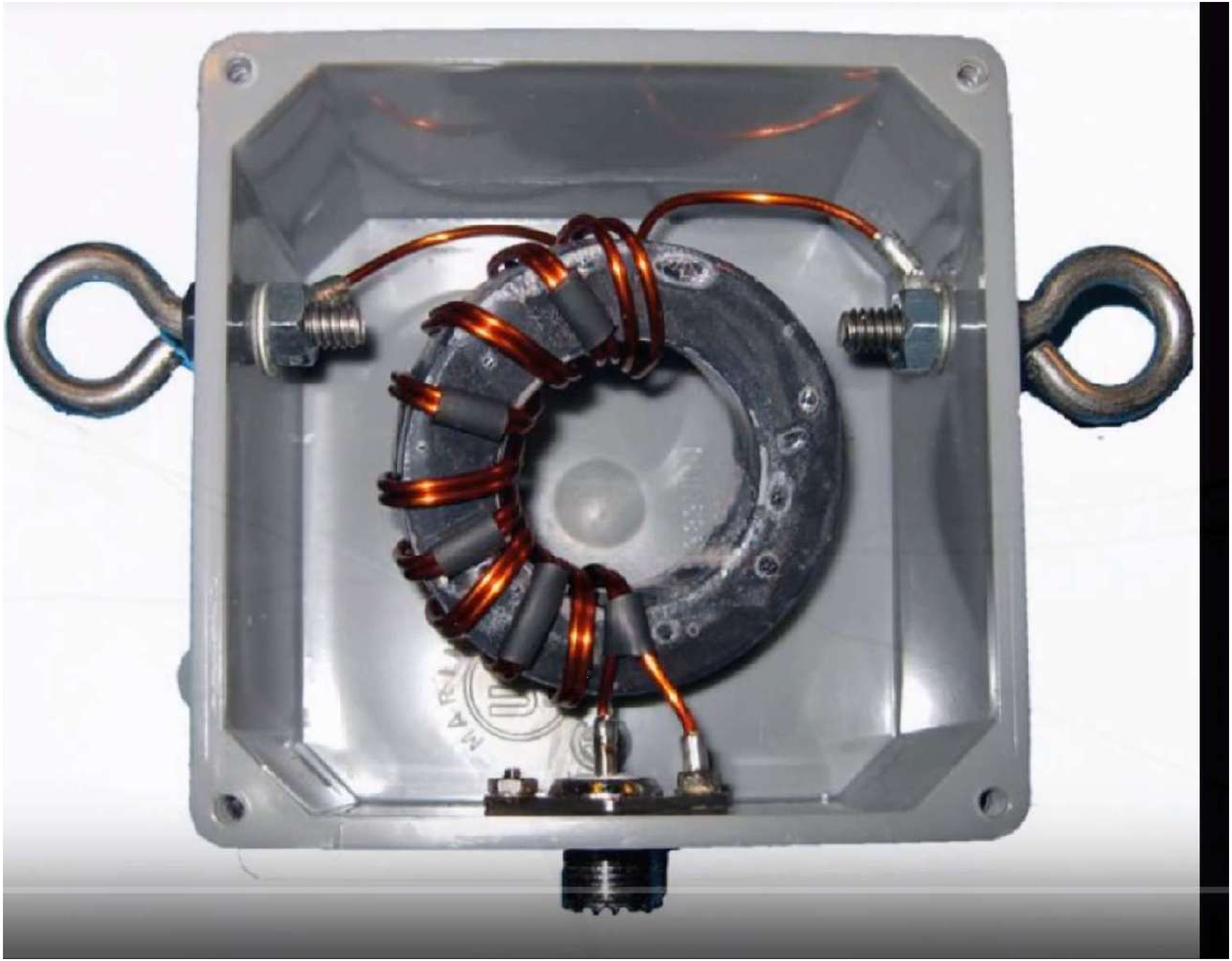

RG-58, RG-223, RG-400
LMR 200, 240
50 Ohm w 1:1 Balun

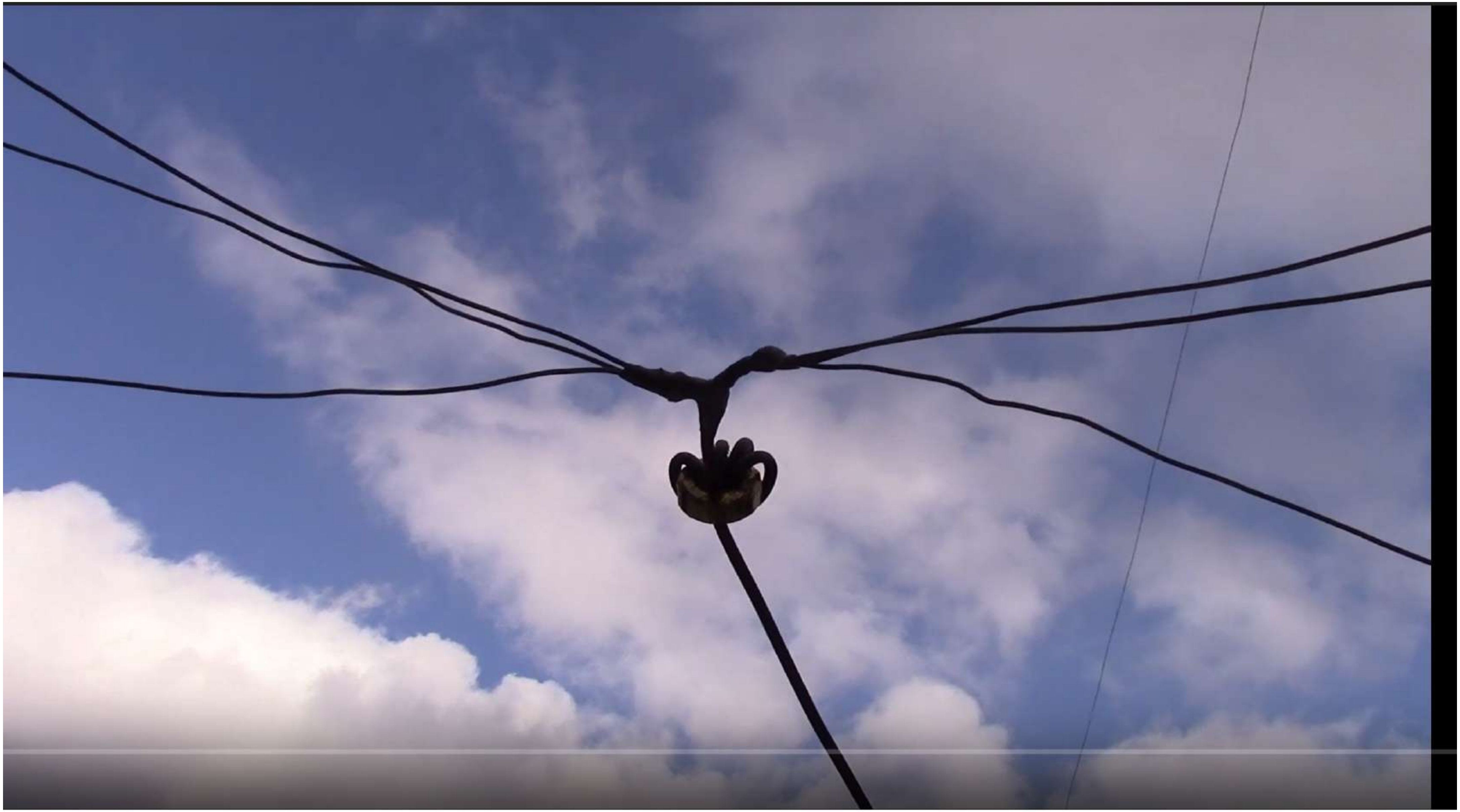


Unbalanced
Input
I_A
Cooxial Cable
Ferrite Beads
Balanced
Output
I_1
I_B
I_3
I_2

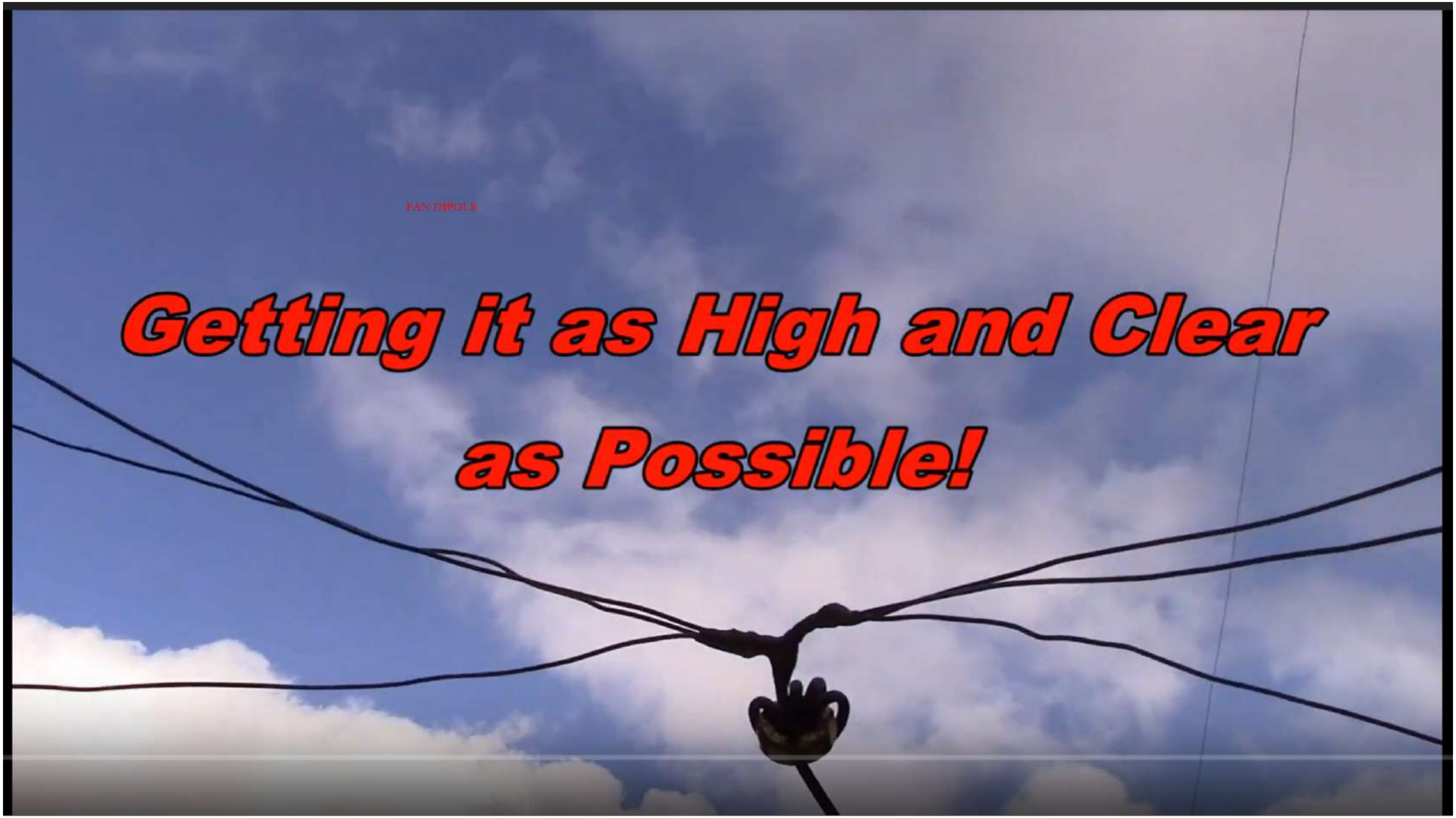

Choke Current
Baluns

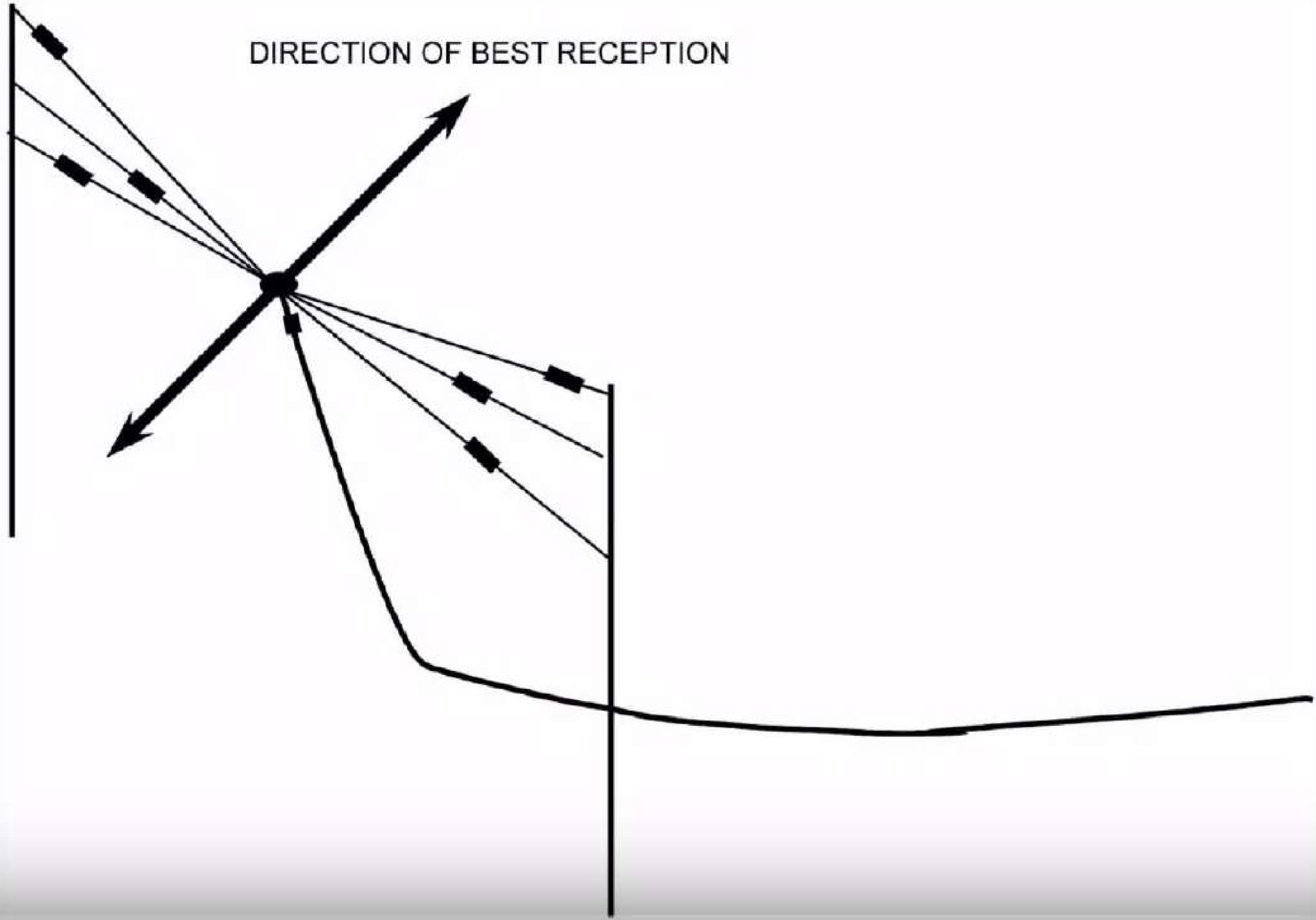

FT-240-61
Type 31 or 43 Material
49 M and up

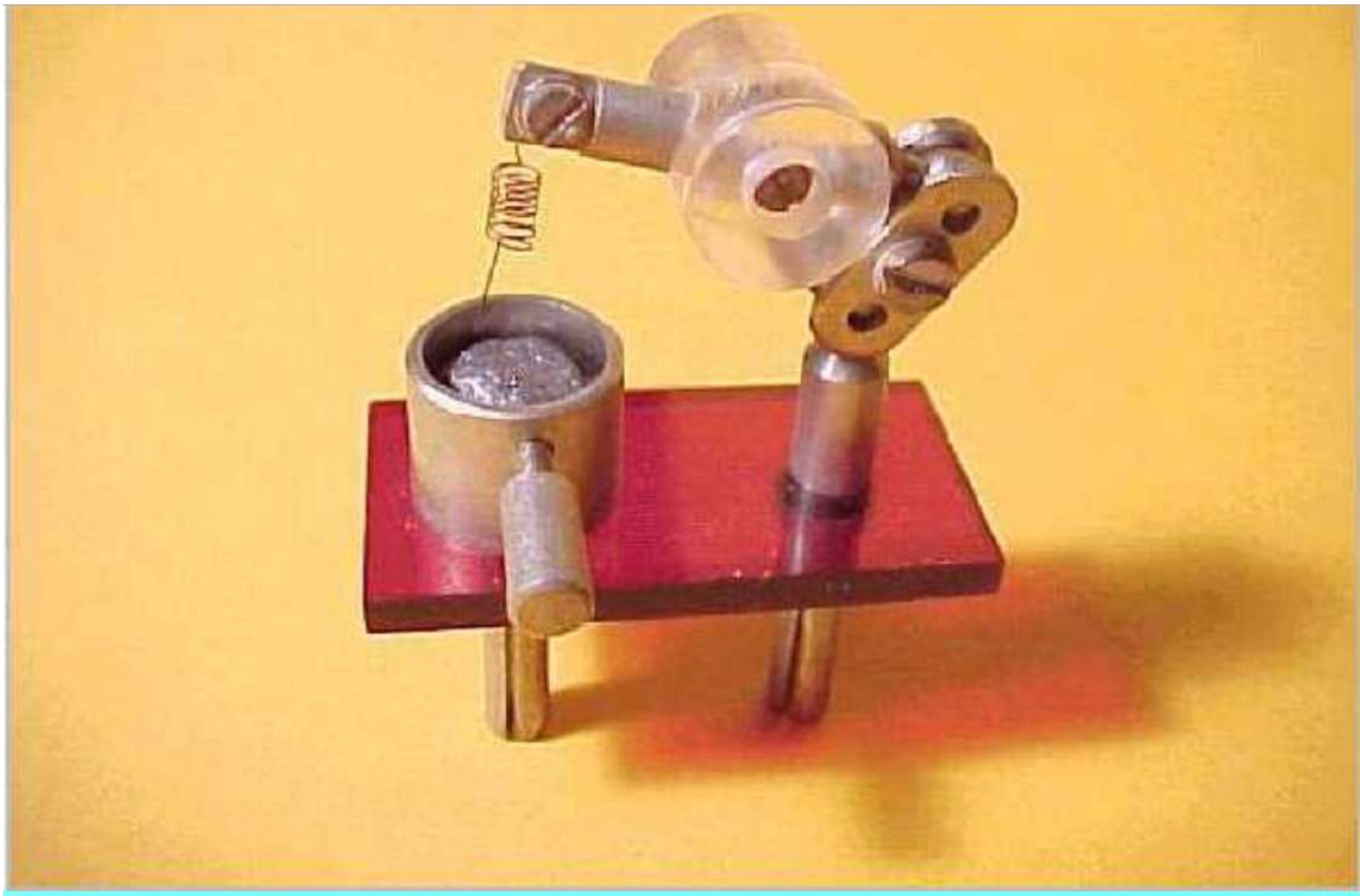


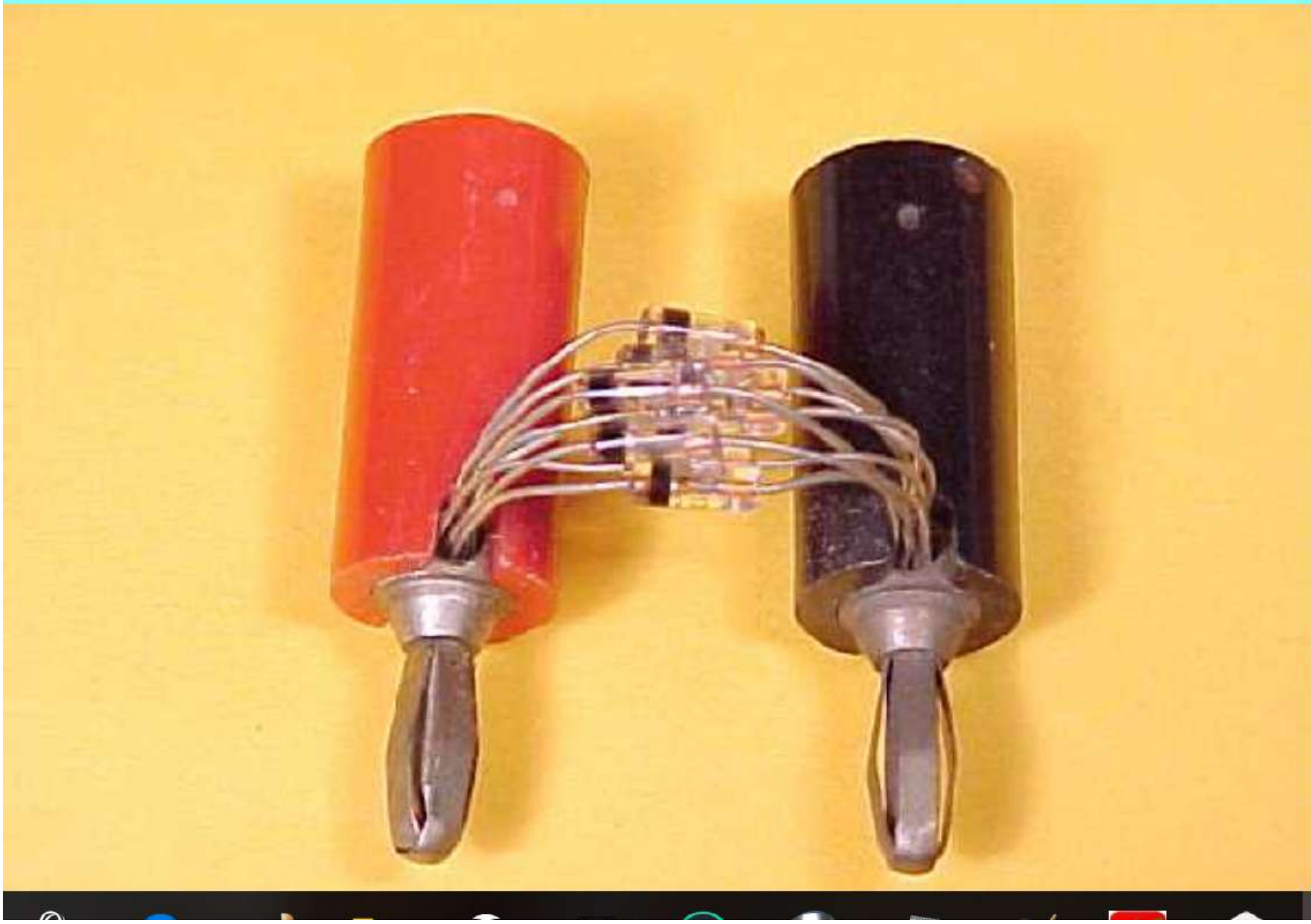


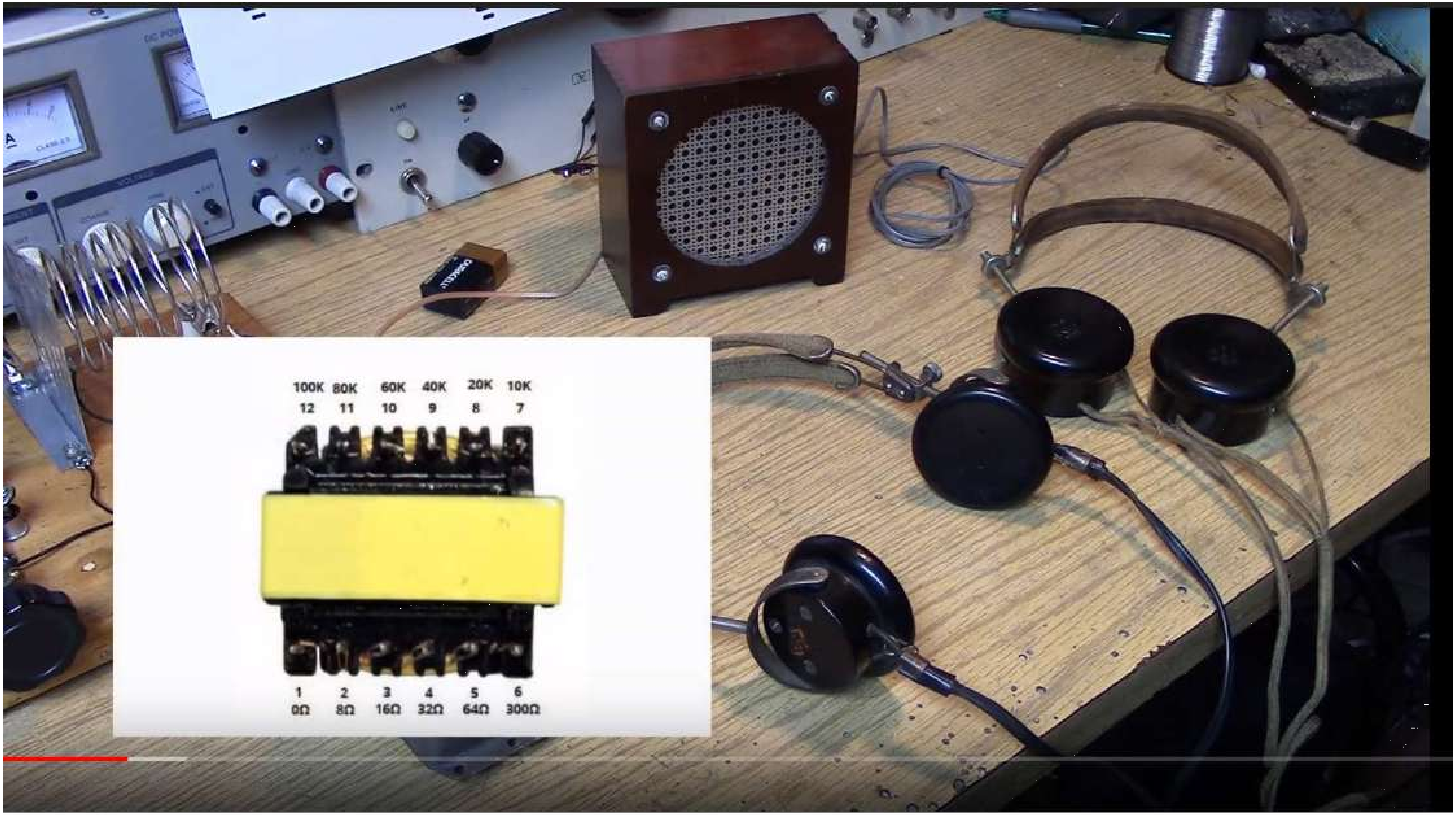

Spreading the wires
in a fan shape
is less important than

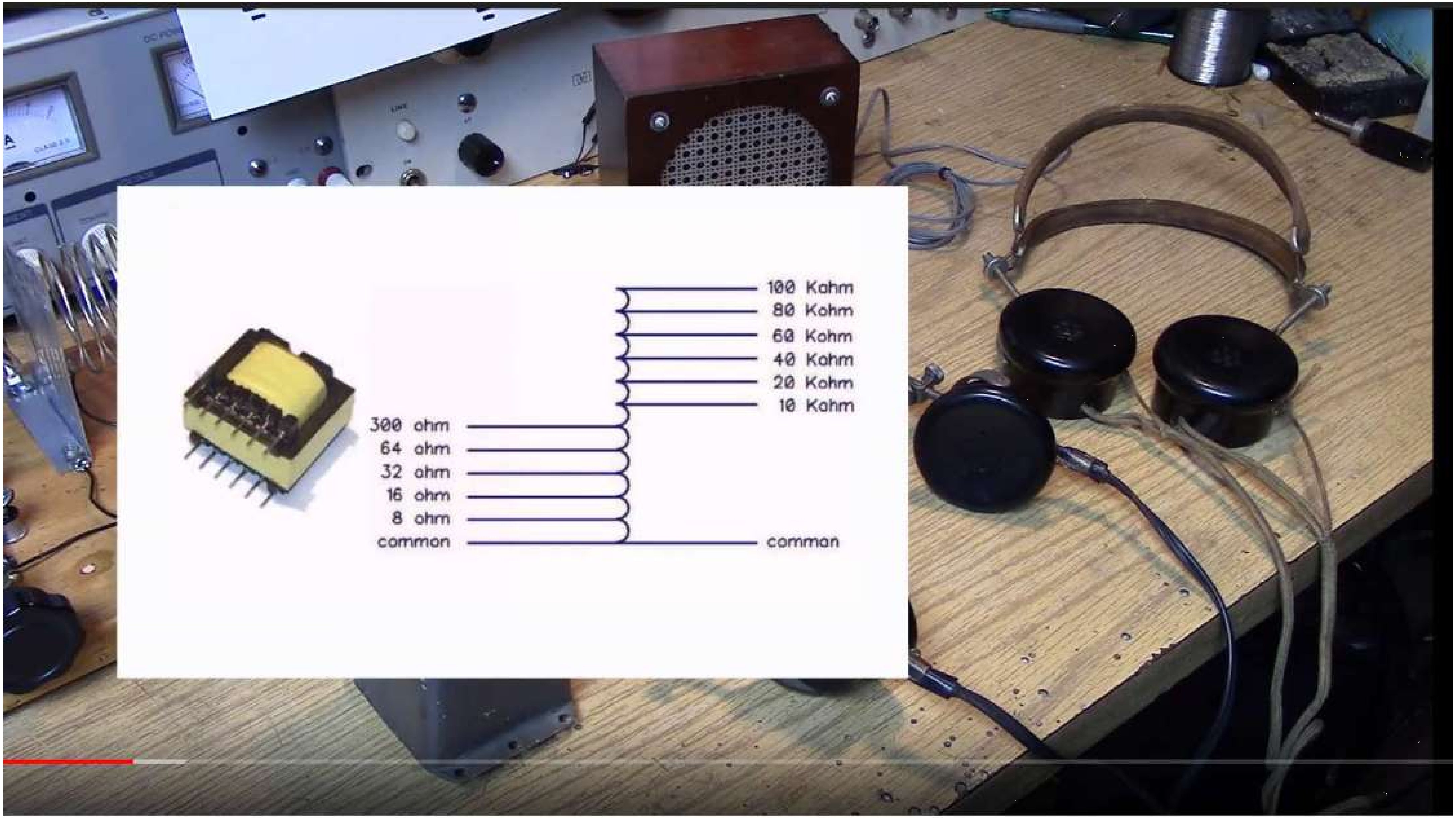

FAN DIPOLE
Getting it as High and Clear as Possible!

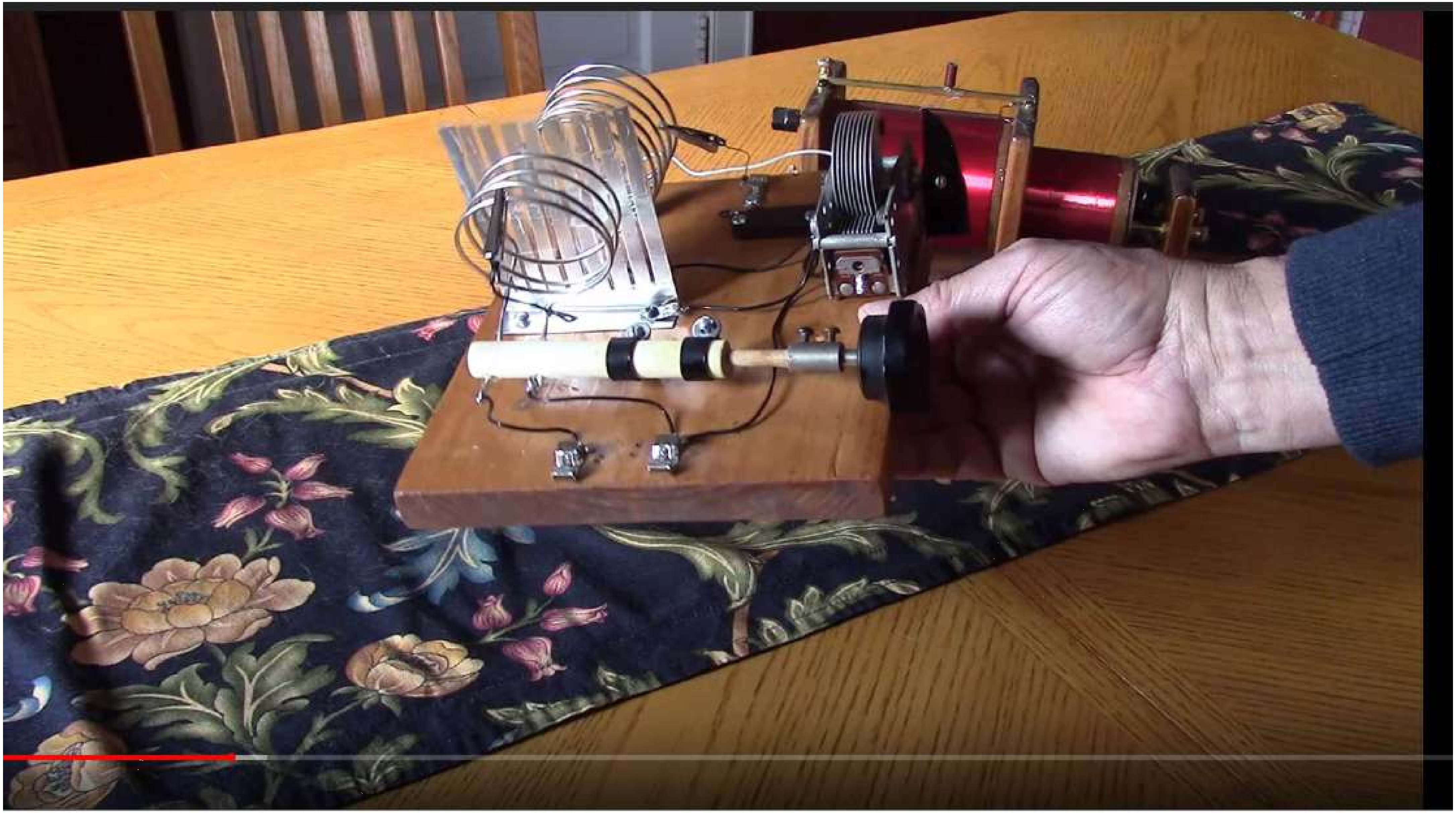

DIRECTION OF BEST RECEPTION

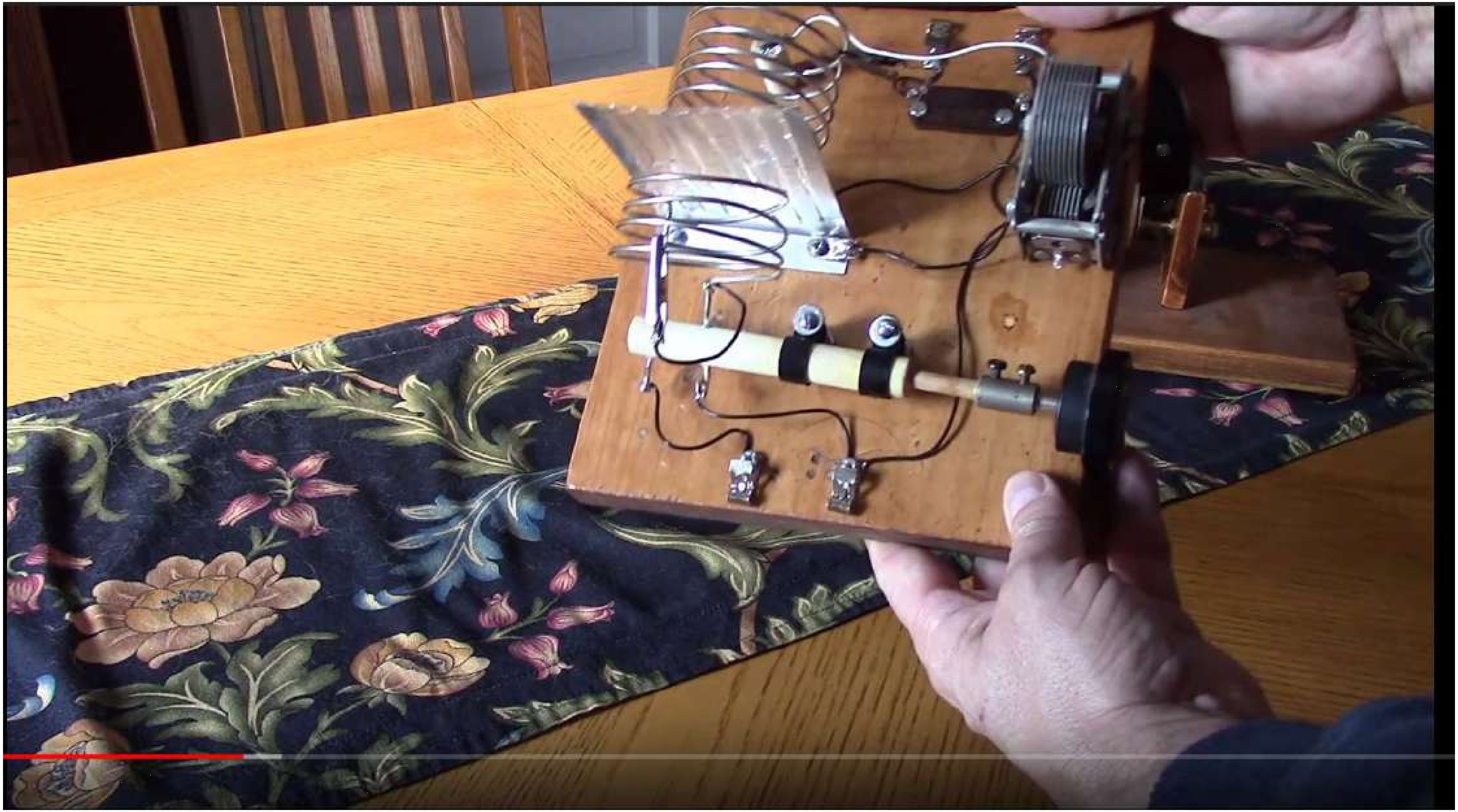


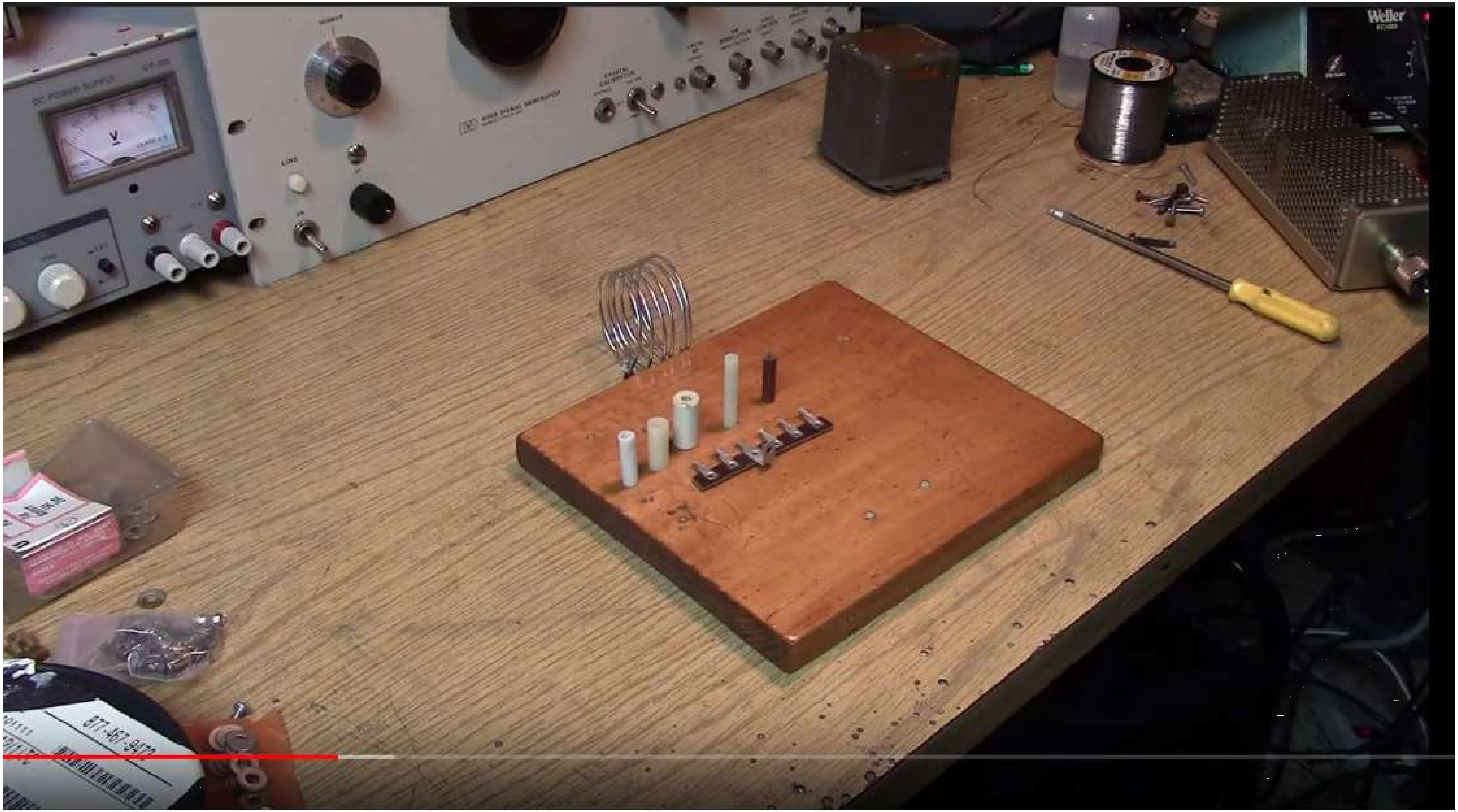


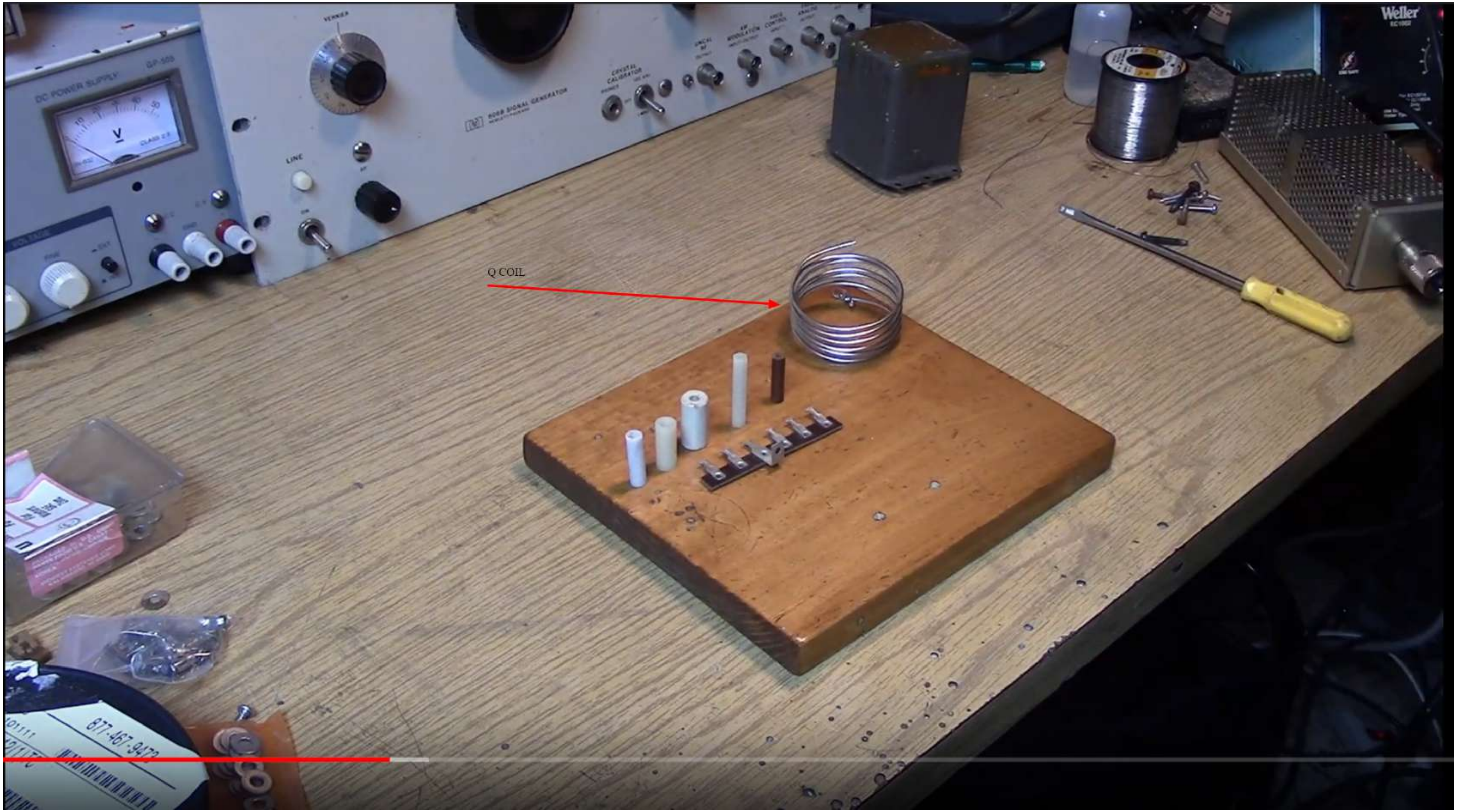

100K 80K 60K 40K 20K 10K
12 11 10 9 8 7
1 2 3 4 5 6
0Ω 8Ω 16Ω 32Ω 64Ω 300Ω


100 Kohm
80 Kohm
60 Kohm
40 Kohm
20 Kohm
10 Kohm
300 ohm
64 ohm
32 ohm
16 ohm
8 ohm
common
common

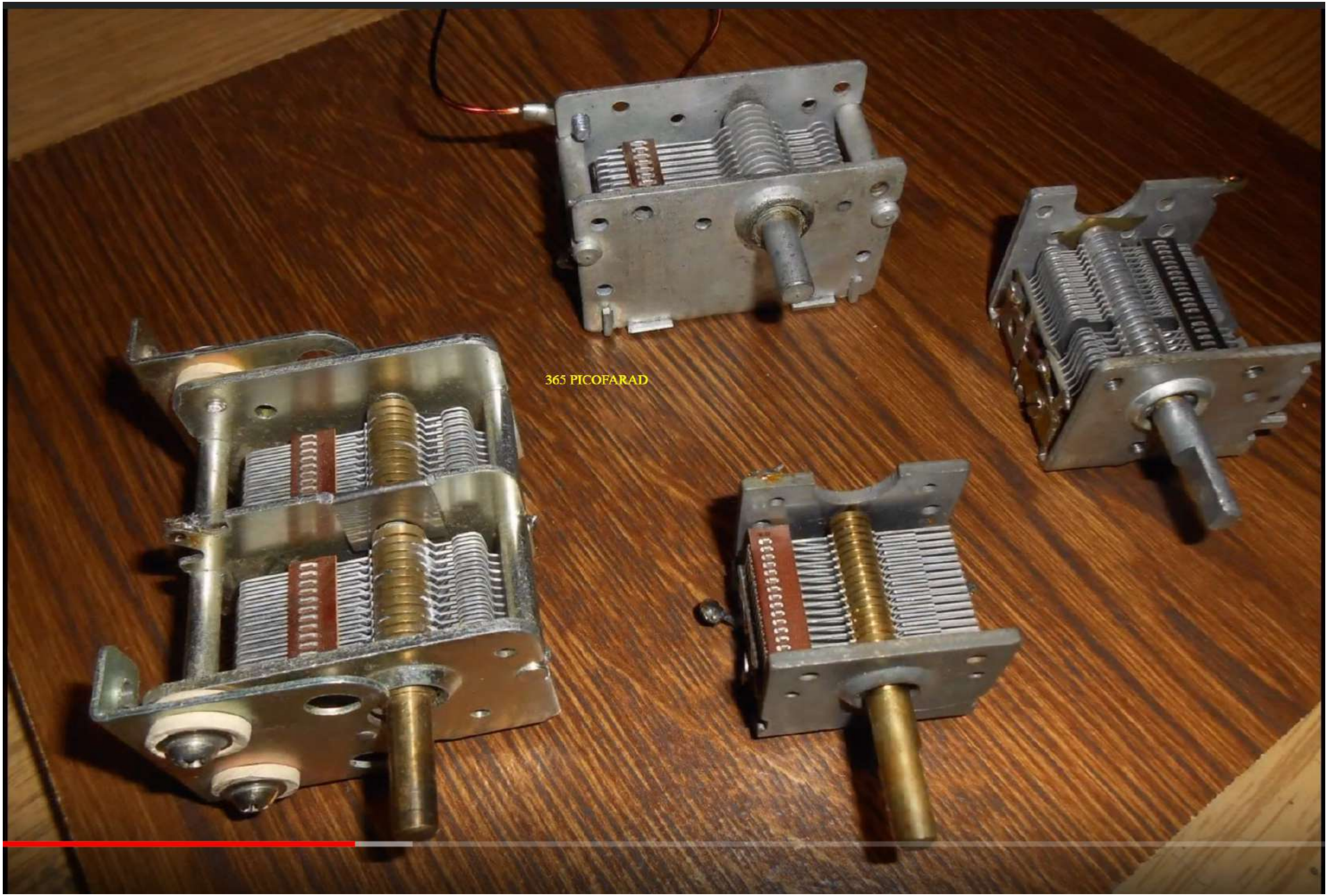


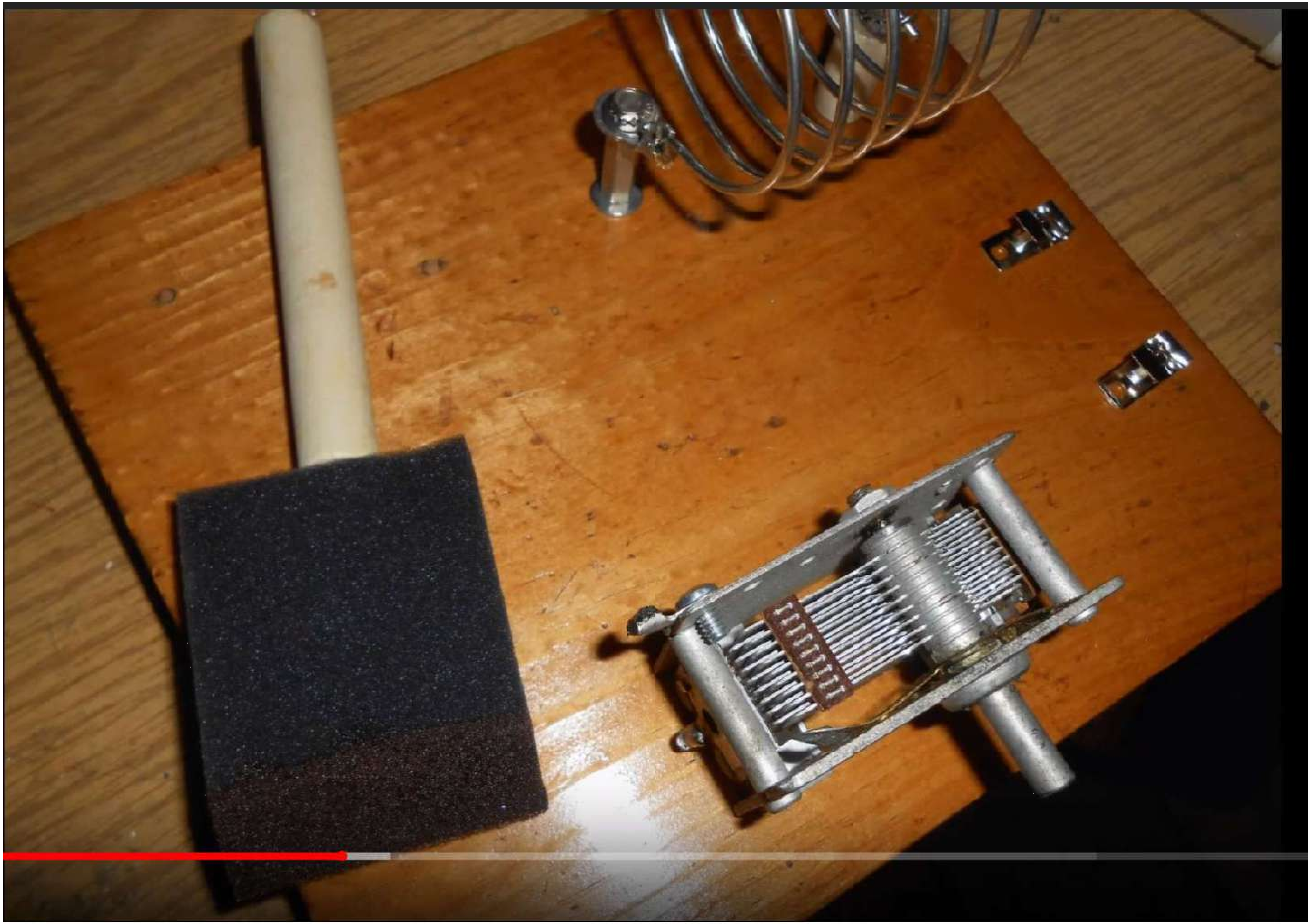


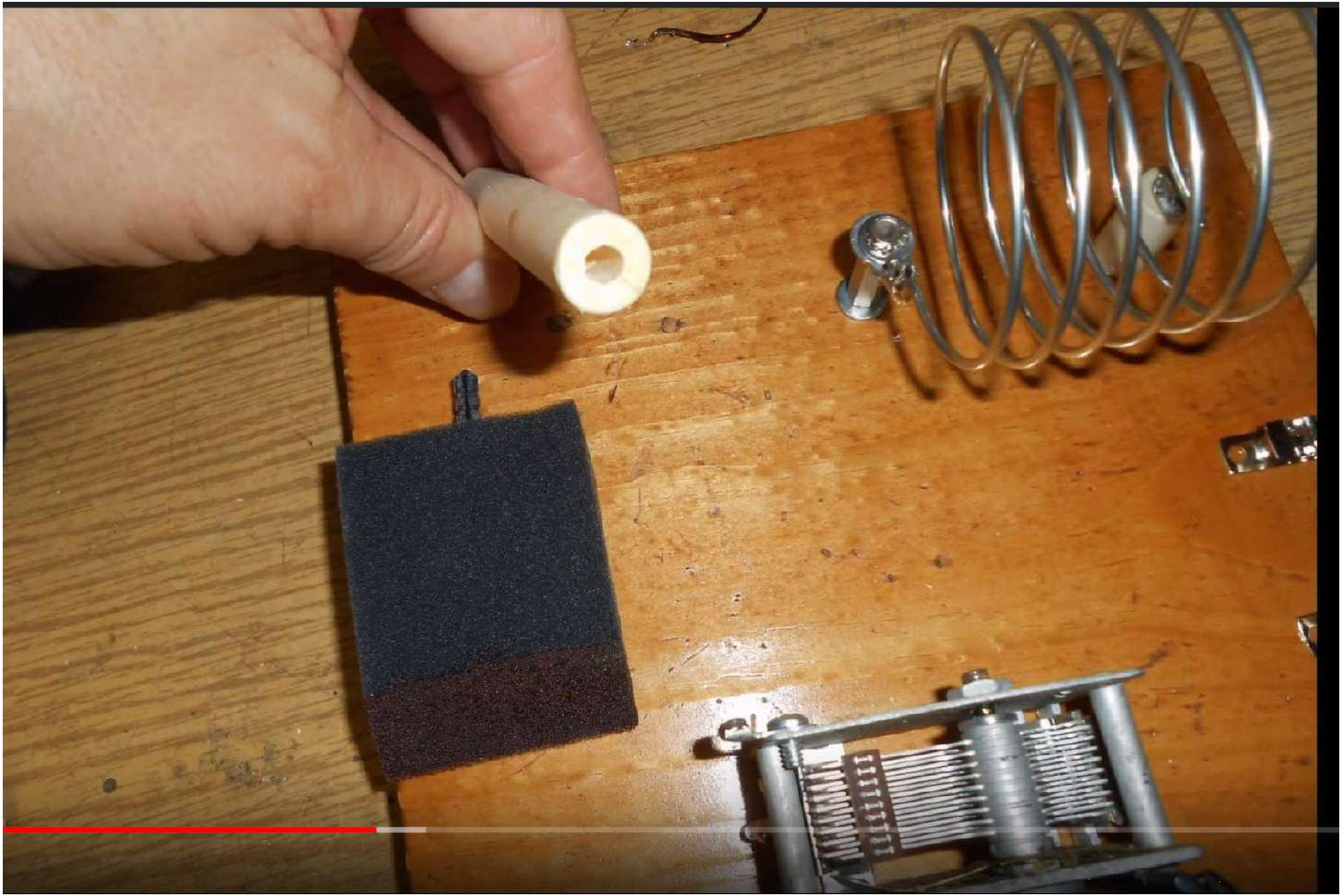

DC POWER SUPPLY
LINE
Weller

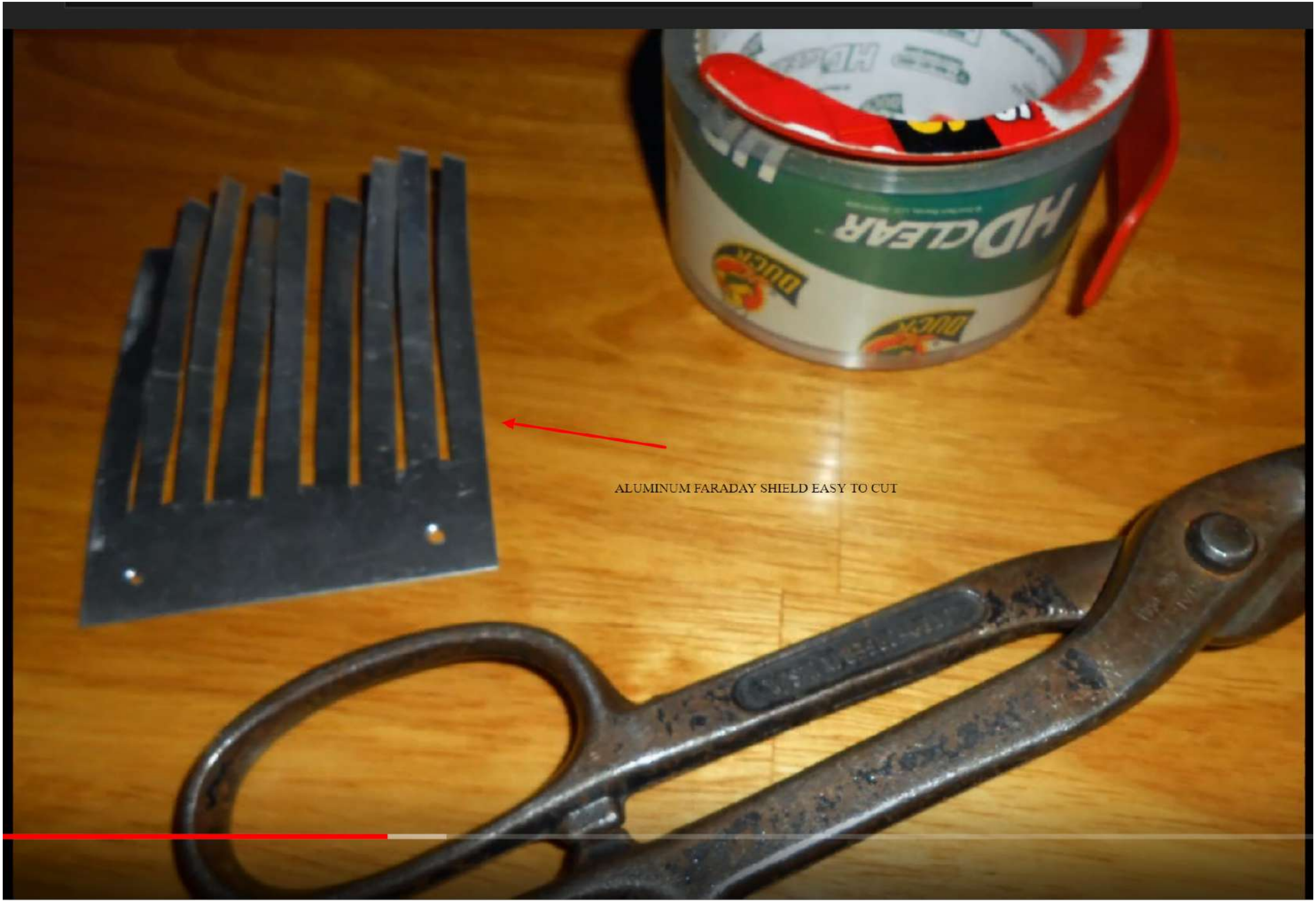

Q COIL
DC POWER SUPPLY
606B SIGNAL GENERATOR
Weller


Some Are Junk
LINE
ON

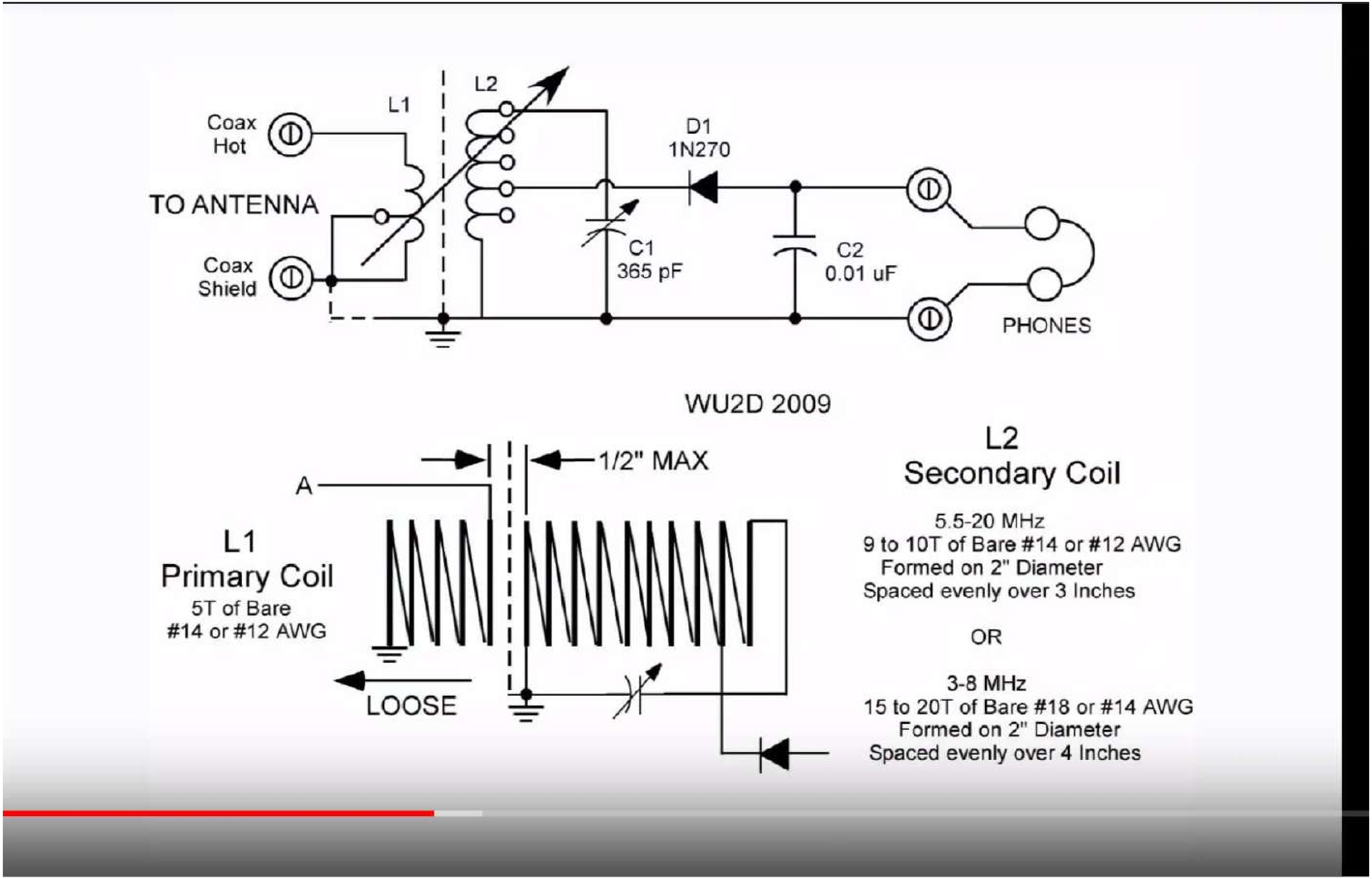

365 PICOFARAD

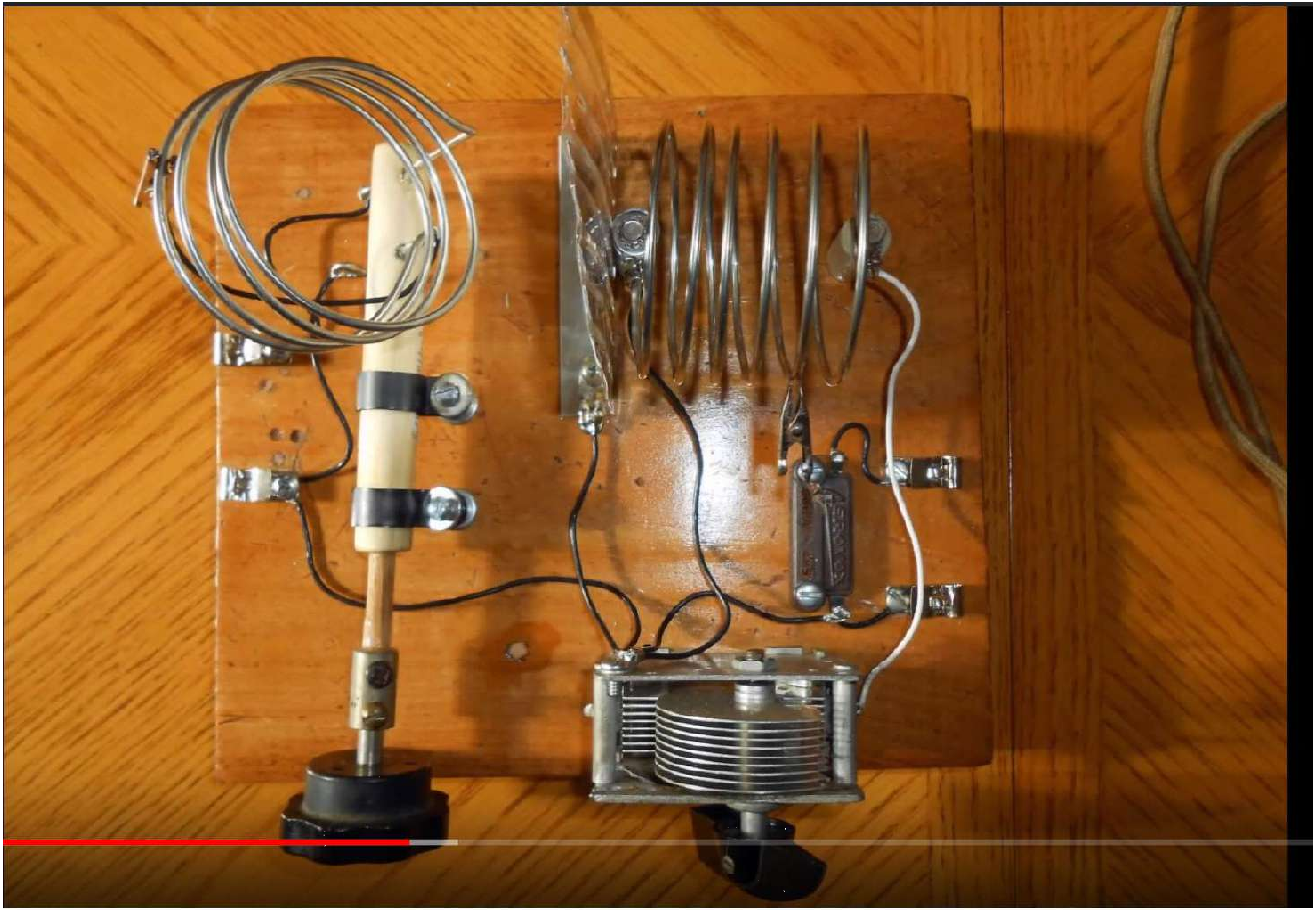


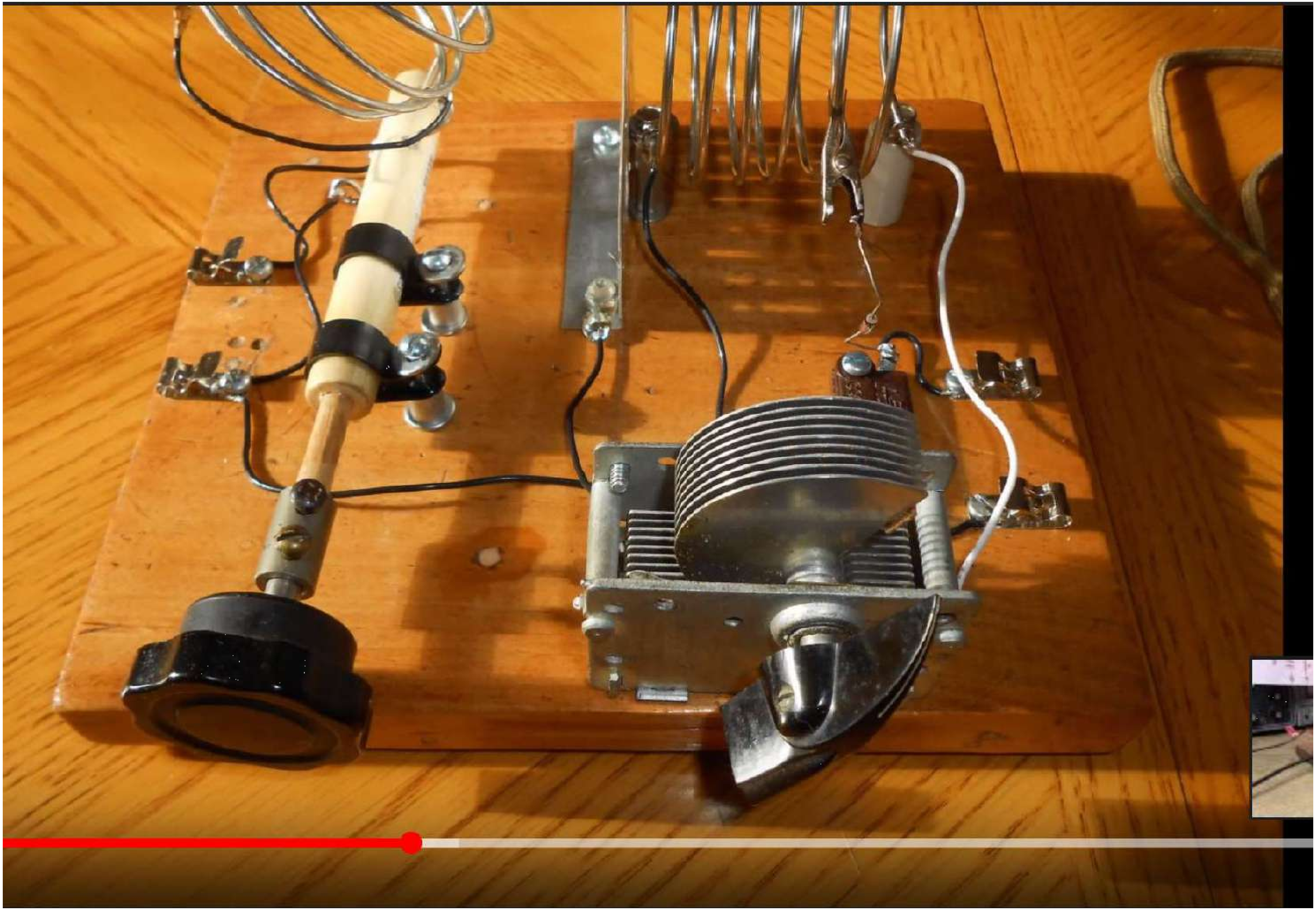


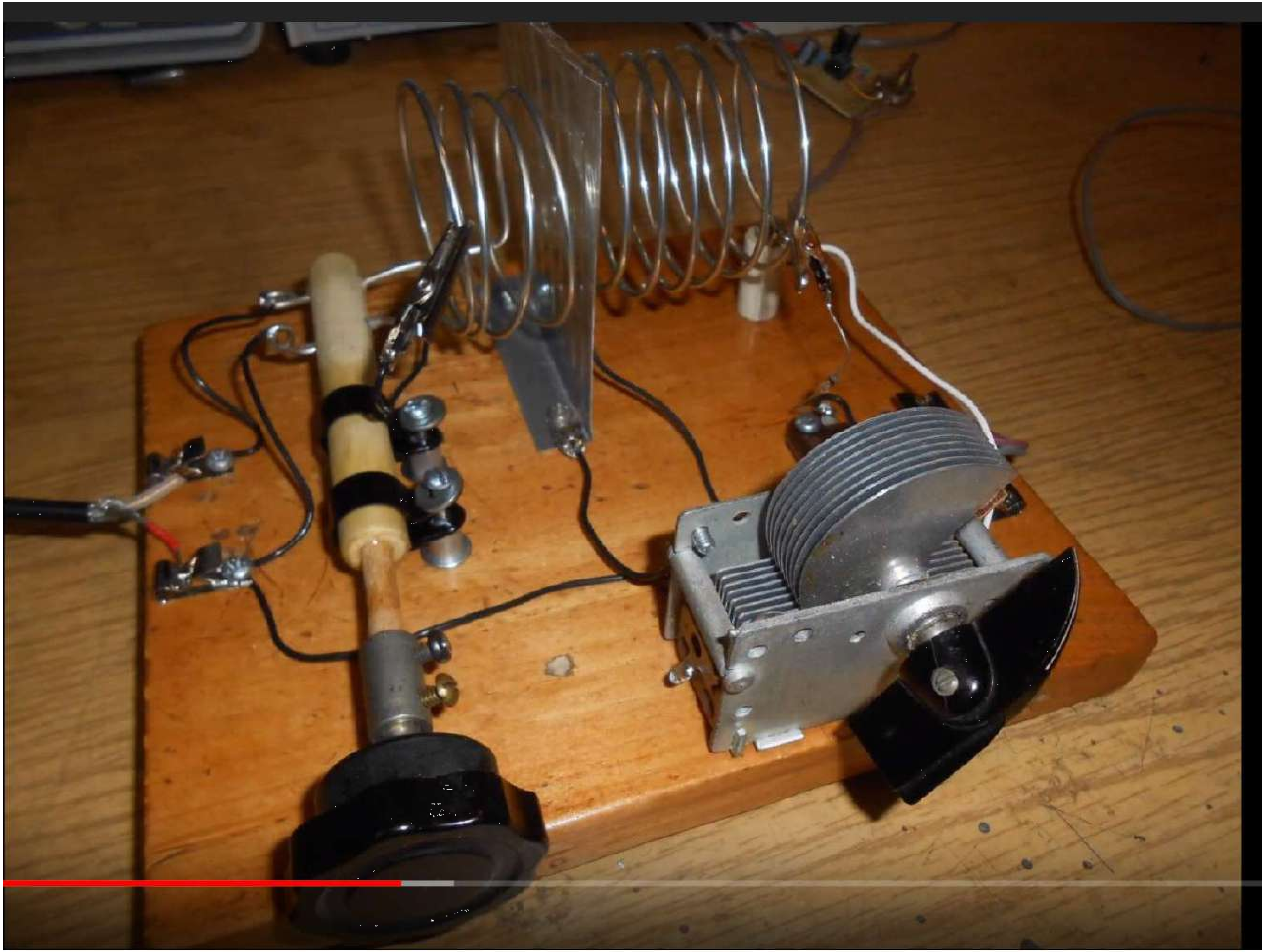

ALUMINUM FARADAY SHIELD EASY TO CUT


CAPACITORS

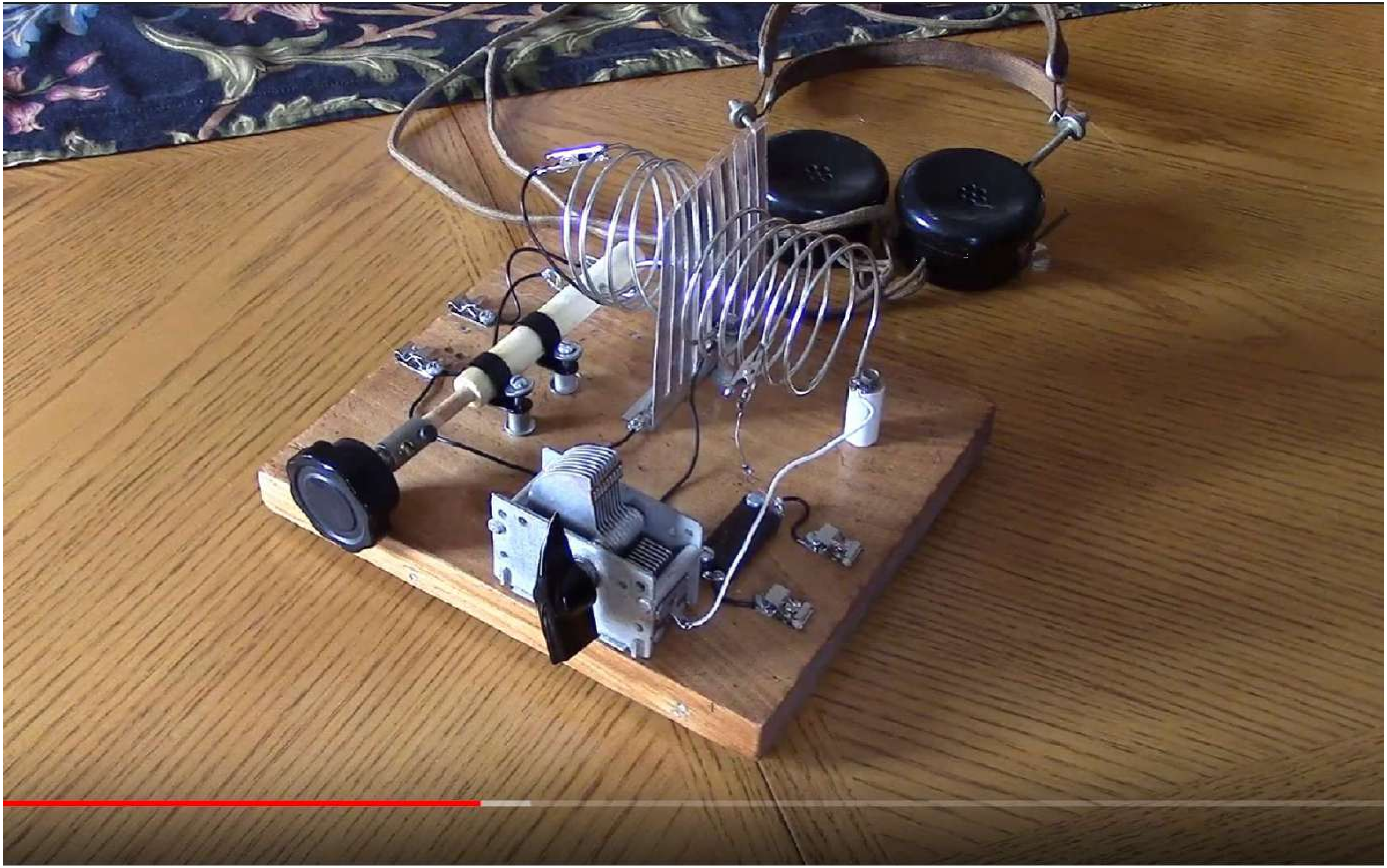

Coax
Hot
L1
L2
TO ANTENNA
Coax
Shield
D1
1N270
C1
365 pF
C2
0.01 uF
PHONES
WU2D 2009
1/2" MAX
A
L1
Primary Coil
5T of Bare
#14 or #12 AWG
LOOSE
L2
Secondary Coil
5.5-20 MHz
9 to 10T of Bare #14 or #12 AWG
Formed on 2" Diameter
Spaced evenly over 3 Inches
OR
3-8 MHz
15 to 20T of Bare #18 or #14 AWG
Formed on 2" Diameter
Spaced evenly over 4 Inches



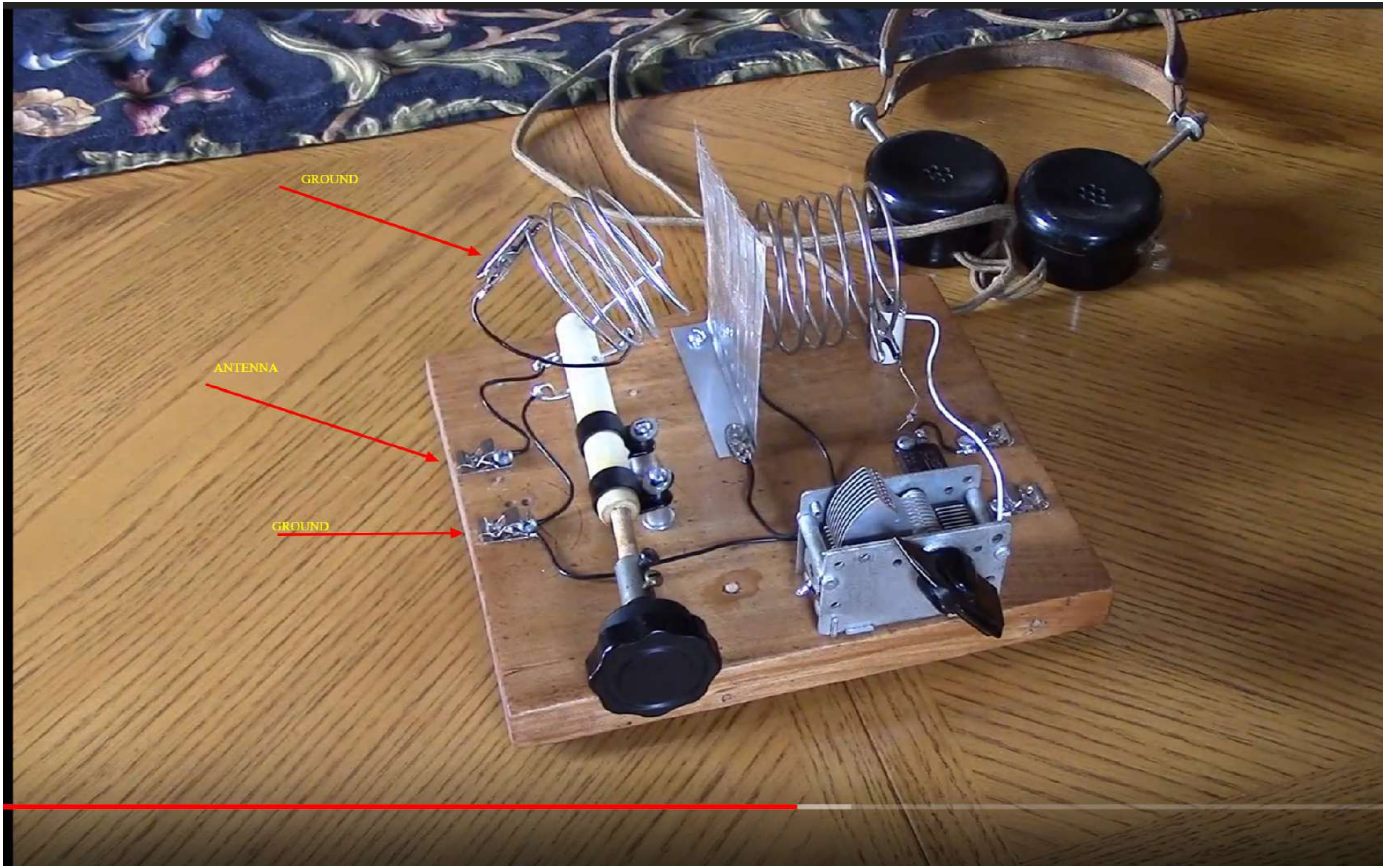


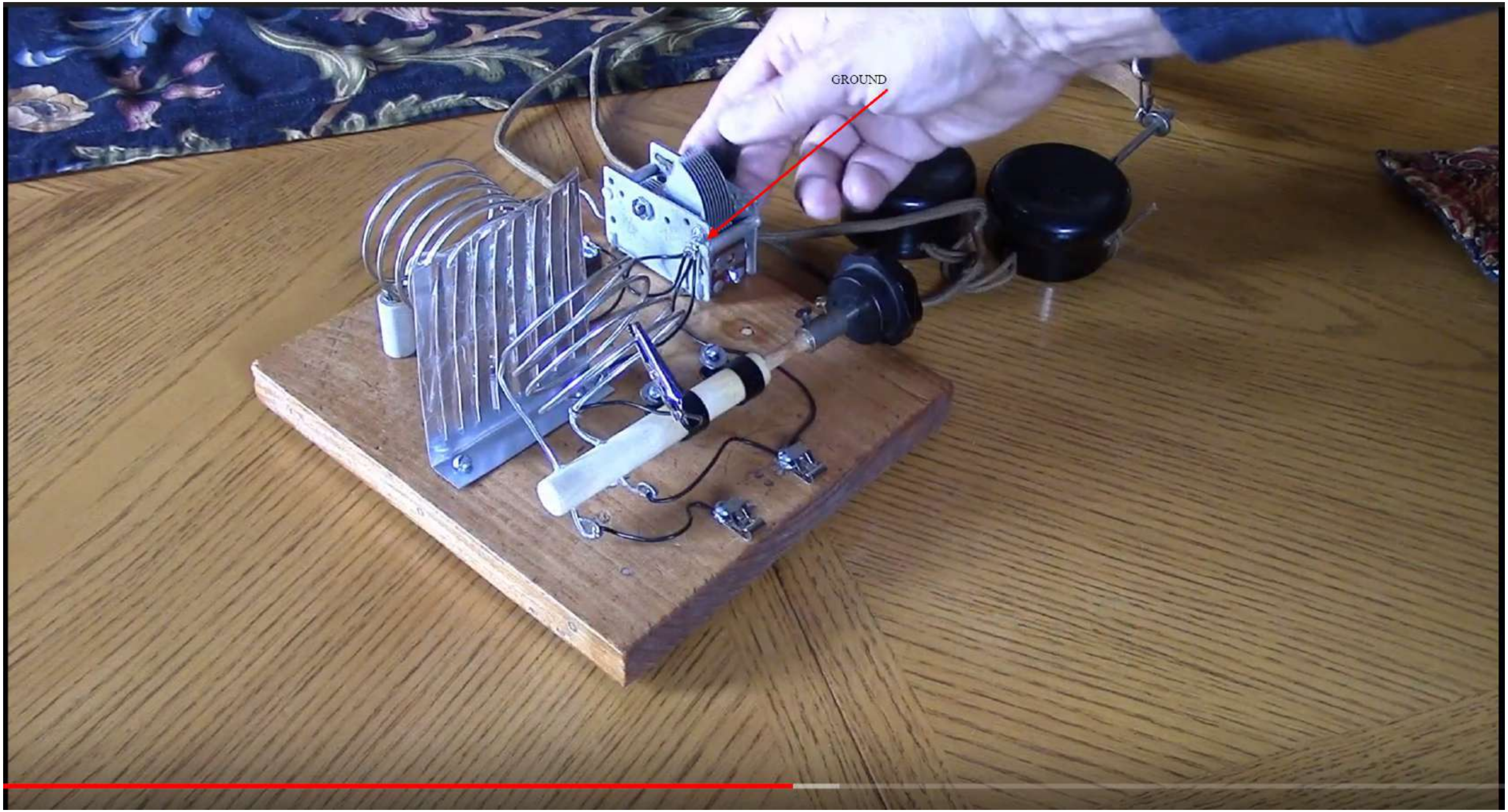



MORE TURNS LOWER FREQUENCY MORE TURNS ON THE PRIMARY EQUALS
MORE COUPLING

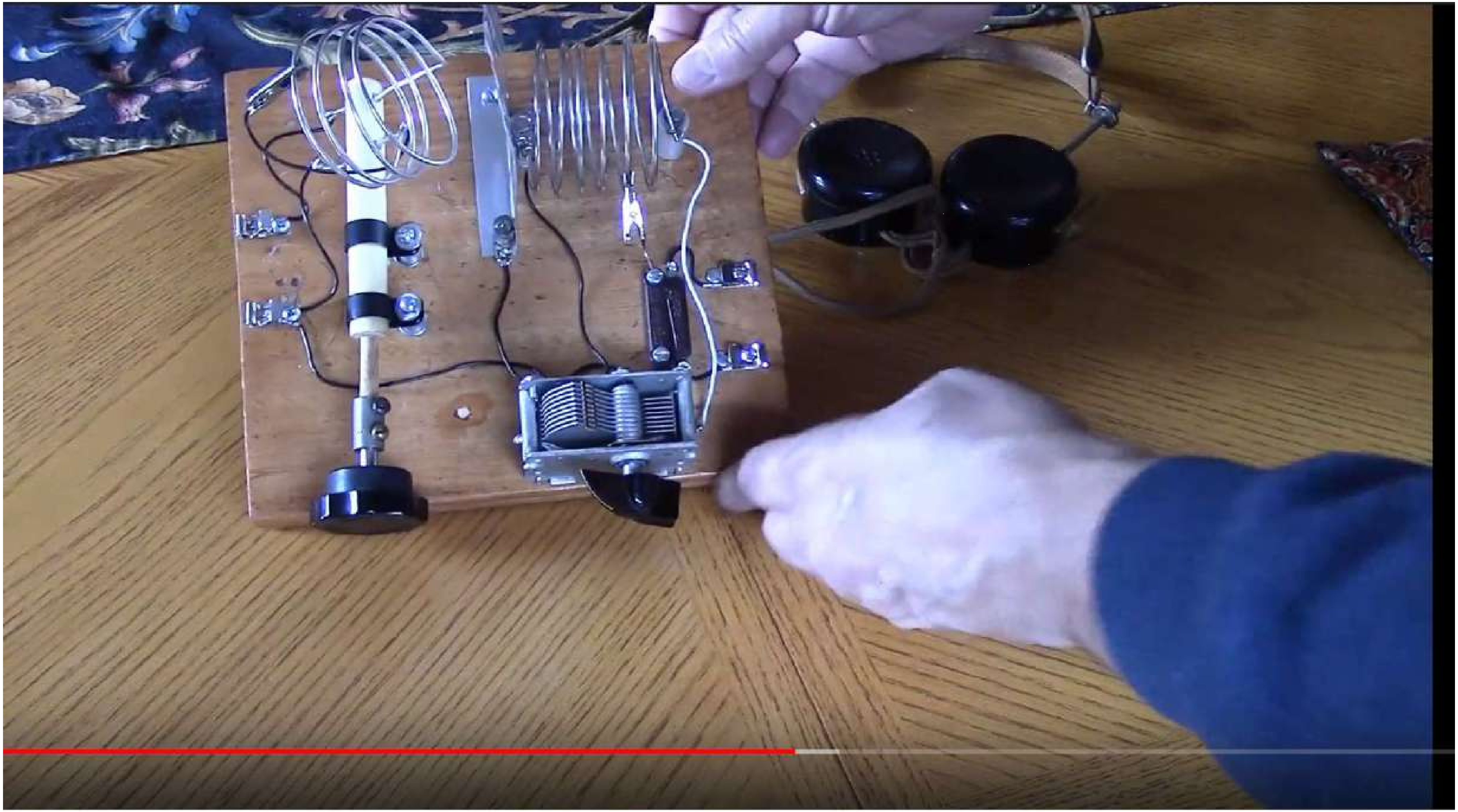



Looser Coupling
= More Selectivity


GROUND
ANTENNA
GROUND


GROUND


X
X
Add your Ground Wire
Here or Here



Illini .006uf (6000pf) 1500v dc Mica Capacitor (Lot of 2)

Pre-Owned

$14.00

or Best Offer

+$4.19 shipping

Guaranteed by **Tue, Feb. 5**

Cornell Dubilier Brown Drop Capacitor 6000pF 600v DPMS6D6 .006uF AMP Audio 2pc

Brand New

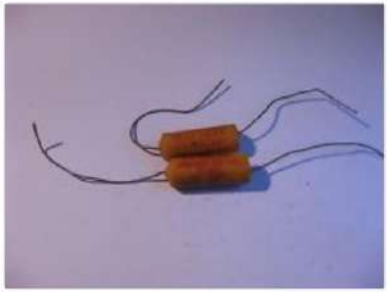
$9.95

or Best Offer

Free Shipping

FAST 'N FREE

Guaranteed by **Wed, Feb. 6**



Mallory Plascap Capacitor .006uF 600VDC PT-626 Axial - NOS Qty 2

New (Other)

$4.99

or Best Offer

+$7.50 shipping

2 new & refurbished from $4.99

From Canada

T.C.C. Capacitor .006uF 600VDC A03T16 - NOS Qty 2

New (Other)

$8.99

or Best Offer

+$6.50 shipping

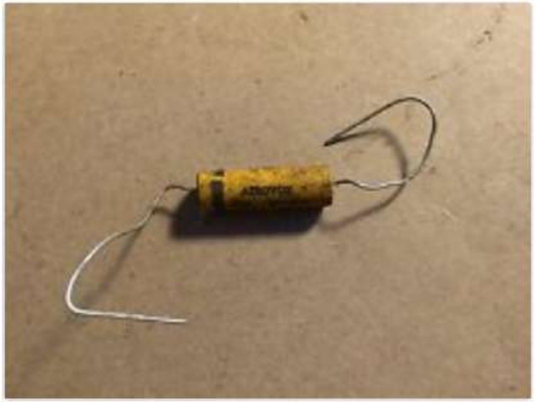
From Canada

6 nF 2500 V Vintage Mica Capacitor Sangamo .006 microfarad 2.5 kilovolt

$3.25

or Best Offer

+$3.90 shipping



NOS Vintage Aerovox .006 uf 600v Capacitor Type 684 Wax Guitar Tone Cap

$7.99

Buy It Now

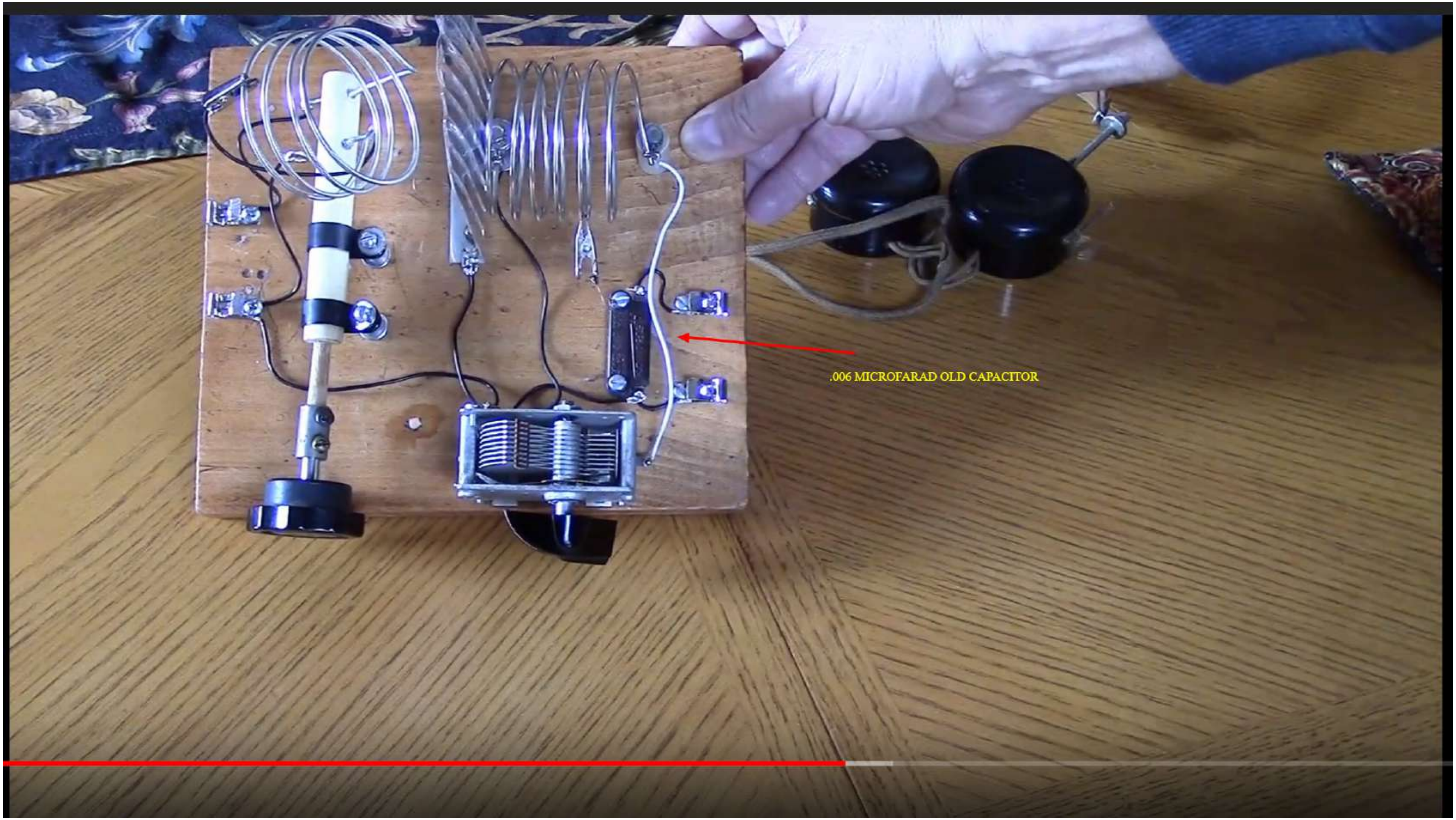
+$4.00 shipping

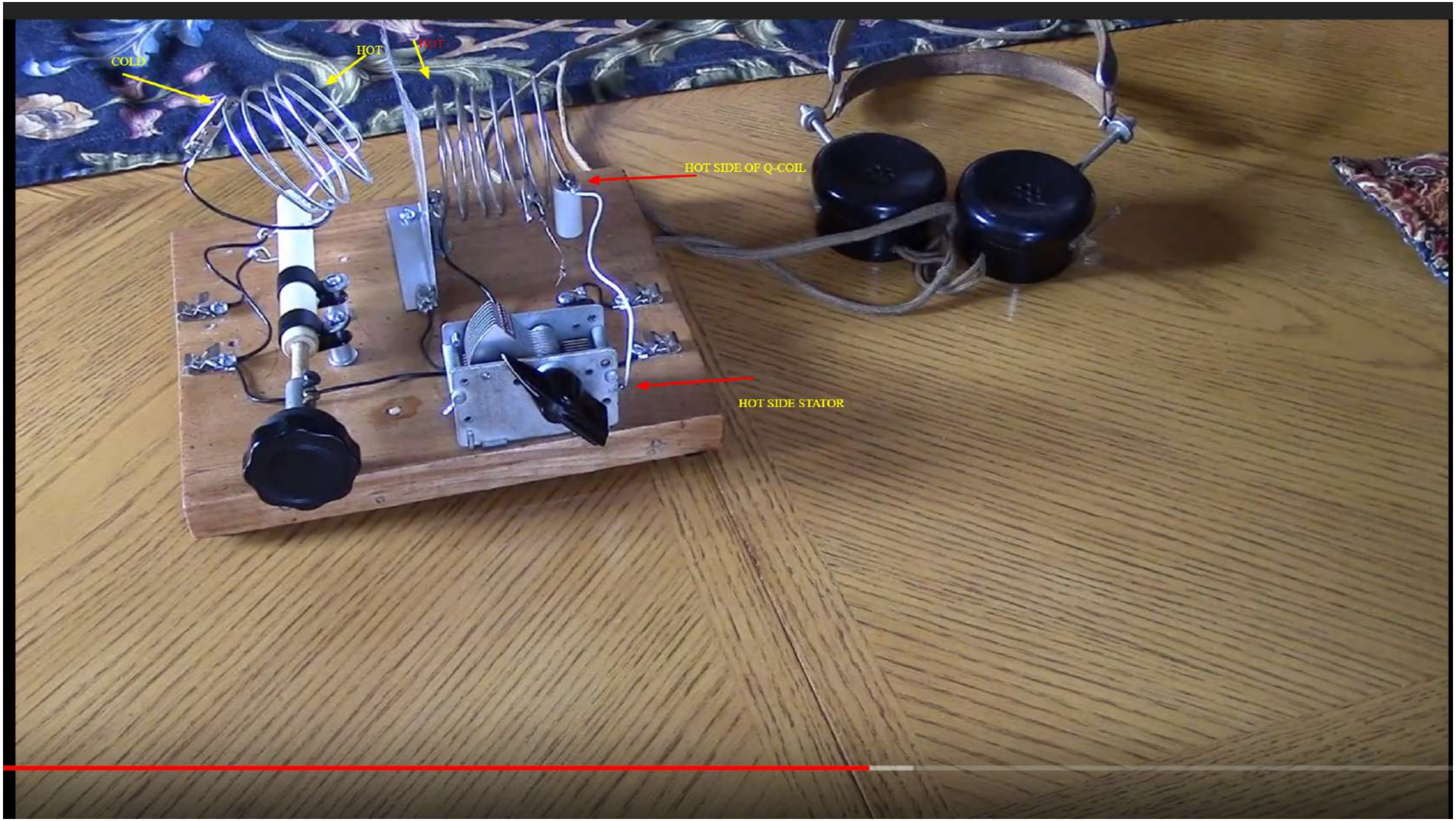
NOS Sprague Black Beauty .006 uf 600v Capacitor Vintage Guitar Tone Cap qty avai

$4.99

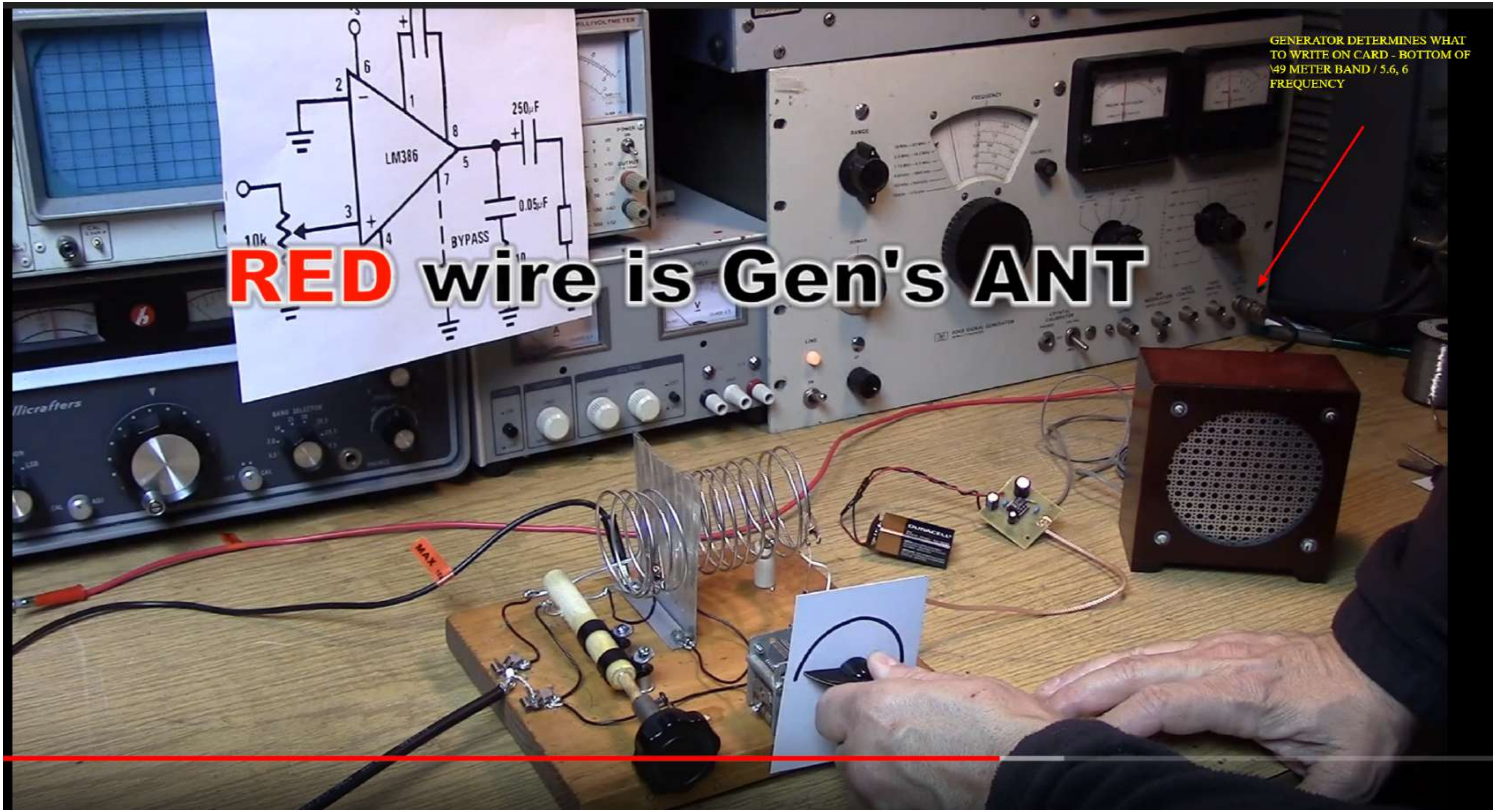
Buy It Now

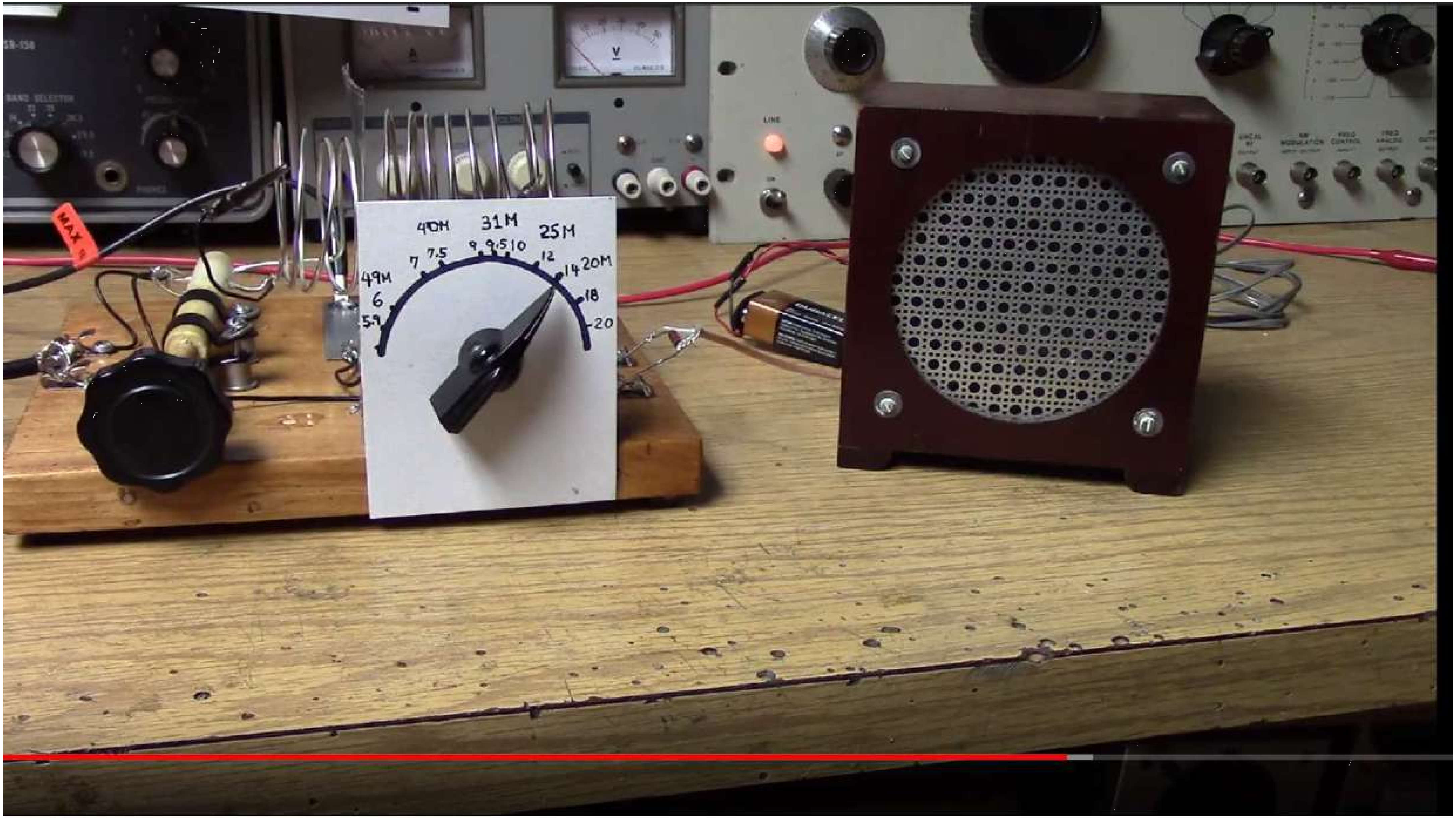
+$4.00 shipping


.006 MICROFARAD OLD CAPACITOR



COLD
HOT
HOT
HOT SIDE OF Q-COIL
HOT SIDE STATOR


GENERATOR DETERMINES WHAT TO WRITE ON CARD - BOTTOM OF \49 METER BAND / 5.6, 6 FREQUENCY
LM386
250μF
0.05μF
10k
BYPASS
RED wire is Gen's ANT
MAX


49M
40M
31M
25M
20M
5.9
6
7
7.5
9
9.5
10
12
14
18
20